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A STUDY OF THE USE OF DISCUSSION BOARDS IN L2 WRITING INSTRUCTION AT THE UNIVERSITY OF BAHRAIN

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ABSTRACT

The aim of this study is to develop an understanding of the effectiveness of using academic discussion boards in Bahraini L2 settings, where L2 instruction has many limitations. There were two main research objectives: a) to investigate the pedagogical effectiveness of using discussion boards in regards to students' writing development, and b) to analyse the discoursal features of students' contributions to the discussion board.

A variety of data collection and analysis methods were used to fulfil these aims. First, a quasi-experiment was carried out to investigate the impact of discussion boards on students' L2 writing. 41 L2 university students were divided into a control group and an experimental group, the latter exploiting discussion boards for 10 weeks. Pre- and post-study writing tests, questionnaires and interviews were also used to assess students' perceptions regarding the use of discussion boards. In addition, 30 university teachers completed a questionnaire and some were interviewed to investigate their perceptions of using discussion boards. A content analysis of the students' online contributions was also undertaken to evaluate their participation and involvement. Finally, a corpus was built to examine the second main research question regarding the linguistic features of the discussion board discourse.

With respect to the quasi-experiment, while there were no significant differences in students' written fluency, significant differences between the experimental and control groups regarding accuracy and grammatical and lexical complexity were found. Secondly, students were also observed to participate actively in the discussions although some negative behaviour was observed. Thirdly, mostuniversity teachers and students had positive perceptions of discussion boards although a number of disadvantages were also reported.

With regard to the second main research question on the linguistic features of discussion board discourse, findings suggested that the discourse was a register with writing-like and speech-like features but varied according to individuals' linguistic, social and academic needs and to the types of contribution.

These results contribute further to the existing research on the use of instructional technologies in L2 classrooms and extend our understanding of the pedagogical and linguistic nature of this use. This study also suggests that discussion boards can be an effective addition to L2 instruction through helping teachers to overcome some of the limitations of conventional classroom instruction and provide students with opportunities to engage in interactive discussions in a written medium.

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CHAPTER ONE

INTRODUCTION

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INTRODUCTION

Advances in the field of networked computer-mediated communication (CMC) have provided opportunities as well as challenges to stakeholders in educational settings to deliver instruction in new communicative and digitised environments that can supplement face-to-face (f2f) instruction and help overcome any existing perils. Advocates of facilitating networked instructional technologies like discussion boards, for instance, argue that these technologies can help enrich language learning processes and transform L2 conventional teacher-centred pedagogical practices into more interactive student-centred ones (Patterson, 2001). That said, L2 instruction in Bahrain and more particularly at the tertiary level seems to be lagging behind when it comes to the enhancement of learning opportunities using instructional technologies while also suffering from a number of limitations.

This chapter starts with some background information about L2 instruction in Bahrain followed by a description of the problem area in the instructional milieus of the University of Bahrain (*UoB*). This is followed by the research aims and research questions. The last section presents the outline of the thesis.

1.1 BACKGROUND OF L2 INSTRUCTION IN BAHRAIN

The English language has an important status in Bahrain because of its unique role in the country's commercial and industrial development. Although it is formally considered a foreign language, English functions in many respects as a second language. The majority of industrial, financial and commercial organisations make extensive use of English for professional communication. English literacy and fluency is a key requirement for workplace recruitment and career development (Al Ansari, 1985).

While Arabic is the medium of instruction in all public vocational and institutional programmes, English is the second most important language in the curriculum. Ever since formal education was established in 1919, English language teaching has been carried out. Until very recently, English was the only second language compulsorily taught from the fourth grade to public school students on an average of five lessons a week. Ever since 2004, however, the Ministry of Education has introduced English as a main subject from the first grade in both public and private schools. Thus, students now take 12 years of English language instruction in the three cycles of the schooling system. However, this means that current university students descending from public schools have learnt English for nine years only.

At the University of Bahrain (*UoB*), the only government university, English is the main language of instruction in six of the eight colleges and English courses are compulsory at all colleges. Admission policies accept school graduates with a minimum of an average score of 70%. Students are also given placement tests in Arabic, English and Math to determine which colleges they can be admitted to in accordance with their preferences.

The delivery of university English language teaching programmes is the responsibility of two bodies: the Department of English Language and Literature (*DELL*) and the English Language Centre (*ELC*). *DELL* is one of the biggest academic departments in the College of Arts and serves more than 7500 students enrolled in the various programmes per academic semester. The Department offers bachelor and master degrees in English Language Studies in addition to degrees in French, German and Japanese as well as in American Studies. In addition, *DELL* offers ESP and service courses to students in all eight colleges. The English Language Centre (*ELC*) is responsible for designing and providing the Orientation English Programme to all freshmen and ESP courses to the College of Applied Studies.

1.2 DESCRIPTION OF THE PROBLEM AREA

Regardless of its status, English is one of the most problematic curricular subjects for Bahraini students. Statistics provided by the Ministry of Education and by various

schools have shown that a large proportion of students fail in English. Writing, in particular, seems to be the most complicated skill to master for the majority of Bahraini students. The 2002/2003 statistics on English writing proficiency provided by Bahrain's Ministry of Education revealed that 40.4% of general secondary students and more than 52% of commercial secondary students failed to master the writing skill (Al Jahromi, Al Wadi & Al Majdoob, 2003). Another local study conducted by Al Noor School's English Department established that more than 46% of its students failed in the writing diagnostic tests while less than 28% failed in the reading diagnostic tests and 7% in the listening tests. At the tertiary level, the 3rd Students' Annual Conference (January, 2006) organised by the Graduates Society and run by undergraduate students in Bahrain highlighted the problems university students face, joining other Bahraini researchers who claim that most L2 students in Bahrain "see writing as extremely difficult work, with no real reward at the end" (Sabooni, 1994: 17).

Generally speaking and based on my teaching experience of over 15 years, students' writing suffers at many levels: it usually lacks cohesion, coherence, organisation and proper language use. Their written products are often full of grammatical mistakes especially at the levels of tense and subject-verb agreement. Their lexical range is also limited as well as their written fluency measured by the number of words they produce per writing. Another feature of students' writing is the underuse of discourse markers, conjunction and subordination that help link their ideas in a coherent manner.

Another feature of L2 instruction at the *UoB* and at all basic education levels is the absence of sufficient speaking opportunities and activities in L2 courses. Even if these activities are facilitated, teachers often complain that students do not participate in oral in-class discussions for academic and cultural reasons discussed the following section.

1.2.1 POSSIBLE FACTORS BEHIND L2 LOW PROFICIENCY IN BAHRAIN

The fact that the English language standards of Bahraini secondary school leavers and university freshmen are "often well below the level required for most of their post-school higher education opportunities" (Abdul Majeed, 1995:15) and that writing seems

to be significantly challenging for these students can be attributed to the following factors:

i. Traditional Teacher-Centred Teaching Methodologies

Generally speaking, most L2 instruction seems to be teacher-centred and mostly based on traditional teaching methodologies that emphasise the role of teachers as the sole providers of knowledge and students as passive recipients who have no or limited control over their learning process. Curriculum design and choice of textbooks also do not seem to cater for students' academic needs or levels of competence.

Teacher-centred teaching methodologies conflict with the general objectives of the Ministry of Education's English Language Teaching programme (ELT) for both school and university levels. According to Al Raffai (1995), these objectives are to help students:

- *Acquire vocabulary, expressions and forms of the language,*
- *Recognise the relations between different language skills,*
- *Build an ability to listen to, speak, read and write the language easily in daily life,*
- *Use language to transmit knowledge, science, fine art and values of their native language,*
- *Improve and maximise their reading skill to be able to read books, fiction and journals,*
- *Produce a fine and complete piece of writing,*
- *Develop self-learning skills to be able to use different language resources and build up self-esteem,*
- *Acquire norms of collaborative work, research methods and problem solving techniques,*
- *Employ new technology in education in learning the language, and*
- *Appreciate the importance of English in communication between nations.*

As a school and university language instructor for more than 15 years, I have long observed that current ELT practices neglect at least the last four objectives mentioned

above. Instructional practices seldom engage students in communicative problem-solving activities or facilitate student-centred research or self-learning tasks.

In regards to writing, current pedagogical practices often entail memorisation of linguistic forms and corresponding rules of correct usage and emphasise correctedness over meaning and fluency. These practices are based on the traditional approaches which expect learners to master discrete structural items, and which consider writing as totally dependent on the study of grammar (Sabooni, 1994). According to Mubarak (2003), "The teaching of English and of writing in particular typically pays too much attention to the acquisition of grammar and vocabulary. Those who would like to go to colleges have to cram a huge number of grammatical terms and rules" (p.29). Sabooni (1994: 17) also mentions that writing is "merely relegated to an out-of-class activity and its product is judged solely on the basis of spelling and punctuation".

It is perhaps this obsession with accuracy that has played a major part in diminishing the level of writing proficiency at school and tertiary levels and undermined students' confidence in their writing proficiency. In a survey study of *Students' Attitudes towards English Language Learning and Curriculum* conducted by Al Jahromi *et al.* (2003) on secondary students' perceptions of writing, almost 62% of the low-achieving students expressed their inability to communicate their ideas openly and confidently in their traditional writing tasks.

Also, there seems to be a big gap between students' school writing level and what is expected of them at the university, where, for instance, they have to produce accurate, long and well-organised free-writing texts instead of following the writing models provided by their teachers (Sabooni, 1994). A number of workshops take place every year aiming at providing measures to help bridge this gap but no tangible empirical results have yet been reported.

ii. Limited Emphasis on Writing Process and Writing Mechanics

Although assessment depends heavily on writing as final exams allocate more grades to the writing questions than to questions assessing reading comprehension, language use

or listening, poor emphasis is placed on practising or explaining the writing process especially during school education. The evaluation criteria are often based on the final product, which is assessed on the accuracy rather than the fluency and communicative aspects of the written product (Abdul Majeed, 1995; Al Ansari, 1985). In a recent study conducted at the *UoB*, Yousif (2006) examined students' written texts and concluded that "the teacher's assessment of students' written texts ... showed a negligence of the communicative efficiency of the texts." (p. 40).

Planning, organising, drafting and re-drafting, as main writing mechanics, are rarely practised. It is often the case that students' submitted writings are the first and final products, and that teachers do not often ask their students to submit a number of drafts or expect them to correct their marked mistakes and re-submit their writings. Al Jahromi *et al.* (2003) reported that almost 70% of the students complained that teachers do not often request second drafts or ask them to re-edit their writings before or after submission. Bahraini L2 students are also reported to overlookimportant aspects of writing such as writing objectives, intended readers, *etc.* simply because they consider their written texts assessment tools (Yousif, 2006).

iii. Lack of Authenticity and Audience

Classroom tasks are often deficient in providing students with authentic audiences. Al Jahromi *et al.* (2003) found that many students did not feel committed towards producing efficient texts or extending their language abilities because their texts were not read by a real audience. The literature has long shown that the presence of audience often promotes greater skills such as discovering ideas, formulating goals, collecting information, solving problems, and revising and editing writing (Gaddis, Napierkowski, Guzman & Muth, 2000; Hirano, 1991; Hyland, 2003). To be more specific, an appreciation of audience and writing purpose often helps boost students' commitment towards the writing activity. Sabooni (1994) argues that any L2 student "needs to bear in mind the purpose of the writing and the audience for whom it is written ... If students know that what they are writing will actually be read by real people other than the teacher, people who care about the message not the medium, then writing often becomes easier" (p.46).

Unfortunately, L2 learners are often asked to write with a contrived purpose and reader. For instance, they write letters to their non-existing British friends or a report about their imaginary trip to London. These tasks can be very frustrating and can hinder students' language development and writing proficiency.

iv. Lack of Sufficient Exposure to L2 Input and Production of L2 Output

Another reason might be the lack of sufficient language exposure and production. First, students are not provided with opportunities for exposure to sufficient input whether by having extensive reading tasks or gaining access to peers' writing.

Added to that, Sabooni (1994) asserts that the current writing approach has the inherent shortcoming of not providing students with enough writing practice in the classroom. While the syllabi of writing courses emphasise the importance of frequently producing written output, students often complain about the scarcity of writing assignments and the inability to use the language constantly and productively. Most L2 tertiary instruction concentrates on equipping students with the grammatical and organisational structures necessary for successful writing but limit students to producing between five to six 120-word assignments per semester. This often results in limited use of the target language.

v. Anxiety in In-class Discussion and Peer Interaction

Another unfortunate feature of language learning classrooms is the discernible lack of in-class discussion and oral participation opportunities for students. Almost 50% of the students involved in a survey study mentioned that they do not actively participate in in-class discussions, which many deliberately avoid (Al Jahromi *et al.*, 2003). Similarly, Al Raffai (1995: 11) states that there is little evidence that current teaching practices focus on learners' needs and on "the active participation of learners to maximise their opportunities and experiences for using English".

Hence, students do not seem to engage in tasks that encourage them to express meaningful thoughts and personal views through writing using argumentative and other

higher-order thinking skills. Teachers do not always develop inventive techniques to enable language learners to voice their opinions and to discuss topics openly (Sabooni, 1994; Yousif, 2006). This often leads students to develop negative attitudes and anxiety towards the target language (Mubarak, 2003). Part of this anxiety is related to cultural and societal constraints on gender roles, which traditionally expect females to refrain from participating in face-to-face discussions in the presence of males or expressing their viewpoints publicly.

vi. Negligence in the Use of Interactive Instructional Technologies

Bahrain is considered one of the pioneer Arabian Gulf countries in the use of networked CMC in the Arabian Gulf. Bahrain Telecommunication Company (Batelco) estimates that Bahrain has the second highest rate of Internet penetration in the Arab World.

The use of networked CMC in pedagogical settings has been introduced in the form of some national educational projects. One of the ambitious projects is "*The King's Project for the Schools of Future*," which aims at transforming conventional classrooms into smart classrooms equipped with live learning video conferencing tools and connecting all schools with an e-learning platform. Most textbooks have been transformed into e-books enriched with reinforced animation, graphics and interactive exercises and activities. According to the Ministry of Education's official website, the main objectives of this project are:

> ..increasing opportunities for interactivity and communication in the learning environment, providing effective channels for encouraging students to exchange their opinions and viewpoints openly and freely, offering equal participation rates for all students regardless of the individual differences or personality problems that might hinder effective communication in traditional settings.

Another project is the *Bahrain e-Content Award,* organised by the Ministry of Industry and Commerce and Bahrain Internet Society and inspired by the World Summit Award (WSA). This award includes the *E-Learning Award* category which acknowledges

teachers' pedagogical efforts to deliver interactive online content to students at all levels.

These technological advances and projects have created new demands for higher education strategies and teaching methods. The *UoB* has been one of the leading academic institutions in this regard. In a newspaper interview in 2008, the President of the *UoB*, Dr. Ebrahim Janahi, explained that more than 250 traditionally-taught university modules have been transferred to online modules, delivering online instruction to around 13,000 students. The President added that the quality assurance of these modules was a key objective of the university reflected in the annual *E-Learning Conference* organised by the university's *E-Learning Centre*, which expects to provide all modules in the online mode in the next six years. The Centre's facilities include the provision of a range of e-Learning tools available on the virtual learning environment *WebCT* such as course delivery, email, chat rooms, and discussion boards. The Centre also provides technical support to online students and teachers.

That said, however, there seems to be very limited use of these facilities and tools that could possibly engage students in interactive course-related discussion and provide them with constant communication with peers and teachers. Online teachers rather use the learning platform to deliver course content and evaluation tools while communicative tools such as discussion boards and emails are often neglected.

E-Learning Centre's administrators provided snapshots of teachers' underuse of these tools. For instance, although ENGL 250 is an online writing course for the *UoB* students majoring in the English language and although one of the course objectives is to *"teach the craft of writing as a self-discovery process, in which student participation is of foremost significance,"* the instructor did not make any use of the discussion board or chat rooms to encourage more writing production through interactive discussions. As shown in Figure 1.2 below, there have been no interactions between the instructor and the students or even among the students themselves throughout the semester, which lasted 12 weeks. Instead, the instructor was more concerned with delivering the course content, assignments and structural rules rather than the facilitation of communication between students using the technologies available.

Figure 1.1: ENGL 250 Main Website

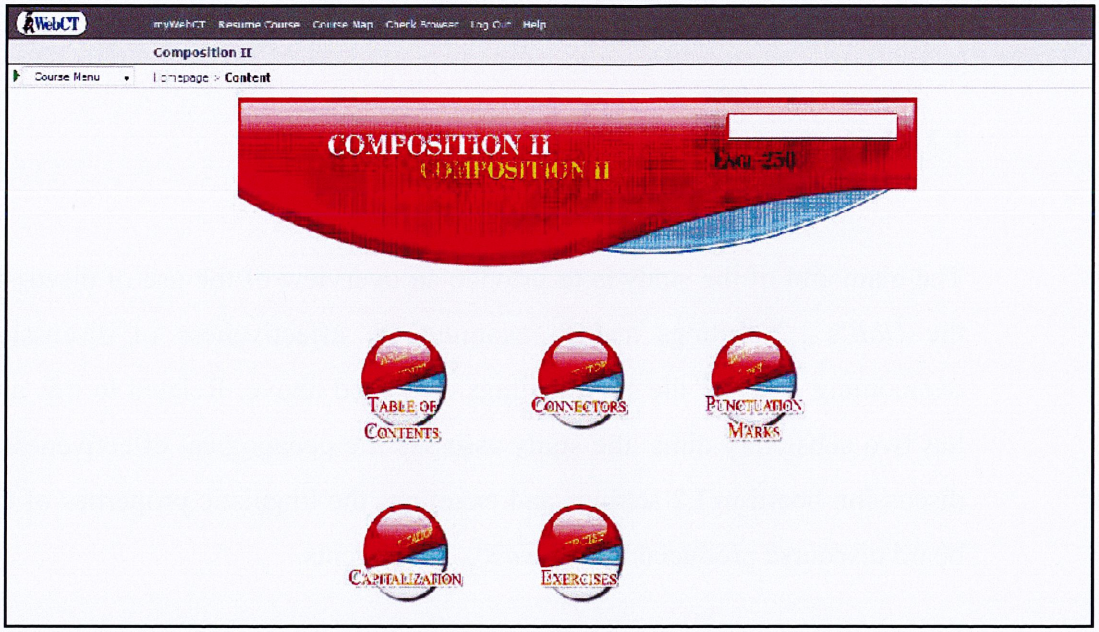
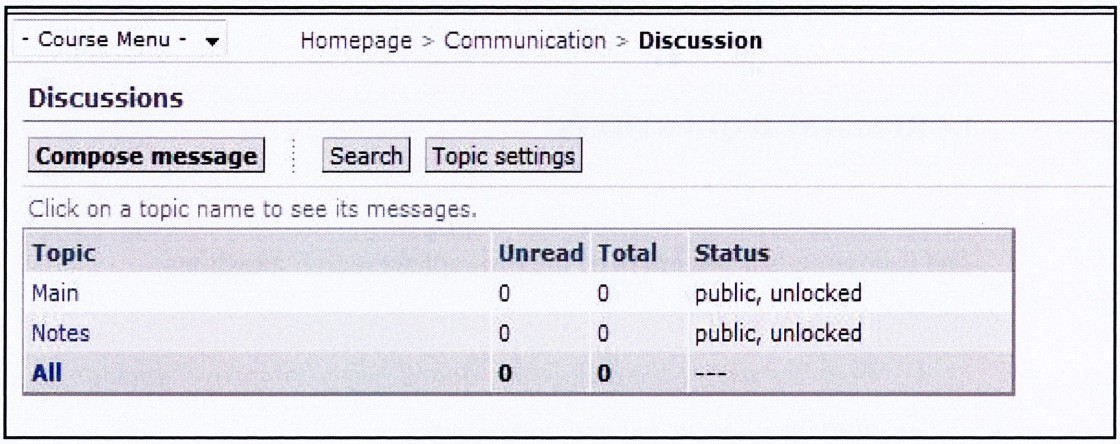


Figure 1.2: ENGL 250 Facilitation of Online Discussions



These figures, which indicate negligence in using interactive tools to encourage class discussion, seem to be typical of the majority of the online courses delivered on *WebCT* by the *UoB*'s teachers, as also reported by the *E-Learning Centre's* administrators.

At the same time, there seems to be a disagreement between researchers who advocate using different types of networked technologies and between practitioners who fear that these technologies might commoditise their instruction or negatively affect students' writing competence by using speech-like features or by code-switching/mixing between their L1 and L2 in their online written products (Rogers, 2006).

In sum, the aforementioned shortcomings of L2 instruction at the *UoB* serve as the rationale of this study and inspire its scope and aims.

1.3 RESEARCH AIMS

The main aim of the study is to provide an overview of the use of discussion boards in the *UoB*'s L2 settings and to examine the effectiveness of discussion boards in overcoming some of the shortcomings discussed above. Related to this aim, this study has two subsidiary aims: the study assesses the pedagogical effectiveness of using the discussion board in L2 settings and examines the linguistic properties of the discussion board discourse produced by the *UoB*'s L2 students.

It is part of the motivation of this study to give evidence, if any, of the pedagogical and linguistic efficacy of discussion boards in Bahraini L2 courses to encourage their wider use in the university.

1.4 RESEARCH QUESTIONS

The following is a statement of the principle research questions:

1. *Does the use of the discussion board help to improve students' writing in terms of fluency, accuracy and complexity?*

   Related to this main question, I also investigate the following sub-questions:

   a. *What levels of student participation are found in the discussion board and what variables affect their participation?*
   b. *What are the perceptions of the UoB's teachers and L2 students of the effectiveness of using discussion boards?*

2. *To what extent does student discussion board discourse resemble typical written or spoken language?*

Related to this question, I also investigate the frequency and purpose of possible code-switching and/or code-mixing between Arabic and English in the discussion boards.

The aim of the two main research questions is to provide a holistic account of what goes on in the English language learning settings whilst using the discussion board. Being an instructor and a linguist at the same time, I am concerned not only with pedagogical aspect of the effectiveness of using discussion boards but also with the linguistic features of the discourse exchanged and produced in the online settings. What this study wishes to provide through the investigation of these two questions is an overall understanding of the use of L2 in discussion boards from all dimensions that are of genuine concern to language instructors like the development of L2 learning experience and the linguistic quality of L2 learners' input and output.

1.5 OUTLINE OF THE THESIS

The thesis is divided into eight chapters:

The next chapter, Chapter Two, presents the literature review on the use of discussion boards in L2 settings. The chapter starts with an overview of types of networked computer-mediated communication (CMC) followed by a review of previous studies relevant to the pedagogical and linguistic aspects of the study. This chapter concludes with a brief critical review of the key studies directly relevant to the research aims.

Chapter Three, the research methodology, describes the research design, subjects, data collection techniques, and analytical framework.

The results section is divided into two parts. Part One, which consists of three chapters, examines the pedagogical effectiveness of discussion boards. Chapter Four presents the empirical findings of the quasi-experimental study on the effectiveness of using discussion boards on students' writing in terms of fluency, accuracy and complexity. Chapter Five examines students' online involvement and participation in the discussion board and presents a number of related factors. Chapter Six investigates the *UoB*'s

teachers' and students' perceptions of the effectiveness of using discussion boards in pedagogical settings.

Chapter Seven, the second part of the results, analyses the linguistic features of the online discourse found in the discussion board and investigates occurrences of code-switching and/or code-mixing among students in the online settings.

Finally, Chapter Eight summarises the findings of the study, presents its limitations, draws implications, and suggests areas for future research.

CHAPTER TWO

THE LITERATURE REVIEW

CHAPTER TWO

THE LITERATURE REVIEW

2.1. INTRODUCTION

As outlined in the research questions (*see* 1.4), this study aims to a) evaluate the pedagogical benefits of facilitating discussion boards in the *UoB*'s L2 writing settings and b) analyse the discourse of the discussions students engaged in. Although the second aim stands alone as a research question investigating the discoursal features of the discussions, I believe it contributes to the pedagogical implications expected to be drawn from the findings. Analysis of the discourse is expected to examine L2 teachers' traditional negative stereotyping of online writing as being fragmented, erroneous, and similar to speech.

In order to provide answers to the research questions and find this study's contribution to the existing body of literature, this chapter provides a holistic overview of studies examining the pedagogical *and* linguistic aspects of using discussion boards as an interactive computer-mediated communication (CMC) tool. This chapter is divided into three main sections: Section I provides an overview of studies examining the linguistic differences between the asynchronously-produced discourse, and speech and writing. Section II provides a review of previous studies examining the pedagogical benefits of asynchronous discussion. Section III aims at providing a synopsis of the key studies relevant to this study and showing the significance of our study by explaining its rationale and drawing comparisons.

Before outlining the previous studies, however, it is essential to provide some background information about CMC and instructional technologies in general and discussion boards in particular.

2.1.1. Computer-Mediated Communication (CMC)

Different researchers have used the term *computer-mediated communication (CMC)* differently. Hiltz and Turoff (1978) were the first to coin the term, confining its use to conferencing only (Murray, 2000). Herring (1996: 1) defined CMC as "communication that takes place between human beings via the instrumentality of computers." Murray (2000) argues that although Herring's definition is flexible enough to include all current kinds of online human communication, it is open-ended because it focuses on text-based online modes and disregards spoken modes such as online telephony and speech-recognition technologies. In response to criticism, Herring (2007) later modified this definition and stated that CMC is "text-based human-human interaction mediated by networked computers or mobile telephony" (p.1). That said, CMC is mostly considered text-based as communication exchanges are typed on a keyboard and read as produced texts. Warschauer (1995) expands the term to include online communication using email, Internet Relay Chat (IRC), discussion boards, chat rooms, listservs and the Web, as other researchers have done (Herring, 1996; Murray, 1988, 2000). These types are labelled 'mediated' because they function as tools of communication between people in cyberspace (Levy, 1997).

Two important variables of networked CMC are the synchronicity of participation and the means of message transmission (Herring, 2001). Synchronous communication takes place when people are connected to each other in real time while asynchronous communication is time-delayed and does not necessitate the online presence of the participants at the same time. These types are also called "*modes*", a term coined first by Murray (1988) developed later by Herring (2001) into the term "*socio-technical modes.*" The following section provides further explanation of these types.

2.1.2. Networked CMC Types

a) Synchronous CMC Types

According to the online OED, "*synchronous*" (from the Greek *syn-* meaning "with, together" and *–chronous* donating "a period of time") is an adjective describing actions

that are happening at the same time. Synchronous CMC takes place in real-time using one network, and its participants communicate and send immediate responses from remote locations in a manner similar to making a telephone call (Berge & Collins, 1993).

There are many kinds of synchronous communication such as chat programs, MUD, MOO, Instant Messaging (IM), videoconferencing and teleconferencing. Chat programs include commercial web-based chats such as Internet Relay Chat (IRC), academic web-based chats such as those available on the virtual learning environments like *WebCT*, *Blackboard* and *MOODLE*, and chat software such as ICQ (Lamy & Hampel, 2007). A MUD (*Multi-User Domain*) is a text-based "multi-player game that combines elements of role-playing games, hack and slash style computer games and social chat rooms" (Wikipedia). A MOO (*MUD Object-Oriented*) is a text-based online virtual reality system that consists of multiple virtual rooms with entrances and exits linking these rooms together (Lamy & Hampel, 2007). Instant Messaging (IM) facilitates instantaneous, private and brief communication between multiple online users. It is a system of intermediate synchronicity that blurs the boundary between synchronous and asynchronous communication allowing the participants to read the messages sent even while they were offline or away (Cherny, 1999; Herring, 2007). Examples of one-way-transmission IMs are *AOL Instant Messaging*, *MSN Messenger* and *Google Talk*. Two-way transmissions such as VAX"Phone" and UNIX"talk" are character-by-character IMs that enable the sender and the receiver to see the production process of the message keystroke-by-keystroke helping the receiver to respond simultaneously.

b) Asynchronous CMC Types

Merriam Webster Dictionary defines the term "*asynchronous*" as actions that are "not occurring at the same time." There are many tools of asynchronous communication such as email, newsgroups, mailing lists, discussion boards/forums and web-based conferencing systems (Cunningham & Andersson, 1999; Herring, 2001). While e-mail is considered a simple and cheap text-based type, other types are not as straightforward. Mailing/discussion lists are group discussions that use e-mail to convey news, information, announcements, *etc.* Listservs are discussion groups for people who

register their favourite discussion topics and join together using e-mail to exchange messages, copies of which are sent to all subscribers (Cunningham & Andersson, 1999; Kitoa & Kitoa, 1996). Similarly, newsgroups are bulletin boards through which conversations are usually reported in sequence so that everyone can read the 'thread' (i.e. all the contributions to a newsgroup or mailing list discussion on a single subject). A newsgroup is a repository for messages posted from many users at different locations. A single newsgroup is defined by Cunningham and Andersson (1999: 30) as being "one of thousands of open discussion forums on set topics in an area of the Internet known as USENET." Newsgroups are technically distinct from, but functionally similar to discussion boards.

The discussion board, which is the main focus of the study, is a web application for holding discussions and posting user-generated content. Discussion boards are also commonly referred to as web forums, message boards, discussion forums, *fora* (the Latin plural) or simply 'forums', a term used sometimes to refer to the entire community or to a specific sub-forum dealing with a distinct topic. Messages within these sub-forums are displayed either in chronological order or as threaded discussions.

One significant difference between discussion boards and mailing lists is that the latter automatically deliver new messages to the subscriber, while discussion boards require members to visit the website and check for new posts. Likewise, discussion boards differ from chat rooms and instant messaging in that their participants do not have to be online simultaneously to receive or send messages. Messages posted to a board are publicly available for some time, unlike chat rooms that require frequent real-time activity (Cunningham & Andersson, 1999).

Networked CMC, whether synchronous or asynchronous, has encouraged researchers to study the discourse exchanged between online interlocutors. This discourse is reviewed in the section below.

2.1.3 Computer-Mediated Discourse

Under the broad heading of CMC, the new acronym *CMD* has been used by a number of researchers to refer to computer-mediated discourse and the use of discourse analysis in computer-mediated settings. Herring (1996, 2001 & 2007) uses this term to refer to "the communication produced when human beings interact with one another by transmitting messages via networked computers" (Herring, 2001: 612). Researchers' interest in analysing CMD goes back to the early 1980s, when a number of references to CMD were made. An article by the linguist Naomi Baron (1984) described the effects of CMC in changing discourse and a year later, Murray (1988) investigated elements of CMD in instant messages. However, it was the work of Ferrera, Bruner and Whittemore (1991) on *"Interactive written discourse as an emergent register"* and more particularly their experimental study of *interactive written discourse* that significantly attracted attention to CMD (Herring, 2001: 613). As a whole, CMD research in the late 1990s attempted to counter the negative stereotypes of CMD as being fragmented, erroneous and impersonal.

Ferrera *et al.*'s (1991) description of CMD as an 'emergent register' was later elaborated on by Crystal (2001), who describes online language as "*Netspeak*" in a very broad sense. Cherny (1999) studied the communicative characteristics of individual CMD modes while other studies followed Murray's (1988) approach in having pre-defined sets of categories to classify CMD data (Collot & Belmore, 1996; Rice, 1997). Herring (2007), however, criticizes most previous studies for the lack of proper classification of their main objective, and proposes a faceted classification scheme defined by variables of *medium* and *situation*. Herring was also the first to coin the acronym CMDA to refer to *computer-mediated discourse analysis*. By definition, CMDA "adapts methods from the study of spoken and written discourse to computer-mediated communication data" (Herring, 2007: 4).

The following section provides an overview of studies analysing online discourse and examining its relationship with features of speech and writing.

2.2. SECTION I: THE LINGUISTIC FEATURES OF ONLINE DISCOURSE

This first section of the literature review outlines the theoretical background and studies examining the similarities and differences between the discourse exchanged in asynchronous communication tools, and speech and writing. However, it is important first to understand the relationship between these two modes and identify the basic features that distinguish each, as outlined by key researchers in this field.

2.2.1. RELATIONSHIP BETWEEN SPEECH AND WRITING

The relationship between speech and writing is a controversial issue among linguists. Both have often been reported to have distinctive linguistic systems, communicative acts and cognitive processes (Kroll, 1981). Halliday (1989) considers writing as "an alternative form of expression to speech" (p.29) and exemplifies on features of speech that are not present in writing such as rhythm, intonation, degrees of loudness, variation in voice quality, pausing and phrasing.

However, some linguists argue that there are overstated differences between both modes. Street (1995) calls these differences the 'great-divide,' critisised by Hyland (2002) to have neglected the diversity in each mode and the many similarities between them.

That said, the following sections explain the main differences and similarities between both modes in more details.

a. A Dichotomy between Speech and Writing

Carter and McCarthy (2006) state that although speech and writing have similar lexical and syntactic structures, there are some structures which are more frequent in one mode rather than the other. Garton and Pratt (1998) state that while speech is temporal, ephemeral and aural, writing is spatial, durable and visual. Another difference is that speech is sociable while writing is solidarity despite the consideration of a readership

during the writing process. Yet writing has its own purpose, often "leaves a permanent trace and permits re-vision and on-going meta-analysis (Kantor & Rubin, 1981: 61). Added to that, although the emergence of word processors has diminished the time consumed in writing, speech remains much quicker. Halliday (1978) also draws a distinction in the notion of function and claims that while speech has an interpersonal function, writing has an ideational one.

Also, while speech is often perceived as concrete, fragmented, less planned, context-dependent, containing more hesitations, interruptions, self-correctness and relying on textual support of gestures and other paralinguistic features (Halliday, 1989), writing is abstract, complex, premeditated, context-free, and structurally elaborated in the form of monologue (Herring, 2007; Hyland, 2002; Kantor & Rubin, 1981). According to Stubbs (1996), writing is better described than speech and is often characterized as being standard, formal, edited and non-interactive while speech is often stereotyped as being casual, spontaneous and interactive. Garton and Pratt (1998), however, reject stereotyping speech as being less formal than writing, arguing that speech is "far more diverse and volatile than the written language, and new words and new grammatical constructions usually have their origins in spoken language" (p.5).

Chafe (1982) provides a list of writing-related syntactic devices such as the use of single adjectival modifiers derived from a verb's present or past tense to elaborate on a thought or an idea. This is done in speech by expanding and modifying the idea, sometimes using structures which might be "*sloppy* or wrong when the written language is considered" (Garton & Pratt, 1998: 5). A more detailed syntactic description of both modes was provided by Schafer (1981) who quotes O'Donnell (1974) stating that "writing has longer T-Units... than speech, more T-Units containing dependent clauses and more non-finite verbals, passive constructions, auxiliaries and attributive adjectives" (p.12). Hyland (2002) adds that writing has longer sentences with more subordination.

Regarding the lexical complexity level, speech exhibits more variation at all levels except at the lexical aspect whereas writing has more elaborated lexis since it is often densely packed with information (Halliday, 1985). Lexical complexity, often calculated using either the type/token ratio (lexical variation) or the ratio of lexical words to

grammatical words (lexical density) was first studied by Ure (1971) and then later developed by Halliday (Yates, 1996). Lexical density in particular is often expected to be higher in individual written texts based on the fact that written exchanges are shorter, less repetitive and often redrafted. Hence, writing has more unpredictable lexical words whereas speech has more predictable grammatical words (Stubbs, 1996).

A number of linguists, however, criticise the dichotomy between speech and writing because it decontexualises language use (Hyland, 2002; Street, 1995). The following section looks at the arguments supporting an analogous relationship between both modes.

b. Speech-Writing Continuum

The assumption that there are no clear-cut or absolute differences between both modes was first suggested by Biber (1988) and later maintained by other linguists (Biber *et al.*, 1999; Crystal, 2001; Davis & Brewer, 1997; Fox, 1987; Herring, 2007; Hyland, 2002; Kroll, 1981; Shaw & Liu, 1998). Carter and McCarthy (2006) reject the idea of confining features of spoken language to speech only and consider it a mistake. According to Biber (1988), there are several dimensions of variation, and particular types of speech and writing are more or less similar with respect to each dimension" (p.199). Kroll (1981) states that mature communicators often "talk 'writing … and write 'talking'" (p.53). Kroll also quotes Rubin (1975: 219), who inaccurately refers to writing as "simply speech *written down.*"

The different prosodic, grammatical and lexical differences between speech and writing are not definite, as they differ from one genre to another. This notion was clearly found in Biber *et al.*'s (1999) corpus studies leading to the production of *Longman Grammar of Spoken and Written English*. Biber (1988:36-37) mentions that:

> There is no linguistic or situational characterisation of speech and writing that is true of all spoken and written genres. On the one hand, some spoken and written genres are very similar to one another. On

> the other hand, some spoken genres are quite different from one another, as are some written genres. The relations among these genres are systematic, but must be specified in the multi-dimensional space.

It is often the case that some spoken genres are written to be produced orally in planned and elaborated manners as in lectures, speeches and songs, while certain written genres such as newspaper advertisements often contain elements more likely to be found in daily conversations (Hyland, 2002). Biber (1988) maintains that the two modes of communication overlap except in few cases as in the increased use of *2nd* person pronouns, present tense and *that*-deletion in speech although these features can also be found in personal letters and fictional narratives. Also, the use of *that*-clauses, for instance, is mostly associated with writing but can be equally found in conversations.

Hyland (2002) claims that after examining varied genres, "we find actual instances of writing to contain a mix of oral and written features and that the two modes overlap and coexist in very complex patterns" (p.50). Hyland then (p.53) concludes that:

> Spoken and written channels do not divide along clear lines of 'involvement', 'formality', or 'complexity'; nor do they display exclusive distributions of particular features. These characteristics are differences in particular *uses* of these modes.

Thus, Biber (1982) proposed that all discourse types should not be classified but instead be placed upon multiple continua (Davis & Brewer, 1997; Gains, 1999; Herring, 2007; Yates, 1996). In L2 settings in particular, the differences are more vivid. Kroll (1981) points out that inexperienced writers' compositions often have features of speech such as the repetitive use of the conjunction *and*, and the inner speech found in expressive writing (Kantor & Rubin, 1981).

Hence, speech and writing may be quite similar and interrelated and could be used for many parallel purposes. Fox (1987) states that the association of certain syntactic structures with a mode rather than the other cannot be absolute because it depends on "the length of the text, its level of formality, its genre, the social class of its creator,

etc." (p.137). That said, there are some basic features that are characteristic of speech and writing which researchers have examined in the online discourse to find its relationship with both modes and to place it on a continuum, as suggested by Biber (1982).

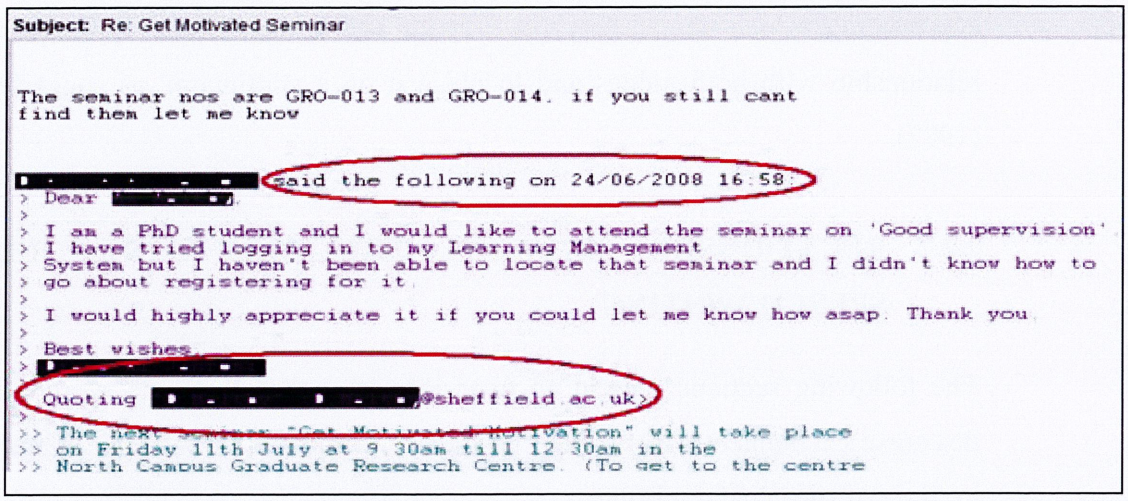
2.2.2. RELATIONSHIP BETWEEN THE ONLINE DISCOURSE AND SPEECH/WRITING

The following sections present an overview of studies that have analysed the online discourse exchanged in networked CMC and compared its linguistic features and uses to those of speech and writing.

a. Is Online Discourse Similar to Speech?

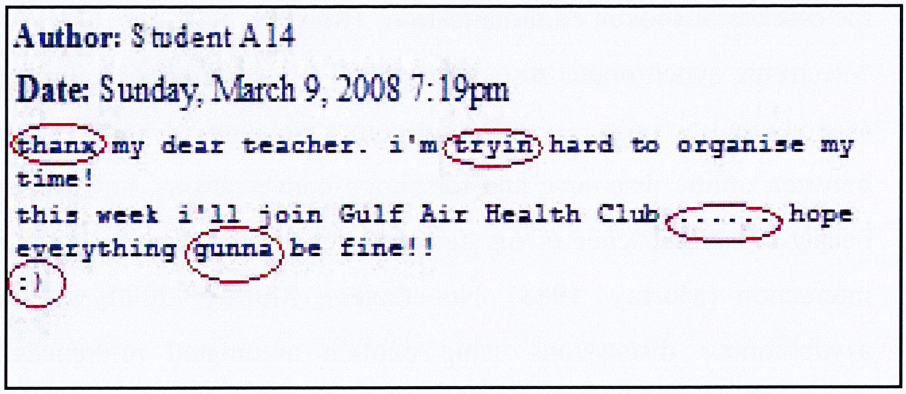
There are many areas of similarity between online discourse and speech. They share communicative features such as "repetition, direct address, disfluencies, and markers of personal involvement" (Davis & Brewer, 1997: 3). The discourse in synchronous CMC types is argued to resemble telephone conversations where communication takes place with no actual physical presence (Berge & Collins, 1993). While people respond quickly and think on their feet to participate in fast exchanges, the speed demanded in synchronous communication using IRC or Instant Messaging (IM) "attempts to capture the essence of spoken communication" (Randall, 2002: 2). Ortega (1997) mentions that "electronic synchronous discussion remains a collaborative, interactive, and time- and space-bound activity, as most oral communication is" (p.91). The assumed similarity between online discourse and telephone conversations, however, is not a total truism because of the absence of the human voice and the ease of withdrawal from an online interaction (Murray, 1988). Nonetheless, Murray (2000) argues that signalling in asynchronous discussions using explicit automated references to the previously-discussed topic (*see* Figure 2.1 below) is similar to the use of referents in speech, although it can sometimes be ambiguous and overlapping.

Figure 2.1: Signalling in Networked CMC *(from my personal emails)*



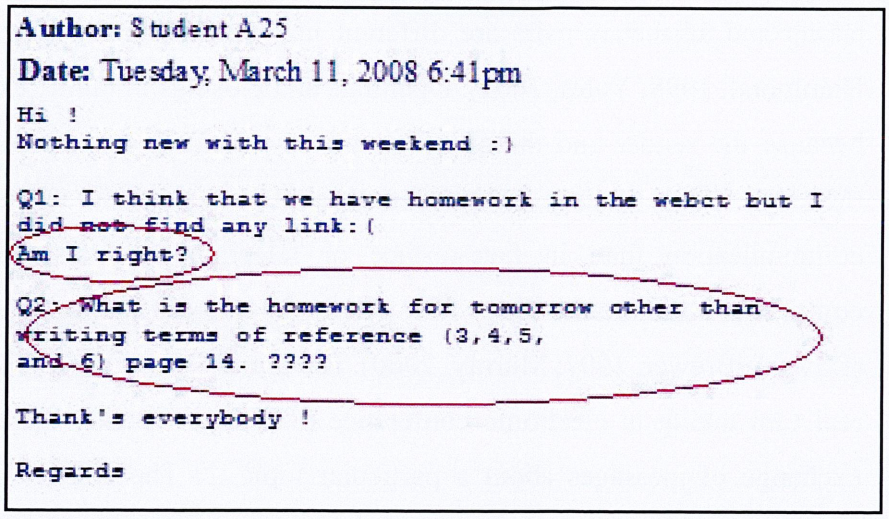
That said, online interlocutors often refer to their online activity as a 'conversation,' even if asynchronous, possibly because online communication is interactive and informal like speech. Thus, online writing especially in synchronous types is claimed to neglect formal writing features such as grammar and punctuation and place more emphasis on slang and abbreviations. The use of non-linguistic signs such as emoticons, abbreviations and acronyms is also considered to be the user's speech-simulation technique, as shown in the extract below provided by a *UoB* teacher supporting the claim that the use of discussion boards negatively affects students' English writing.

Figure 2.2: Use of Speech-Like Features in Online Communication



A number of studies have also examined how the flow of online discourse may be akin to speech in the use of direct questions or tag questions at the end of online comments for feedback purposes (Kelm, 1992; Murray, 1988; Ortega, 1997), as shown in the following extract provided by the previously-mentioned *UoB* teacher.

Figure 2.3: Use of Questions and Question-Tags in Online Communication



Author: Student A25

Date: Tuesday, March 11, 2008 6:41pm

Hi !
Nothing new with this weekend :)

Q1: I think that we have homework in the webct but I did not find any link:(
Am I right?

Q2: What is the homework for tomorrow other than writing terms of reference (3,4,5, and 6) page 14. ????

Thank's everybody !

Regards

Other syntactic similarities between online discourse and speech include little subordination, more active declaration, and incomplete sentences (Abdullah, 1998), as evident in the above-shown examples. More studies have found that interlocutors in online communication use a higher proportion of simple sentences similar to those of speech in comparison to complex ones found in writing (Chun, 1994; Kern, 1995b).

Another possible similarity is the interactional incoherence found in both speech and online discourse. Herring (1999) asserts that online discourse can be "simultaneously incoherent" and that it is in this respect "both 'less' and 'more' than spoken language…it is both dysfunctionally and advantageously incoherent" (p.2). However, I consider this assertion an overstatement that does not apply to all types of networked CMC or to all genres, and a motive to investigate the discourse further.

That said, there is some evidence in the literature to support the claim that online discourse is rather different from speech in many aspects because of the absence of a number of primary speech properties (Baron, 2000; Crystal, 2001; Davis & Brewer, 1997). Crystal (2001) estimates that the features that online discourse in synchronous and asynchronous communication or what he calls '*Netspeak'* shares with speech are "very limited" although his disassociation of online discourse from speech contradicts with the acronym he uses to refer to online discourse as being the way people *speak* on the *net*.

In general, the conventional speech norms such as openings, closing, greetings, turn-taking and adjacency pairs are different in online discourse (Davis & Brewer, 1997; Hammond, 1998; Yates, 2001). Openings and closings in online exchanges are optional because the sender and the recipient are automatically identified by the system used (Murray, 1988), while overlaps in turn-taking are more frequent in text-based online communication than in face-to-face or telephone conversations, as questions or complaints are not necessarily followed by answers or apologies in online discussions (Davis & Brewer, 1997; Murray, 2000). Davis and Brewer (1997) state that "There is no real turn taking in electronic conference discourse. Instead, there is an asynchronous exchange of messages about a particular topic ... The contact is not with the other students, but with the texts that the students have left behind" (p.161). Also, Sorensen (1996) further asserts that asynchronous communication provides the interlocutor with more access to the floor than conversational communication. In sum, these differences seem to suggest that online discourse has more writing-like features than speech-like ones, which are discussed in the following section.

b. Is Online Discourse Similar to Writing?

A number of researchers argue for a similarity between online discourse and writing (Chun, 1994; Harasim, 1990; Kaye, 1989; Kern, 1995b; Randall, 2002; Spitzer, 1986), simply because online discourse is largely a text-based interaction and online behaviour is basically "doing writing" (Yates, 2001: 101). Online discourse also exhibits a number of writing-like features such as the long substantial turns (Warschauer, 1996a) as opposed to the production of short messages highly characteristic of speech (Chun, 1994). Asynchronous messages in particular are perceived as notes since they are "longer than a comment, shorter than an essay" (Davis & Brewer, 1997: 5). Although some researchers might criticise online discourse for the lack of signalling in communication, Murray (2000) disputes such a criticism and asserts that signalling exists in online communication by "repeating the topic in the subject line or using the automatic reply function ... is similar to writing *Your Ref: Letter dated*" (p.404), as shown in Figure 2.1 above.

Another property of writing more associated with the discourse in asynchronous discussion is the permanence of posts, which remain for as long as the discussion board exists. Hammond (1998) supports this point and argues that asynchronous discourse is more an act of writing than speaking because of its lexical form, intended audience and permanence of texts. In other words, online writers in asynchronous settings often combine multiple tools and meta-cognitive skills to bring their texts to the satisfaction of their broader target audience than that in traditional settings. Awareness of the intended readers (e.g. their peers and instructors) of the online texts and matching the content to their possible feedback is similar to the processes of writing (Herring, 1996).

However, online discourse exhibits a number of properties that are absent in traditional writing. First of all, interactivity among participants is an important characteristic of online communication tools such as discussion boards and chat rooms. Hammond (1998) argues that "electronic discussion is more interactive than any other forms of writing," (p.338). It is important here, however, to provide an explanation of what this study considers as interactivity since it is a multifaceted concept and can carry different implications and hence, suggest different definitions. This study follows the definitions used in a number of studies that also use the terms 'interactivity' and 'interaction' interchangeably. Muirhead and Juwah (2004:11) state that interactivity "involves participation by the learner in online communication with other learners and with their instructors" and add that it is "mediated by response or feedback and interfaced by technology" (p.12). Hence, interactivity is not a characteristic of the medium but of the participants, as also argued by Schumann, Artis and Rivera (2001), who explain that interactivity depends on the participant's choice to interact. Rafaeli and Sudweeks (1997) support this point and further assert that interactivity is not just a condition but a continuum and a variable. They affirm that interactivity is "the condition of communication in which simultaneous and continuous exchanges occur, and these exchanges carry a social, binding force." They add that it refers to "the extent to which messages in a sequence relate to each other, and especially the extent to which later messages recount the relatedness of earlier messages" (p.4). A more thorough discussion of interactivity and its types and taxonomies is presented in Section 2.3.3.b below.

Another characteristic of online communication is the absence of impersonality and objectivity often exhibited in traditional writing by avoiding the use of *1st* and *2nd* person pronouns. Also, the fact that online participants shift their writing styles or accommodate them to their peers' writing styles brings online discourse closer to speech than writing as it is common for conversants to adopt their addressees' speaking styles for different social purposes.

Hence, it seems that there is a discrepancy between online discourse on one hand and writing and speech on the other hand suggesting that online discourse is not a variety of speech or writing. Thus, it can be assumed that it is either a hybrid of both modes or a totally distinct mode of communication. The following section addresses studies that have examined both assumptions in details.

c. Is Online Discourse a Hybrid of Speech and Writing?

Online discourse is considered by some linguists to be a marriage between the conventions of writing and speech and is recognised for narrowing the gap between the two modes (Berge & Collins, 1993). Hence, online writers are often described as users who are "speaking with their fingers" (Randall, 2002: 2) while online written interactions are often described as "written talk" (Tornow, 1997: 1) or as "writing that stands in place of voices" (Davis & Brewer, 1997: 2).

Technological advances have had a great impact on narrowing the assumed gap between speech and writing. According to Hyland (2002), "technological and social changes further complicate this picture, with new discourse forms ... blurring old divisions" (p.52). Technology has allowed for a switch in the traditionally-observed distinction between writing as an object and speech as an event. Simpson (2003: 54) refers to Halliday's work on the notions of objects and events and asserts that "the event of speech can become the object, through recording. And writing, objectified by print, can become an event, through text based SCMC," (i.e. synchronous computer-mediated communication).

According to Montero, Watts and García-Carbonell (2007), online interactive discourse is an example of the gradual change from formal to informal language. Payne (1981) also asserts that the exchange of ideas becomes better once writing is closer to conversation. This concept of blurred boundaries between spoken and written language in online settings can be associated with Fairclough's (1995) notion of discourse informalisation and technologisation, which maintains that modern practices of language includes a blend of "formal and informal styles, technical and non-technical vocabularies, markers of authority and familiarity, more typically written and more typically spoken syntactic forms" (p.79).

This mixture is supported in a number of studies. In Hammond's (1998) study, for example, many participants felt that their online discourse was "half-way between writing and speech as it carries some of the spontaneity of speech with the coherence and permanence of text" (p.338). The use of a mixture of spoken and written properties was also evident in Rice's (1997) study which examined 200 samples of emails gathered from four business organisations. Collot and Belmore (1996) also found features of both the spoken and written language in their analysis of online threads in a discussion board. A larger corpus-based study of computer conferencing using *CoSy* System carried out by Yates (1996) to compare spoken, written and online discourse at the British Open University found that there were some textual features of online discourse that were more likely to be found in writing (e.g. the lexical density) in addition to some speech-related features (e.g. the use of the first and second personal pronouns). Few years later, Gains (1999) reached the same conclusion after analyzing 116 emails, 62 of which were exchanged within an insurance company and 54 of which were exchanged within some British universities. His analysis showed that the insurance company's employees used standard written business English while the academic data had obvious conversational features.

The question that naturally arises here is how to measure the hybridity level and how close a particular online communication type is to speech and writing. One way of answering this question is by assessing the synchronicity of online communication (Herring, 2007; Yates, 1996). In other words, if online communication is asynchronous, it is more likely to be associated with the written discourse while synchronous interactions are often considered to be similar to speech. That is why, for instance,

synchronously-produced discourse is often labelled as 'written conversation' or 'simulated speech' (Werry, 1996).

Another criterion for determining the choice of mode for every online communication type is the individual preferences of the language users which depend on certain contextual aspects such as space, audience characteristics and settings. For example, thanking a colleague can be done electronically, face-to-face, by telephone or by informally sending a thank-you note. The users can also easily and simultaneously shift from one mode to another during the same speech event (Murray, 2000; Baron, 1998). Yates and Orlikowski (1993) argue that what influences the blend of linguistic and textual characteristics was the context of interaction, a concept earlier stressed by Murray (1988) and Simpson (2003).

Many recent studies, however, counter-argue that online discourse is a totally distinct mode of communication or a new register. The following section reviews these arguments in more depth.

d. Is Online Discourse a Distinct Language Mode?

Another school of thought suggests, from a linguistic point of view, that online discourse is inherently different from writing and speech (Chun, 1994; Ortega, 1997; Sorensen, 1996; Yates, 1996; Zoran, 2006). For instance, although Crystal (2001) first argues that online discourse "has far more properties linking it to writing than to speech," he later asserts that online discourse "is identical to neither speech nor writing, but selectively and adaptively displays properties of both" (p.47). Collot and Belmore (1996) make similar claims with particular reference to asynchronous discourse and maintain they are "neither 'spoken' nor 'written' in the conventional sense of these words ... it seems reasonable to assume that it embodies a distinctive set of linguistic features" (pp.14-15). Davis and Brewer (1997) also state that the asynchronous discourse they analysed in their study was neither similar to speech nor writing but "more like a multiparty conversation among strangers who are becoming acquaintances" (p.161).

Yates and Orlikowski (1993) identified features of speech (e.g. informality) as well as features of writing (e.g. textual formatting) in their analysis of 1,353 online messages exchanged between 1981 and 1984, but also found features unique to the online discourse (e.g. graphic humour). Some other researchers also agree that online written discourse is fundamentally different from speech (Anderson, 2008; Feenberg, 1999; Rogers, 2006). For instance, Feenberg claims that it is "not a poor substitute for physical presence and speech, but another fundamental medium of expression with its own properties and powers" (p.435). In particular, online written discourse is characterised by the "absence of oral interaction constraints such as fear to interrupt or of being interrupted, need to manage the floor and the transfer of speakership, and need for interlocutors to co-orient to the production of sequentially relevant discourse" (Ortega, 1997: 84). An added distinctive feature that inherently distinguishes online discourse from speech is the freedom from the constraints of attending to and monitoring one's pronunciation especially in L2 contexts. Another important characteristic feature is the lack of adjacency between turns in addition to the loss of chronological sequence of information in synchronously-produced discourse in particular (Ortega, 1997).

The main characteristics of online discourse were also investigated by Cherny (1999) in her study of the MUD register and online discourse was found to have features of verb creation, contractions, deletions and reproductions of words. In reference to Yates' (1996) study mentioned earlier, the use of modal auxiliaries was much higher in the online discourse than in speech or writing.

The discussion over the dissimilarity between online discourse and speech or writing has led to occasionally considering online discourse as bad language. Media and some educationists often blame online communication "for a perceived 'dumbing-down' of language," considering online discourse a decline in English language standards and a corruption of the typographic mind as well due to the increased punctuation and spelling errors especially in synchronous communication (Simpson, 2003: 54). That said, the above-mentioned report basically investigated only the grammatical aspect of online discourse and neglected the communicative aspect of writing. It also found that online low-achievers produced better writing than their counterparts in the face-to-face classroom.

Simpson (2003) mentions that technology in general ought to be credited for the writing-speech blend and for the emergence of novel forms of language such as online discourse. The traditional view of online discourse as frivolous and secondary has been undermined by the emergence of more sophisticated uses of online discourse in the fields of education, e-commerce, law and service provision. Most English academic writing (EAP) courses recognise the online written product's as means of student assessment (Matsuda, 2003).

2.2.3. CONCLUDING REMARKS OF SECTION I

Writing and speech seem to continue to merge in online contexts resulting in what Randall (2002: 43) describes as:

> a language that effectively and creatively combines the characteristics and the technologies of both, and that brings a new and welcome means of communication into our lives ... Online culture has bred a new language that allows for greater creativity and expression.

In this regard, online discourse can be considered a new register. Baron (2000), referred to this 'new register' as early as 1984. Shaw and Liu (1998: 247) suggest that there is a tendency for non-native speakers of English to "write in too 'spoken' a register, even if they speak in a register which is too 'written'". Online discourse exhibits features of simplified registers often associated with speech and writing and characterized by "short sentences, special lexicons, and feedback devices" (Murray, 2000: 401) in addition to the neglect of articles, pronouns and copula and the extensive use of abbreviations. In this regard, Murray also considers this discourse a simplified register based on the extensive use of abbreviations, simplified syntax, surface error acceptance, use of symbols and emoticons to express emotions and the use of formulaic phrases used to display actions in chat rooms (e.g. *John is typing now, She is looking around the room, etc.*).

Another reasons for the classification of online discourse as an 'emergent register' or a 'third medium' (Baron, 2000; Crystal, 2001; Davis & Brewer, 1997) is the fact that

online texts "transcend the traditional limitations on textual dissemination; and have permeable boundaries" in the spoken and written properties it exhibits (Crystal, 2001: 48). In this sense, Carter and McCarthy (2006) predicted that new modes such as online discourse "[will] continue to create new forms of spoken English in writing" (p.240).

In summary, the overall discussion suggests that there is no total dichotomy between speech and writing in online settings. Online written discourse is thus more likely a hybrid of both modes resulting in a new distinctive mode combining features of both modes. With this conclusion in mind, it is still necessary to investigate the truism of this concept in L2 settings with particular reference to Arab L2 learners. What this study partially attempts to explore is whether asynchronously-produced discourse is more akin to speech or writing, a hybrid of both, or a register with its own properties. This concept is discussed in Chapter Seven in light of the quantitative analysis of the discoursal features used by the *UoB*'s L2 learners in the discussion board.

2.3. SECTION II: PREVIOUS STUDIES ON THE PEDAGOGICAL USE OF DISCUSSION BOARDS

This section sheds light on the literature that has examined the pedagogical effectiveness of using discussion boards and provided some theoretical and empirical basis to the first main research question concerning the possible pedagogical effectiveness of discussion boards on L2 writing development.

Ever since the inception of CMC in education, many researchers have examined the pedagogical effectiveness of different technological tools like discussion boards. The following sections provide an overview of the debate over the pedagogical effects of these tools. The first part reviews networked CMC and presents the studies examining the possible advantages and disadvantages of using asynchronous discussion in L2 writing settings in comparison to in-class and/or synchronous discussion. This is followed by an overview of L2 writing development approaches and theories and the variables that might influence this development in asynchronous discussions. I believe at this stage that conflicting findings of studies presented below can be mostly attributed

to the varied objectives, size of participants, methods of research and analysis techniques.Part III cites the main studies that have influenced this study followed by a presentation of its significance and contribution to the existing body of literature.

2.3.1. History of Using Networked CMC in L2 Pedagogical Settings

Over the last five decades, The use of networked CMC in L2 settings has gone through different phases from the use of drill-and-practice software to a much more intensive use of word-processing programs to ultimately using networked communication tools since the early 1990s, a period signifying the emergence of *hypertext*, a term first coined by Ted Nelson in 1965 (Ortega, 1997). Lamy and Hampel (2007) offer a chronological analysis of using networked CMC tools in L2 settings. They explain that these tools were notably used in L2 instruction in the period between 1994 and 2002 with effective outcomes reported. Chatting was used from 1996 while collaborative projects were common by 1999. These technological breakthroughs have had significant influence on L2 pedagogical practices resulting in increased interest in the field of *computer-assisted language learning* (CALL).

Although CALL was introduced in the 1950s (Beatty, 2003), it was not widely employed by language instructors until the 1960s. The first phase of CALL was influenced by the *behaviouristic* drill-and-practice approach to learning and by the prevailing empiricist theory in language instruction in the 1960s. This theory was inspired by work on *Verbal Behaviour* examining stimulus, response, and reinforcement. The use of technology was merely based on the development of certain L2 teaching software such as *PLATO* and *TICC IT* based on the model of the *computer as tutor* (Beatty, 2003).

The late 1970s, however, witnessed the introduction of microcomputers and the inception of the new *humanistic* language learning approach, which considers the individual needs and emotions of the learners. This approach eventually brought about the *Communicative Language Teaching* (CLT) approach as a reaction to the *behavioural* "pattern-practice" approach (Levy, 1997). During this phase, Krashen

(1982) proposed the *Input Hypothesis* arguing that learners utilise comprehensible input to infer rules (Kitao & Kitao, 1996). Krashen states that L2 learners only acquire language when exposed to comprehensible input, although other researchers criticise the significance he placed on input alone (Patterson, 2001). During this phase a number of programs were developed, which contained the elements of drill and practice, control, student choice, and interaction (Warschauer, 1996b).

Later developments emphasised the concepts of the *computer as stimulus*, encouraging students to write, discuss and think critically, and *the computer as tool*, encouraging students to understand or use language in programs such as word processing and desk-top publishing. Correspondingly, a number of books and specialised journals such as *CALICO* were published and some teacher-authoring software such as *Hypercard*, *Intermedia*, *Guide* and *Storyboard* were introduced.

Although *communicative* CALL had many advantages over *behavioural* CALL, Warschauer (1996b) states that it made marginal contributions to the L2 teaching and learning process. That said, technological advances during the 1980s and the emergence of multimedia resources led to the emergence of *integrative* CALL, stressing the authentication of the learning environment, integration of all language skills, and the provision of students' control over their content-focused learning process (Beatty, 2003; Warschauer, 1996b).

The inception of the Internet in the early 1990s led to the creation of the acronym *IALL* to refer to *Internet-assisted language learning* (Warschauer, 1996b), although this acronym is not widely used. In general, the study of CALL/IALL increased interest in studying the possible influence of these types on L2 learning process.

Early studies in using discussion boards in particular were mostly experimental with quantitative measures used but did not provide very reliable findings because participants were placed in isolated computer labs, so variables such as linguistic output or learning gains were not evaluated in naturally-occurring settings (Althaus, 1997; Roger, 2006). Later work was more descriptive than reflective. Researchers continued to explore the potential cognitive benefits of discussion boards in collaborative settings.

During the last decade, investigations of constructivism, interactivity, higher-order thinking skills, and reduced learning anxiety have been the core objectives of most studies using qualitative measures and evaluation methods (Arnold, 2007; Beauvois, 1998; Bhattacharaya, 1999; Weasenforth, Biesenbach-Lucas & Meloni, 2002).

In general, these studies suggest that learning outcomes in asynchronous L2 settings are either similar to or better than the ones expected in traditional settings (Hiltz, 1997; Hiltz, Zhang & Turoff, 2002; Song, Singleton, Hill & Koh, 2004; Swan, 2003; Wishart & Guy, 2009). Song, Singleton, Hill, and Koh's (2004) and Hiltz' (1997) students believed online discussion increased the quality of their learning experience. A number of studies, focusing on the linguistic output of students, seem to imply enhanced overall language knowledge, higher competence in certain language aspects, and oral and written proficiency (Abrams, 2003; Chun, 1994; Fjermestad, Hiltz & Zhang, 2005; Irvine, Hein & Laughlin, 1999; Sherry, Tavalin & Billig, 2000; Swan, 2003). Althaus (1997) found that students participating in online discussion learnt better and had higher grades than their counterparts in face-to-face settings. Irvine *et al.* examined how discussions in chats, web-based discussion boards and emails (listserv-based) affected the learning outcomes of 42 students at an American university. Results indicated that students' output in discussion boards and emails were much longer than those in synchronous discussions. In addition, reference to textbooks and peer responses and provision of citations were evident in the asynchronous mode unlike the synchronous one. In general, students considered all types of online discussion beneficial and recommended using them in future courses. Wang and Woo (2007) found that their L2 students perceived asynchronous discussion better than in-class discussion in these aspects: atmosphere, clarification, enhanced communication and focus.

That said, some other studies have found little or no evidence to support the advantages of using asynchronous discussion (Benbunan-Fich, 1997; Johnson, 2008; Lin & Overbaugh, 2007). Over two decades, Hiltz (1988, 1994, 1997, 1998; Hiltz & Wellman, 1997) has been conducting experimental studies to evaluate the effects of asynchronous computer conferencing in distance learning courses but found no significant difference between face-to-face (f2f) and asynchronous modes. Lin and Overbaugh (2007) similarly found no significant difference between f2f, synchronous and asynchronous discussion in affecting the achievement and learning satisfaction of 252 adult teacher

education students, although all of them reported more preference for asynchronous discussion. Beatty (2003: 9), in this regard, maintains that CMC is "a situation in which computer-based discussion may take place but without necessarily involving learning."

This definition is not, however, entirely adequate as it overlooks the possible learning opportunities in networked CMC. In ESL/EFL settings in particular, most online communicative types have been used as supplementary learning tools (Baron, 1998; Murray, 1988). Many researchers consider these tools a potential answer to the two strong needs mentioned by Lamy and Hampel (2007: 7) below:

> It could be the means through which teaching occurred, and it could be an end in itself. Learners could engage with the communicative aspect of their study by exchanging language online rather than in conversation classes, as they have done hitherto.

It is also noteworthy that most of the studies reporting negative outcomes of using discussion boards were conducted in distance learning modes (e.g. Hiltz) rather than blended modes, where students receive instruction in class and using online learning platforms for communication and discussions. This study aims at empirically verifying the results of these studies.

That said, many of the studies that have shown enhanced language learning in asynchronous discussion have also reported the development of a number of skills especially writing. Being the core skill investigated in this study, the following section provides some literature in relation to L2 writing approaches to teaching writing and models of writing process in addition to studies investigating L2 writing development in online settings.

2.3.2. Writing Development in Discussion Boards

This section is directly relevant to the first main research question. It is important before reviewing studies that have investigated whether and how writing is developed in discussion boards, however, that the main theories and approaches of second language writing are presented.

2.3.2.1. Second Language Writing

Interest in researching second language writing is a relatively recent phenomenon. Although some studies were found during the 1960s, it was some 20 years later that studying L2 writing became a considerable strength in the field of *Teaching English to Speakers of Other Languages* (TESOL) in the form of publications that used the term "second language writing" in their titles. It was during the last decade of the Twentieth Century that researching L2 writing was significantly prominent. In 1990, *Second Language Writing: Research Insights for the Classroom*, edited by Barbara Kroll was published by *Cambridge University Press*. This was followed by the publication of *Assessing Second Language Writing in Academic Contexts*, edited by Hamp-Lyons in 1991, and the establishment of the *Journal of Second Language Writing* in 1992.

To provide a theoretical background to the first main research question investigating the possible effects of using discussion boards on the development of writing, it is first necessary to have a full understanding of the different teaching approaches of writing in traditional L2 settings and to determine later which is more effective in enhancing students' written output. It is also important to view the most well-known writing models so that the findings of the study in this regards are interpreted accordingly.

a. <u>Approaches to Teaching Writing</u>

1. The Structural Approach

The focus of this approach is on writing as a product and involves using techniques such as familiarization (i.e. using exercises in a text to familiarize students with grammar and

lexis), controlled writing (i.e. using fixed patterns and substitution tables), guided writing (i.e. using model texts) and free writing (Hyland, 2003). L2 writing, according to behaviourists, is considered an act of habit formation. The teacher's task is to assess the texts produced for the accurate use of grammatical and lexical patterns rather than for the ideas presented. This approach, however, has been criticized for its negligence of cognitive learning strategies and coherence and its over-emphasis of accuracy over fluency and communication.

2. *The Functional Approach*

This approach emphasises the purpose of writing and stresses the production of paragraphs that are cohesive and coherently developed from topic sentences (Raimes, 1983). This approach is related to the *theory of contrastive rhetoric*, which stresses the importance of organisational patterns and logical construction of forms in essays. This approach, however, has been criticised for being another product-oriented approach.

3. *The Expressivist Approach*

This approach, introduced in the 1980s, highlights the importance of relying on L2 learners' personal experiences to produce expressive writing using techniques such as pre-writing, multiple drafting and journal writing (Elbow, 1991; Hyland, 2003). Hyland (2003) asserts that this approach considered writing a learned rather than taught act carried out by autonomous learners relating to their social environments. This approach emphasises encouraging students to write freely and fluently more than writing accurately. Expressivists claim that writing is an individual act in which purpose, meaning and form are established by the writer to create an audience that matches his/her purposes (Nystrand, 1990).

However, this approach seems to be disadvantageous when L2 learners belong to cultures that do not encourage self-expression (Hyland, 2003).

4. *The Process Approach*

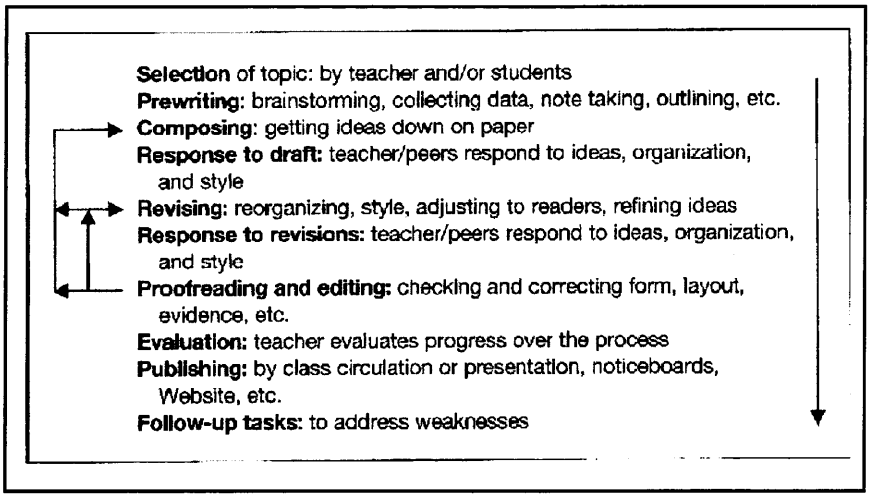
As a response to the previous approaches that emphasised product, researchers' interest during the late 1970s and the 1980s shifted to the cognitive processes involved in

writing (Zamel, 1983). Matsuda (2003: 21) states that this approach viewed writing "as a process of developing organization as well as meaning." This process involves invention strategies, drafting and teacher and peer formative feedback (Raimes, 1983).

The framework that this approach uses is *planning-writing-reviewing*. Hyland (2003: 11) presents a process model of writing instruction (*see* Figure 2.4) and asserts that:

> Planning, drafting, revising and editing do not occur in a neat linear sequence, but are recursive, interactive, and potentially simultaneous, and all work can be reviewed, evaluated, and revised before any text has been produced at all.

Figure 2.4: Hyland's (2003) Process Model of Writing Instruction



While writing expertise used to refer to the ability to adhere to style-guide prescriptions concerning grammar, arrangement and punctuation, cognitive scholars consider it the ability to employ certain universal, context-independent revision and editing practices to guide writing. As a reaction to the cognitive model of Flower and Hayes (1980) (*see* Figure 2.6 below) which decontextualizes the written output and claims that writing is bound to translating ideas into visible language, the process approach views writing as a process shaped by the social forces of context manifested in the presence of audience and that writing is determined by its discourse community (Hyland, 2003).

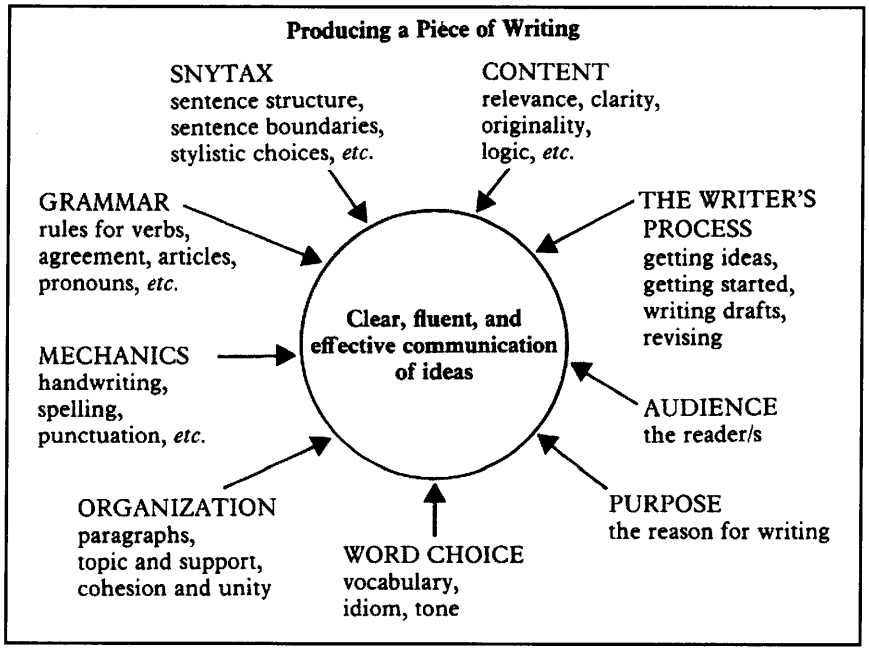
This approach stresses cognitive metalinguistic thinking: learners self-monitor and refine their written expression and linguistic knowledge while writing so that it reflects their thoughts and competence level. Swain's *Comprehensible Output Theory* (1985) argues that reflective thinking is requisite to effective L2 learning as it provides learners with control over the processes of their L2 production (Cumming, 1990; Ellis, 1997; Krashen, 1982; Zamel, 1983).

The consideration of writing as a process led to acknowledging the influence of context and to the emergence of specified L2 courses such as *English for Specific Proposes* (ESP) and *English for Academic Purposes* (EAP). In this respect also, Halliday's (1978) *sociolinguistic model* views writing as socially embedded and socially conservative. Language, which acknowledges the social context, is structured to make *interpersonal*, *textual* and *ideational* meaning: they represent the physical, social and mental aspects of the world, "enact social relations between participants in social events and the attitudes, desires and values of participants; and coherently and cohesively connect parts of texts together, and connect texts with their situational contexts" (Fairclough, 2003: 27). Halliday acknowledges the importance of the discourse community and the environment in which a text is produced. Within this concept, 'genre' and 'register' produced by social agents are important to understand how language is used to achieve goals that are culturally or contextually appropriate. In accordance, Faigley (1992) views writing as a social act that changes according to the changes in the discourse community.

Although peer feedback is a key component in this approach, one of the criticisms it has received is the possible misunderstanding of the purpose of peer feedback as learners could show discomfort with this kind of feedback especially in "collectivist" cultures such as the Arabic culture, members of which could be more interested in group solidarity rather than individual achievement. Differences in writing styles that arise from cultural beliefs and attitudes such as tendencies to be indirect, taking a more collectivist rather than individualistic stance, and drawing heavily on authorities are common features in students' essays. The differences in cultural norms and rhetorical styles may result in elementary students' low achievement and resistance to writing tasks as well (Fox, 1994; Hyland, 2003).

In sum, it seems that these approaches do not reconcile well with claims that writing develops learning because of the certain biases these theories seem to be underlined with. For instance, while *the process approach* advocates complex processes of production, *expressivisits* are more biased towards processes of conversational discourse. Thus it seems more appropriate to incorporate all these approaches together and then investigate certain conditions as being integral of other conditions of L2 writing (Cumming, 1990; Ellis, 1997). Many theorists and researchers have supported a synthesis between process, purpose and context (Hyland, 2003; Kroll, 2003). Zamel (1983: 165) describes writing as "non-linear, exploratory, and generative process whereby writers discover and formulate their ideas as they attempt to approximate meaning."Raimes (1983) also illustrates the main tenets of L2 writing that can help students communicate their ideas effectively, clearly and fluently: syntax, content, audience, purpose, word choice, organization, mechanics and grammar (*see* Figure 2.5 below).

Figure 2.5: Raimes' (1983: 6) Diagram of the Main Tenets of L2 Writing



Raimes announces that skilled L2 writers follow the mechanics illustrated in the figure above while writing topic sentences, paragraphs or essays, and stresses that task knowledge and cognitive control are as important as knowledge of grammatical structure. That said, many theorists have provided a number of writing development models, the two most important of which are discussed below.

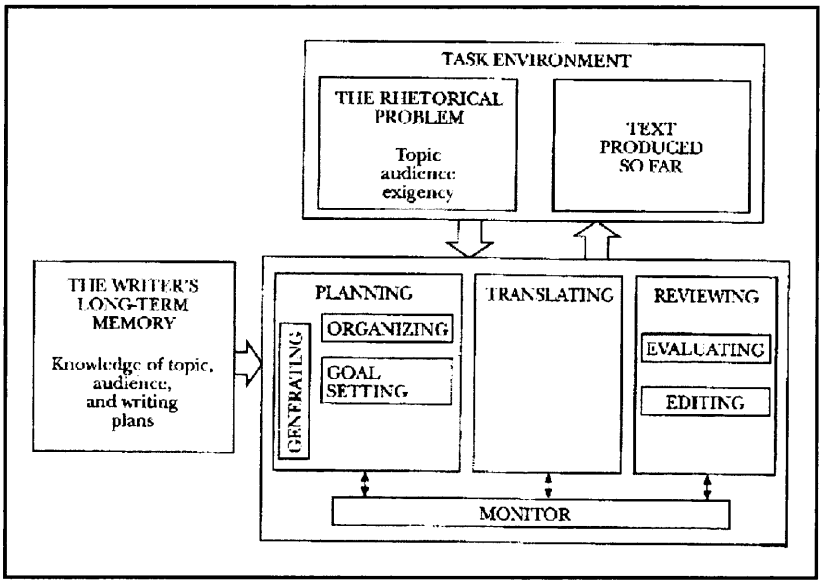
b. Writing Development Models

1. Flower and Hayes (1980) Writing Model

Flower and Hayes (1980) were the first to introduce '*general text writing model*," aiming at explaining the processes of writing and analysing writing experimentally based on protocol analysis (*see* Figure 2.6 below). The model contains three main parts and the processes L2 writers go through during writing such as planning, translating, and reviewing as part of the overall monitoring process. Sub-processes include organizing, goal-setting, evaluating and editing.

In general, this model emphasised that writing involves the development of cognitive processes, a concept that relates this model to the 'process writing' approach viewed earlier. It also stresses the importance of pre-writing activities and peer influence.

Figure 2.6: Flower and Hayes (1980) Writing Model



Flower and Hayes (1980) claim that this model describes the individual differences between learners' writing styles. The model consists of three components: the task environment, the writer's long-term memory and the writing process. They first component signifies that writing can be influenced by the surrounding environment such as topic, audience and exigency. The second component is the writer's long-term memory and schematic knowledge retrieved and used while writing. The third

component is the writing process itself involving planning, translating and reviewing while constantly monitoring the process of text generation.

According to Grabe and Kaplan (1996: 93), Flower and Hayes' writing model has left substantial influence on writing research as it has: 1) developed argumentative issues, 2) explained and justified how writing is a recursive process, and 3) provided new topics for research and experiment. That said, this model overlooks the outcomes of performance and fails to have explanatory authority (Grabe, 2001).

2. *Bereiter and Scardamalia's (1987) Developmental Model*

Aiming at providing a better description of the process of writing, Bereiter and Scardamalia introduced in 1987 their developmental model of writing which discusses how changing tasks and task complexity impacts the writing performance. Their model consists of two main strategies: *knowledge telling strategy* (*see* Figure 2.7 below) and *knowledge transforming strategy* (*see* Figure 2.8 below) and compares the processes skilled and unskilled writers go through (Grabe & Kaplan, 1996). The first strategy, used by less skilled writers, describes the process of writing a text from ideas retrieved from learners' long-term memory. It involves three main types of knowledge: the mental understanding of the assignment through guidance, the content knowledge and discourse knowledge, and the knowledge telling process, which entails seven sub-strategies such as memory retrieval, assessment of appropriateness, noticing, drafting, *etc.*

The second main strategy is the *knowledge transforming strategy* used by more skilled writers. This strategy involves three principal units: the mental representation of assignment, the content and the discourse knowledge, and the knowledge telling process, as shown in Figure 2.8 below.

Figure 2.7: The Knowledge Telling Strategy Model

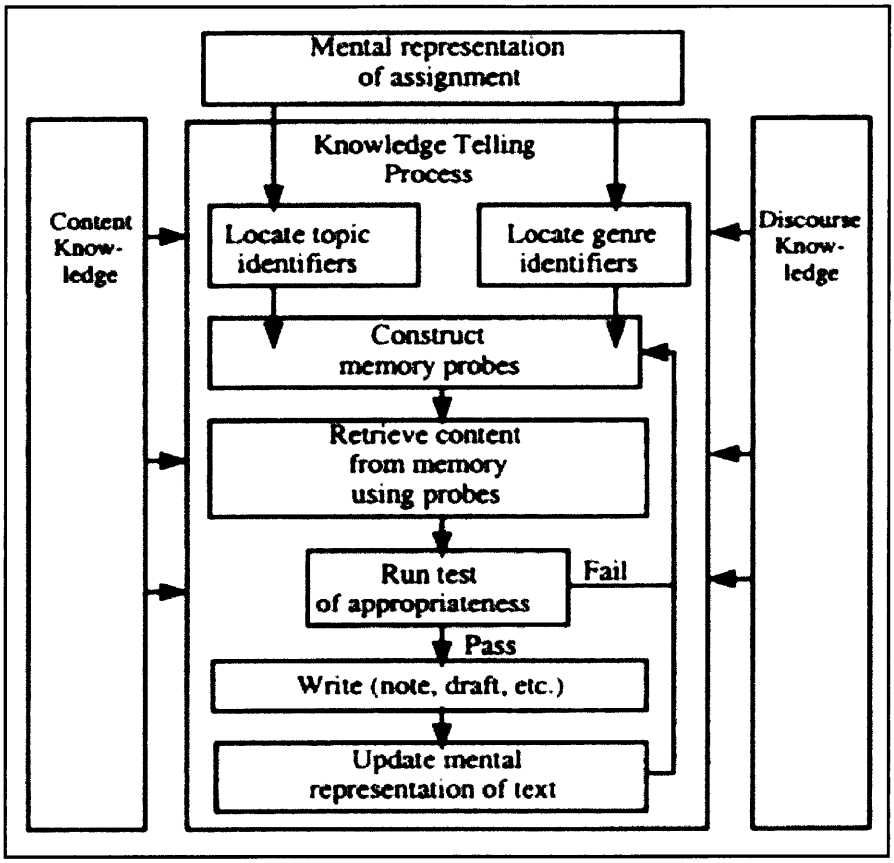
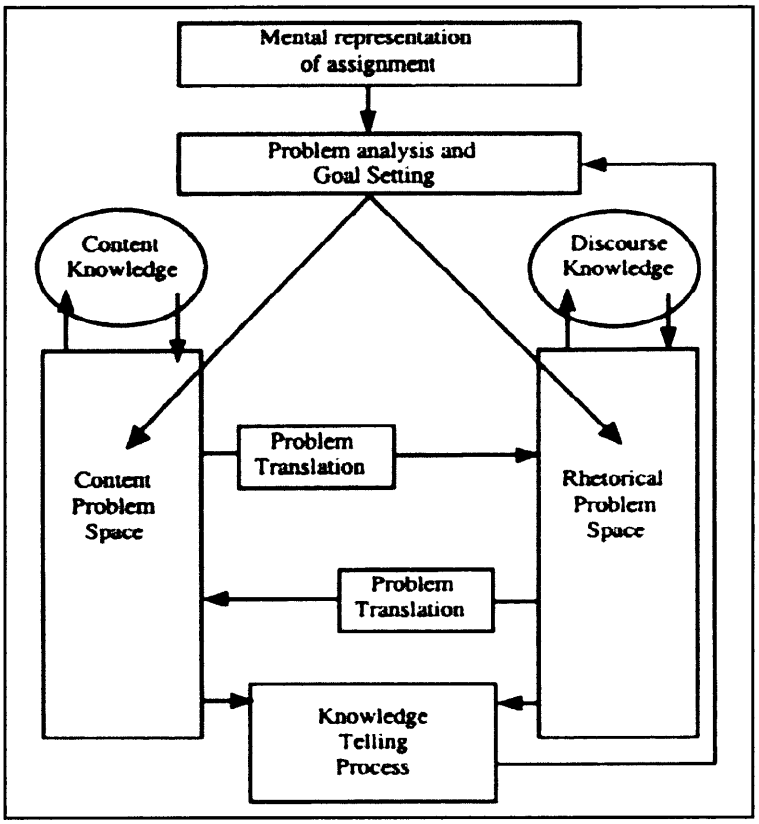


Figure 2.8: The Knowledge Transforming Strategy Model



Grabe and Kaplan (1996) find this model significantly important in helping understand how skilled and unskilled writers write and in embracing multiple models of processing in a hierarchal manner. While planning is practiced by young and unskilled writers, old and skilled writers produce well-planned pieces of writing using their content and discourse knowledge regardless of the context of the written assignment. This model is considered better that that of Flower and Hayes because it is "based on hypothesized empirical evidence rather than logic or post hoc analysis" (Grabe, 2001: 48). That said, this model has not been significantly developed in further research or updated to suit online settings.

In sum, it appears that no particular writing model seems suitable for all types of writing processes, genres or writers. It is appropriate then to examine the writing process(es) in this study and verify the writing models students followed. It is possible that online students in L2 settings follow similar or different writing processes, which this study aims to find out.

That said, a number of researchers have attempted to examine the development of writing and the processes involved in online interactive tools like discussion boards. The following section reviews the main findings of these studies.

2.3.2.2. Effects of Discussion Boards on Writing Development

The effects of using online discussion on writing development have been examined in a number of studies. Particular attention in this regard was given to the different language development aspects: *fluency*, *accuracy* and *complexity* (Abrams, 2003; Hewitt, 2000; Lapadat, 2000; Sotillo, 2000; Warschauer, 1996a). Lapadat, for instance, found that asynchronous postings were similar to conventional writing. Although online interlocutors produced fewer words, their online contributions were "more carefully crafted, adopted to the audience, dense with meaning, coherent, and complete" than conventional writing (p.8). Warschauer found asynchronous discussion more formal and lexically and syntactically complex than in-class discussion, while Sotillo's (2000) found higher complexity in asynchronous rather than synchronous discussions because of the flexibility of time in the earlier. That said, many studies have shown that learners are more attentive to lexical items than grammatical structures when engaged in

interactive negotiations of meaning (Blake, 2000; Pellettieri, 2000). This could be considered a disadvantage of these interactions if a teacher's main aim is to increase students' accuracy.

Students' productivity in discussion boards has also been examined. Merron (1998) found that his students wrote more in online discussion than in offline discussions. Bonk, Hansen, Grabner-Hagen, Lazar and Mirabelli (1998) and Im and Lee (2003) compared synchronous and asynchronous case discussions and found that asynchronous discussion was more task-oriented and produced more written postings. Gaddis, Napierkowski, Guzman, and Muth (2000) also found that online discussion increased students' awareness of their writing and their use of *text* to *talk* to their peers.

Researchers mostly attribute enhanced writing proficiency in asynchronous settings to pre-task planning. Pre-task planning, which takes place after the topic of discussion is introduced, involves a number of activities that allow students to survey topic language and then choose relevant words and phrases, brainstorm ideas, recall similar experiences, organise thoughts, and search for more information (Ellis, 1997; Skehan & Foster, 1997). A number of studies have shown that pre-task planning enhances some or all of the three aspects of language development: *fluency, accuracy,* and *complexity* (Crookes, 1989; Mehnert, 1998; Yuan & Ellis, 2003). Studies examining discussion boards also acknowledge the influence of pre-task planning on learners' language development and assert that it provides them with opportunities to read and craft responses and to reflect critically before responding. These studies consider the element of planning a major reason behind students' preference of asynchronous over face-to-face and synchronous discussion (Benbunan-Fich *et al.*, 2002; Bhattacharaya, 1999; Black, 2005; Davidson-Shivers, Tanner, & Muilenburg, 2000; Hiltz & Wellman, 1997; Lin & Overbaugh, 2007; Wiesskirch & Milburn, 2003).

The advantage of planning is influenced by the time-convenience in discussion boards resulting in proper revision and proof-reading of writings. In other words, the additional time learners have helps them process texts and provide complex responses (Bonk & Cunningham, 1998; Harasim, 1990; Kamhi-Stein, 2000a; Olsen & Lepientre, 1995;

Schulte, 2003; Weasenforth, Biesenbach-Lucas, & Meloni, 2002). It also allows students to discuss their L2 learning process in reference to what Lamy and Goodfellow (1999) call appropriating "reflective conversations," and to produce more writing to keep up with the overall participation rate depending on students' preferences and attitudes (Daley, 2002; Feenberg, 1999; Logan, 1995; Rourke & Anderson, 2002; Weasenforth *et al.*, 2002).)

Equally, time-convenience might entail negative or discouraging behaviour among participants like the "log-in lags" (Ocker & Yaverbaum, 1999: 423). The fact that not all participants log in at the same time can be increasingly frustrating for students due to the lack of immediate response (Levin, He & Robbins, 2006). Klemm (2000) adds that some students may also "lurk" by only reading the discussions but choosing not to respond (Ocker & Yaverbaum, 1999; Weasenforth *et al.*, 2002). Hence, some studies have found that students prefer either face-to-face discussion to online discussion (Angeli, Valanides & Bonk, 2003; Cooper, 2001; Tiene, 2000) or prefer synchronous discussion more than asynchronous discussion due to the immediate feedback and instantaneous idea-generation (Pena-Shaef, Martin & Gray, 2001). According to Lin and Overbaugh (2007: 400), synchronous communication "allows students' concerns to be addressed instantaneously which can be an important factor in the reduction of transitional distance."

That said, using synchronous discussion in L2 settings has received some criticism. Because of the temporal constraints placed on students to respond quickly, they tend to make excessive use of abbreviations and have typing mistakes (Herring, 2001). Technophobic students or those with low typing speed might not also have enough time to think about their responses or to frame questions, and hence, can fall behind (Berge & Collins, 1993; Hyland, 2002). Another disadvantage less frequent in asynchronous discussion is that turns do not always fit the sequence of messages as in normal conversations; hence they are often incoherent and overlapping (Hyland, 2002; Yates, 2001).

Another constraint could be the effect of slow Internet connection on the speed of data transaction and on the instantaneous flow of interactivity. Most of the above-mentioned studies claim that these disadvantages are diminished in asynchronous settings. These studies also presented a number of variables that might positively influence L2 learning experience in these settings: *enhanced cognitive learning strategies, increased interactivity and collaboration, reduced communication anxiety,* and *improved sense of presence*, all of which are discussed below.

2.3.3. Variables Affecting Language Development in Discussion Boards

a) Constructive Metacognitive Learning Strategies and Skills

A number of studies (Hiltz *et al.*, 2002; Song *et al.*, 2004; Swan, 2003) argue that using discussion boards enhances participants' learning strategies (i.e. *metacognitive strategies*, *cognitive strategies* and *social mediation strategies*), listed by O'Malley, Chamot, Stewner-Manzanares, Kupper and Russo(1985). In particular, students' engagement in this type of discussion has been reported to enhance self-pacing and self-directed learning through most metacognitive strategies listed below in Table 2.1 below such as organization, attention, functional planning, delayed-production of language, self-monitoring, evaluation and reinforcement. These strategies are examined in this study and more explanation of each strategy is provided in the designated chapters. In addition to meta-cognitive strategies, cognitive strategies such as note-taking and elaboration and social mediation strategies like co-operation and questioning for clarification have been acknowledged to influence language development in online settings (Benbunan-Fich & Hiltz, 1999).

Table 2.1: Learning Strategies (from O'Malley *et al.*, 1985)

LEARNING STRATEGY	DESCRIPTION
METACONGNITIVE STRATEGIES:	
Advance organizers	Making a general but comprehensive preview of the main organizing concepts of principles in an anticipated learning activity.
Directed attention	Decoding in advance to attend in general to a learning task and to ignore irrelevant distracters.
Selective attention	Deciding in advance to attend to specific aspects of language input or situational details that will cue the retention of language input.
Self-management	Understanding the conditions that help one learn and arrange for the presence of those conditions.
Functional planning/ Advance preparation	Planning for and rehearsing language components necessary to carry out on upcoming language task.
Self-monitoring	Correcting one's speech for accuracy in pronunciation, grammar, vocabulary; for appropriateness related to the setting or the people who present them.
Delayed production	Consciously deciding to postpone speaking to learn, initially, only through listening comprehension.
Self-evaluation	Checking the outcome of one's own language learning against an internal measure of completeness and accuracy.
Self-reinforcement	Arranging rewards for oneself when a language learning activity has been accomplished successfully.

Similarly, Hill, Wiley, Nelson, and Han (2004) highlight four main learning strategies reinforced in asynchronous discussion: *information gathering, knowledge construction, distributed processing*, and *using distributed resources*. Hammond (1998: 332) explains that discussion boards help provide students with opportunities "to get to know each other, to articulate ideas through writing, to pick up new ideas through reading messages, to be stimulated by working with other learners, and to explore and develop their own online resources".

Other studies have also have observed increased student metacognitive reflection, and critical thinking and problem-solving skills in asynchronous discussions (Benbunan-Fich, 1999; Huang & Lee, 2004; Irvine, 2000; Parker, 1999; Meyer, 2003; Rourke & Anderson, 2002; Weasenforth *et al.*, 2002; Weisskirch & Milburn, 2003). Sengupta (2001) claims that students in asynchronous discussions develop skills to "interpret and produce contextually appropriate language by recognising, deconstructing, and analysing texts they encounter" (p.110). Hence, when participants write their thoughts,

they become more aware of the need for clarity and reflective "talk" whether formal or informal (Black, 2005: 6).

Many comparative studies also argue that higher-order thinking, social construction of meaning and reflection are more fostered in asynchronous discussion than synchronous discussion (Black, 2005; Davidson-Shiver *et al.*, 2000; Lapadat, 2000). Lapadat's study and discourse analysis of discussions in four online courses concluded that asynchronous discussion is well suited to fostering critical thinking, social construction of meaning, and shifts in perspective. Williams and Merideth (1996) also found that it enhances independent thinking. However, it has to be mentioned that their findings were only based on students' self-report rather than content analysis and hence, these findings cannot be considered highly reliable.

Another high-order thinking notion is self-efficacy supported by the *constructivist learning model.* Studies suggest that asynchronous discussion empowers learners to claim ownership and construction of their own knowledge beyond the reproduction of the instructor's knowledge (Ahmad, 1999; Johnson, 2007; Jonassen, 1994; Tudini & Rubino, 1998). Instead of memorising facts, students become involved in their own learning process by manipulating, formulating, analysing and synthesising their learning tasks (Booth & Hulten, 2003; Chong, 1998; Collins & Berge, 1996; Harasim, 1990; Kern, 1995a; Lamy & Goodfellow, 1999; Sullivan & Pratt, 1996; Warschauer, 1996a, 1999).

Nevertheless, some other studies have found little empirical evidence to support the enhancement of students' cognitive skills and learning strategies in asynchronous discussion (Harrington & Hathaway, 1998; McLoughlin & Luca, 2000). Levin, He and Robbins (2006) even found that students felt they exhibited increased critical thinking skills in synchronous discussions. However, their findings cannot be considered consistent because no comparison was made between the effects of asynchronous and synchronous discussion.

That said, the majority of these studies acknowledge the influence of pre-task planning in discussion boards on students' overall learning experience. One can argue here that pre-task planning can be done in class without the need of using discussion boards. We, however, have mentioned in the first chapter that current teaching methodologies in Bahrain do not emphasise writing mechanics such as planning or drafting possibly because of the teachers' increased workload and limited time available. Thus, using discussion boards to compensate for this shortcoming could be considered an added value for the teaching and learning processes. I believe that pre-task planning is intrinsically employed in online settings due to the impact of the presence of authentic and interactive audience and the permanence of students' written products.

b) Interactivity and Collaboration

I have mentioned earlier how this study defines interactivity (*see* 2.2.2.c) and how it uses the terms 'interactivity' and 'interaction' interchangeably. The following discussion, however, further provides illustration on the relevant theories and types of interactivity.

The relationship between enhanced interactivity and learning (Stubbs, 1976) can be related to Long's (1980) *Interaction Hypothesis*, which posits that "learners can learn a second language (L2) *through* the process of interacting rather than just manifesting what they have already learned *in* interaction" (Ellis & Fotos, 1999: 3), and which defines three types of interaction: *the negotiation of meaning*, *communication strategies*, and *error-treatment* (Ellis & Barkhuizen, 2005; Long, 1996). These interactions enable learners to comprehend and use language through the negotiating of meaning, and help them receive *comprehensible input* (Krashen, 1982) and produce more *comprehensible output* (Swain, 1985).

The association between online discussion and the *Interaction Hypothesis* has received considerable attention from researchers reporting enhanced comprehensible input and output students exchange in online meaning-negotiation tasks (Chapelle, 1997, 2001; Simpson, 2003). In support of North's (2007: 538) argument that online discussion facilitates a "playful type of interaction," research has shown that learning is enhanced

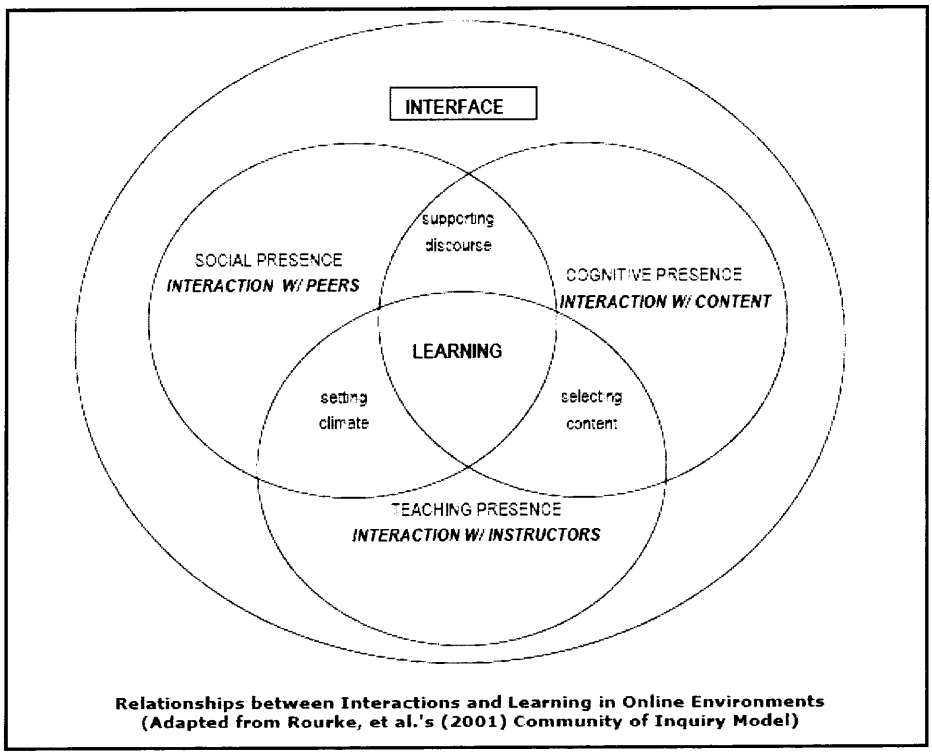
in asynchronous discussion because of improved interactivity (Beaudin & Grigg, 2001; Ellis & Barkhuizen, 2005; Fulford & Zhang, 1993; Kumari, 2001). Similarly, more than 70% of students in Boyd's (2008) study considered their online interactions similar or better than their in-class interactions.

A number of models have been introduced to evaluate the levels of interaction in asynchronous discussion. Henri (1992) proposed a simple online participation taxonomy in which contributions are either *independent* or *interactive*, while Lamy and Goodfellow (1999) presented three types of interactivity: *monologic, conversational* and *reflective.* Thomas (2002: 355), however, argued that more categorisations of students' online interaction were necessary and hence, divided interaction into four types of messages, as follows:

- *Independent*: a message makes no reference to other students' messages
- *Quasi-interactive*: a message refers to other students' messages but only as a preliminary point of reference before students continues with their own isolated analysis.
- *Interactive (elaborative)*: a message refers to another student's message and further develops the theme.
- *Interactive (negotiating)*: a message refers to another student's message and engages in negotiating or debate.

Several other studies have stressed the importance of the overall accumulation of *student-student*, *student-teacher* and *student-content* levels of online interaction. These levels of interaction, presented in Rourke, Anderson, Garrison and Archer's (2001) Model (*see* Figure 2.9 below), are assumed to positively correlate with enhanced learning and increased participation (Black, 2005; Egbert & Hanson-Smith, 1999; Fulford & Zhang, 1993; Richardson & Swan, 2003).

Figure 2.9: Rourke *et al.*'s (2001)
Relationship between Learning and Interaction in Online Environments Model



The figure above suggests that learning in online settings occurs as a result of interaction with *peers*, *instructor* and *content*. Correspondingly, Swan (2003) provides a meta-analysis of studies on the learning effectiveness of these interaction levels and classifies research findings according to facilitated *interaction with content*, with *classmates/peers*, and with *instructors* (*see* Figure 2.10 below), and also examines the element of *interaction with course interface* (*see* Figure 2.11 below). Swan argues that interaction is a catalyst for enhancing learners' motivation to participate and produce better learning outcomes and that studies with "no significant differences" handle unique differences in means of learning and knowing. Hence, practitioners and researchers ought to examine more important learner characteristics and learning models.

Figure 2.10: Swan's (2003:25-26) Meta-Analysis of Research on Learning Effectiveness and Interaction in Online Discussion

Research Finding	Implications for Practice
Learning Effectiveness: Interaction with Content	
Online discussion/learning may be more supportive of experimentation, divergent thinking, exploration of multiple perspectives, complex understanding & reflection than F2F discussion *(Parker and Gemino, 2001; Picciano, 2002)*	Encourage experimentation, divergent thinking, multiple perspectives, complex understanding & reflection in online discussion through provocative, open-ended questions, modeling & support & encouragement for diverse points of view Develop grading rubrics for discussion participation that reward desired cognitive behaviors Develop initial course activities to encourage the development of swift trust
Online discussion/learning may be less supportive of convergent thinking, instructor directed inquiry & scientific thinking than F2F discussion *(Parker and Gemino, 2001; Picciano, 2002)*	Use other course activities to support these such as written assignments, one-on-one tutorials, small group collaboration & self-testing Develop grading rubrics for discussion participation that reward desired cognitive behaviors
Learning Effectiveness: Interaction with Classmates	
Learning occurs socially within communities of practice; there is greater variability in sense of community ratings among online courses than in F2F courses *(Gunawardena & Zittle, 1997; Brown, 2001; Haythornthwaite, 2002; Rovai, 2002)*	Design community-building activities Model the use of cohesive immediacy behaviors in all interactions with students Develop initial course activities to encourage the development of swift trust Address issues of community in faculty development
Verbal immediacy behaviors can lesson the psychological distance between communicators online, overall sense of social presence is linked to learning. *(Gunawardena & Zittle, 1997; Richardson & Swan, 2003; Swan, 2003)*	Develop initial course activities to encourage the development of swift trust Model & encourage the use of verbal immediacy behaviors in interactions with students Encourage students to share experiences & beliefs in online discussion Introduce social presence & verbal immediacy in faculty development
Student learning is related to the quantity & quality of postings in online discussions & to the value instructors place on them. *(Jiang & Ting, 2000)*	Make participation in discussion a significant part of course grades. Develop grading rubrics for discussion participation Require discussion participants to respond to their classmates postings &/or to respond to all responses to their own postings Stress the unique nature & potential of online discussion in faculty development
Vicarious interaction in online course discussion may be an important source of learning from them	Encourage & support vicarious interaction. Require discussion summaries that identify steps in the knowledge creation process Use tracking mechanisms to reward reading as well as responding to messages
Learning Effectiveness: Interaction with Instructors	
Teaching presence — design & organization, facilitating discourse & direct instruction — is linked to student learning *(Shea et al., 2003)*	Highlight three elements of teaching presence in faculty development & provide examples of how to improve in each area. Provide ongoing support for instructors in each of these areas.
The quantity & quality of instructor interactions with students is linked to student learning *(Jiang & Ting, 2000)*	Provide frequent opportunities for both public and private interactions with students Establish clear expectations for instructor-student interactions Provide timely & supportive feedback Include topic of instructor interaction in faculty development
Ongoing assessment of student performance linked to immediate feedback & individualized instruction supports learning *(Riccomini, 2002; Kashy, et al., 2003)*	Automate testing & feedback when possible Provide frequent opportunities for testing & feedback Develop general learning modules w/ opportunities for active learning, assessment & feedback that can be shared among courses &/or accessed by students for remediation or enrichment

Figure 2.11: Swan's (2003:24) Meta-Analysis of Research on Learning Effectiveness and Interaction with Course Interface in Online Discussion

Learning Effectiveness: Interaction with Course Interfaces	
Interactions with course interfaces are a real factor in learning; difficult or negative interactions with interfaces can depress learning. *(Hillman, et al., 1994; Hewitt, 2003)*	Work with major platforms to improve interfaces to support learning. Develop consistent interfaces for all courses in a program. Provide orientations to program interfaces that help students develop useful mental models of them. Provide 24/7 support for students and faculty. Make human tutors available.
Patterns of interaction in online discussion are as much dictated by the flagging of unread notes & display of individual messages as anything else. *(Hewitt, 2003)*	Explore new interfaces. Make students responsible for sustaining discussion threads. Make students summarize discussion threads. Require students to incorporate materials from the discussions in their assignments.
Better transfer of learning from narration & animation presented simultaneously, in conversational style, with irrelevant elements & on-screen text eliminated. *(Mayer, 2001)*	Present words in spoken form. Use both words and pictures simultaneously. Avoid extraneous video & audio. Do not add redundant on-screen text.
Better transfer of learning when components of concepts are addressed first, when organization is signaled, & when the pace of presentation is learner-controlled. *(Mayer, 2001)*	Begin presentations with descriptions of components & organization. Return or signal both often. Allow learners to control the pace of presentations.

The studies cited by Swan above suggest that online discussion lessens psychological stresses, enhances social presence and correlates positively with learning. Swan cautions, however, that greater consistency and clarity of design, student control and immediacy of feedback are required to ensure enhanced learning as online discussion seems to be more suitable for experimentation, reflection and complex understanding than f2f discussion but seems to be less supportive of scientific and convergent thinking. That said, Swan's meta-analysis seems to suggest that there is enough evidence to support the positive effects of the different types of online interaction on the learning outcomes. It also asserts that the quantity and quality of teacher-student interaction correlate positively with student learning and community perceptions. Hence, this study examines qualitatively the effect of teachers' role on student participation and/or learning.

Many other studies claim that increased interactivity in discussion boards influences students' participation rate (Hiltz, 1994; Rogers, 2006; Schulte, 2003). Kim and Beal (2006) argue that the more students participate in the discussions, the better grades they receive. Sullivan and Pratt (1996) found that all their students participated in the online

discussion while only 50% of them participated in in-class discussions. Although Davidson-Shivers *et al.*'s (2000) graduate students equally enjoyed synchronous and asynchronous discussion, they participated more in the latter because it helped them provide reflective and thoughtful responses, pose critical questions and present insightful counter-arguments. Irvine (2000) compared chats, threaded discussions and email (listserv-based) discussions and found a 100% participation rate in the threaded discussions even among students who were often inactive in class. Similarly, Weisskirch and Milburn (2003) compared students' participation in face-to-face (f2f) and asynchronous discussion in *TESOL* teacher preparation course. Findings showed that while f2f discussion was mostly controlled and run by the teacher, asynchronous discussion showed more student-student interaction and participation because of high peer accessibility, support and collaboration. Students also exhibited positive attitudes towards online discussion as a tool to know their peers' perspectives. Similar results were found by Rogers (2006) and Warschauer (1996a).

c) Enhanced Peer Response

Peer response often serves as a strong stimulus for enhanced interaction and collaboration, participation and written output (Black, 2005; Ellis, 1997). The influence of peer response can be related to Wertch's (1991) *Socio-Cultural Theory,* which suggests that the written production in group interaction involves each students' "social and cultural values, unique background experiences, prior knowledge and assumptions ... propositional knowledge about the text's context, how procedural knowledge regarding how one interacts with the text, and meta-cognitive skills regarding one's thoughts about the discussion process contribute to the development of literate thinking" (Soter, Wilkinson, Murphy, Rudge, Reninger& Edwards, 2008: 376). Hayes (1996) similarly states that writing is a social artefact carried out in a social context, socially constrained by conventions and affected by the writer's individual history of text production. It is also affected by the amount of exposure to the writings of others. Anderson, Rourke, Garrison and Archer (2001) add that "thinkers must hear several voices within their own heads representing different perspectives on the issue. The ability and disposition to take more than one perspective arises from participating in discussions with others who hold different perspectives" (p.2).

The positive effects of peer response on L2 language learning and writing proficiency in asynchronous discussion have been reported in a number of studies (Black, 2005; Collins, 2000; Davis & Thiede, 2000; Mauriello, 2000; Montero *et al.*, 2007; Lafer, 1996; Tuman, 1992). Collins (2000), for instance, investigated the effects of peer response on writing in 27 online discussion boards over three semesters and found that when students model their arguments, the roles they intend to project to their audience intersect with their peers' visions and perceptions. Tella (1992) observed that the entire writing process of his online Finnish students changed because they constantly edited and revised their compositions to make them readable. Tella stated that students' writing quality also improved perhaps because they were targeting a genuine international audience and not only their teacher. Black (2005: 16) takes this point further and argues that:

> Student writing often improves because the writer anticipates that it will be read and responded to by peers. This improvement is in both mechanics and content. Peer and instructor expectations may provide internal motivation for participation as well as good writing, although instructor expectations may be made more concrete through modelling and assessment criteria of the discussion.

Similar views were stressed by Chong's (1998) students who were highly eager to participate and collaborate in large online discussions because of peer responses.

In sum, online peer response, whether explicit or implicit, could help learners attend to form and compare their production with those of the most competent learners (Davis & Brewer, 1997; Egbert & Hanson-Smith, 1999; Kamhi-Stein, 2000b). Since peer response is not facilitated in Bahraini L2 learning settings, I believe that using discussion boards to provide students with opportunities to exchange interactive peer responses and receive comprehensible peer feedback could be considered an added value to the learning process. I also believe that peer response is better enhanced in online settings than in classroom settings because of the absence of most

communication barrier such as anxiety, gender differences and cultural constraints in the earlier, as discussed below.

d) Reduced Communication Anxiety

Communication anxiety, often suffered from during in-class teacher-led discussion especially in L2 settings, is claimed to be diminished in group discussion in general and online discussion (Beauvois, 1998; Patterson, 2001; Roed, 2003; Warschauer, 1996a). Asynchronous discussion seem to allow passive students to share personal opinions interactively (Kamhi-Stein, 2000b), and promotes equality among students (Gilberts & Dabbagh, 2005; Rafaeli &Sudweeks, 1997; Sproull & Kiesler, 1986; Wallace, 1999). Shy, anxious or disabled interlocutors are possibly more interactive online possibly because of overcoming the physical "stage fright" found in face-to-face settings and because of what Berge and Collins (1996) refer to as the 'protective ignorance' of participants' rank, status and social roles (Althaus, 1997; Belcher, 1999; Hammond, 2000; Kern, 1995a; Ocker & Yaverbaum, 1999; Schulte, 2003).

Learners' protective ignorance and low anxiety in discussion boards correspond significantly with Krashen's (1982) *Affective Filter Hypothesis*. Learners *lowered affective filter* (i.e. learning in anxiety-free environments) is a contributing condition for successful L2 acquisition (Chester & Gwynne, 1998). Warschauer (1996a)'s comparative study found that the online groups were twice as balanced as the f2f groups, basically because the most silent or shy students increased their participation online. Meunier (1998) similarly found that 87% of students mentioned they had lower levels of anxiety when discussing topics online. Another qualitative study on perceived differences between f2f and online discussion using *Blackboard* showed that all pre-service teacher students (n=20) considered asynchronous discussion better at providing convenience and a good atmosphere of authenticity, comfort, aggression, equal access and domination, while face-to-face discussion was considered better at providing responses and effective results (Wang & Woo, 2007). In other words, although asynchronous settings allow for the provision of authentic audience and learning tasks and for equal chances of participation, they could occasionally witness some aggressive

behaviour on the part of the interlocutors possibly because of one group or gender dominating the discussions, as shall be discussed in the following section and in the results chapters.

That said, research on writing anxiety has shown that asynchronous discussion may be less threatening for anxious writers than f2f discussion (Ayoun, 1995; Mabrito, 2000), because L2 students might lack adequate lexical and/or grammatical competence to engage in discussions that require instantaneous delivery of proper language. In Ayoun's pilot study, writing in the online discussions was shown to be effective in lessening language learners' anxiety and increasing students' self-confidence in writing and reading skills.

However, Arnold's (2007) preliminary comparative study of L2 students' behaviour in f2f, synchronous and asynchronous discussion found no difference in reduced anxiety between all modes of discussion. Conversely, Castner (2000) and Hara and Kling (2000) observed that online students feel anxious when writing online. However, it could be argued that these findings are more applicable to synchronous discussion, which can pressurise student to respond to the fast flow of instantaneous conversations (Lin & Overbaugh, 2007). Asynchronous discussion, on the other hand, allows for more time to write and hence "may encourage those students who are less confident writers" (Black, 2005: 16).

Gender differences are also allegedly diminished in asynchronous discussion (Althaus, 1997; Fishman, 1999; Herring, 1992, 1996; Jeong, 2007). Gender equality in communication patterns was first addressed by Key (1975) and has been recognised in a number of studies examining online discussion (Blum, 1998; Danet, 1998; Davidson-Shivers, Morris & Sriwongkol, 2003; Herring, 2003; Rickert & Sacharow, 2000; Wu & Hiltz, 2004). These studies have shown that females and males participate equally in online discussion while males often dominate class discussion because females feel shy or embarrassed. Herring (1992, 2003) found that females' messages were more supportive while males' messages were more critical of people's viewpoints.

However, negative outcomes such as low participation could sometimes be found in online discussion if a particular gender dominates the discussion. While some studies found male domination in online discussion (Blum, 1999), others such as Kirkpartick and Cuban (1998) and Im and Lee (2003) found that female students were more active in online discussion than males. It is thus important that topics presented for discussion are gender-free especially in cultures with norms often associated with gender behaviour in public (Herring, 2003). More thorough discussions of gender-related issues in discussion boards are presented in Chapter 5 and Chapter 6.

e) Enhanced Sense of Presence

A key advantage of facilitating online discussions among students that is not present in classroom settings is students' enhanced sense of their own presence and that of their peers and teacher. This sense often encourages students to contribute more actively in their online community. Writer-reader interaction or "the interplay between self and other" (Flottum, Dahl & Kinn, 2006: 160) is an important aspect in any written discourse. This interplay helps understand the influence of the sense of presence on interlocutors' involvement in online interactions.

Research has recently been influenced by the notion of the writer's *authorial presence*, also referred to as *voice* by the Expressivists, and his/her *presence in a social community*, also referred to as *persona* by the Constructivists (Ivanič, 1998). Writer voice marks the "writer's distinctive signature, the individual stamp that her or she leaves on a text" to exercise some sort of personal authority, while *persona* signifies the public identity community members exhibit "in a particular rhetorical stance" and perceived as evidence of *membership* within a social group (Hyland, 2002: 66). The Constructivist view is more concerned with how writers express their 'ethos' and 'insider status' using particular conventions that project their awareness of their community's borders and accepted norms.

Pedagogically speaking, when a new form of literacy is required of students, where they might feel suppressed by community conventions (Ivanič, 1998), they adopt a new kind

of behaviour. They "do not define themselves by only group memberships but in terms of multiple memberships, commitments and experiences which overlap and conflict …In such situations, students are often uncertain about who they are expected to be, and often feel more constructed by their texts than constructing them" (Hyland, 2002: 67). In this case, students project their own stances and their relationships with the audience and subject matter.

Stapleton (2002) divides related studies into *autobiographic*, *semi-ethnographic*, and *linguistic identity* studies. Our study is more concerned with the latter type of studies which examines the construction of presence through different syntactic, lexical and rhetorical choices. Ivanič and Camps (2001) argue that the syntactic, lexical, semantic, organisational and material facets of writing can create and express presence in writing, as students' choices locate them within the social group they belong to.

That said, the following sub-sections review the two aspects of presence in relation to L2 pedagogy:

1. Authorial Presence/Voice

Authorial presence/voice can be used to analyse individualism often neglected in L2 writing instruction (Matsuda, 2001). Writing is considered simple or below average without the existence of authorial presence/voice, as it implies an individual's sound on a page and distinguishes that individual as a writer from other writers (Elbow, 1991). The terms *voice, authorial presence* and *writer identity* are often used interchangeably although Hyland (2001: 70) distinguishes *identity* as being "the various 'selves' writers employ in different contexts, the processes of their connection to particular communities, and their responses to the power relations institutionally inscribed in them". This study, however, uses the three terms interchangeably and follows Matsuda's (2001: 40) argument that they are "the amalgamative effect of the use of discursive and non-discursive features that language users choose, deliberately or otherwise, from socially available, yet ever changing repertoires." Bakhtin also asserts that authorial presence/voice is the individual "perspective, conceptual horizon, intention and world view" (Wertch, 1991: 51) and their "response to other utterances" (Stapleton, 2002: 178), and hence, their voice mirrors the voices of the society. Hyland

(2002) presents Ivanič's (1998) model to classify aspects of writer presence in a given text, as illustrated in Table 2.2 below.

Table 2.2: Ivanič's (1998) Aspects of Writer Presence (*adopted* from Hyland, 2002: 68)

Type	Definition	Example
1. The Autobiographical Self	The self which writers bring to an act of writing, socially constrained and constructed by events in the writer's life-history	A writer's evaluation of his/her own quotes and topics
2. The Discoursal Self	The impression writers consciously or unconsciously convey of themselves in a text	The extent to which a writer takes on the practices of the addressed community, adopting its conventions to claim membership
3. The Authorial Self	The degree of authoritativeness with which a writer writes	The use of personal pronouns and willingness to get behind one's arguments and claims

2. Social Presence

Hyland (2000) considers writing "an engagement in a social process, where the production of text reflects methodologies, arguments and rhetorical strategies designed to frame disciplinary submissions appropriately" (p.12). Thus, writers can use particular linguistic features such as using personal and deictic pronouns, first names or adjectives to establish their sense of social presence within a community (Picciano, 2002).

Two main models have been introduced to analyse presence in online social settings: (a) the '*limited cues*' model focuses on the social and psychological nature of online interactions and proposes that the lack of face-to-face cues often leads to group polarisation and eventually to aggressiveness in online interactions; and (b) the '*social presence'* model, which conversely argues that the lack of f2f cues does not necessitate the loss of personal identity and social context markers (Spears & Lee, 1992). Inspired by Short, Williams and Christie's (1976) work, Riva and Galimberti (1998) define social presence as "the user's perception of the ability of the means of communication to marshal and focus the presence of communicating subjects" (Hyland, 2000: 18). Yates (2001) posits that social presence is derived from "people's presentation of

identity as part of group membership or the taking on of a social role on a social role within the interaction" (p.117).

A number of measures have also been proposed to analyse social presence in interactive responses. Wishart and Guy (2009) present a rubric for evaluating social presence classifying responses into:

- *Interactive responses*: including complimenting, expressing appreciation or agreement, asking unsolicited questions, referring to others' messages, quoting from others' messages and continuing a post.
- *Affective responses*: including expressing emotions, feelings or mood, and use of humour and self-disclosure.
- *Cohesive responses*: including addressing or referring to other students by name, and/or group as *we*, *us*, *our*, and *group*, and salutations.

Likewise, Kramer, Oh and Fussell (2006) propose a number of social presence measures. Participants would be considered aware of their social presence if they were *sharing personal information, recognising group presence, complementing/expressing appreciation, expressing feelings of emotions, stating goal or purpose of participation and expressing motivation about participation*.

Enhanced social presence often entails increased learners' sense of collaborative ownership and knowledge construction, and effective group interaction (Benbunan-Fich, 1999; Benbunan-Fich *et al.*, 2002; Bonk & Cunningham, 1998; Davis & Thiede, 2000; De Laat & Lally, 2004; Hiltz, 1994; Jaffee, 1997; Jeong, 2007; Murphy, 2004; Schellens & Valcke, 2005; Schrire, 2006; Weasenforth *et al.*, 2002).

The learning effects of the social contexts of interactions are notably emphasised in Vygotsky's (1978) *Zone Of Proximal Development theory* (ZPD), which Vygotsky describes as "the distance between the actual development 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" (p.85). A number of other studies have also claimed that discussion boards reinforce Bakhtin's (1981) concept of *multivoicity* (Black, 2005; Kamhi-Stein, 2000b;

Warschauer, 1995). A participant who takes the role of a reader could later become the writer, the listener and the speaker and hence, the discussion becomes 'multivoiced'. In Black's study, students revealed that they appreciated the value of being heard. Black mentions that the concept of "dialogue and discourse … occurs in the social constructivist classroom and has many voices" (Black, 2005: 10). Inherently, students' role in these discussions changes, as they "take more active roles as discussion leaders, who post problems to their classmates, set agendas, summarise posting, and synthesise readings and course discussions" (Weasenforth *et al.*, 2002: 76).

Many studies have also maintained that asynchronous discussion seems to encourage students to be socially interactive, share perspectives and experiences, and build rapport and relationships with teachers and peers (Althaus, 1997; Angeli, Bonk & Hara, 1998; Berge & Collins, 1996; Chong, 1998; Henri, 1992; Kamhi-Stein, 2000b; McDonald, 1998; Schulte, 2003; Zhu, 1996). A number of comparative studies have also claimed that asynchronous interactions are better than f2f and synchronous ones in enhancing social presence (Benbunan-Fich *et al.*, 2002; Hiltz & Wellman, 1997). The semi-permanence of learners' written thoughts, which get 'published' on the discussion boards (Ferris, 1997), seems to encourage them to write accurate and coherent arguments and participate in authentic projects with real audience such as their peers and online personas (Berge & Collins, 1996; Egbert & Hanson-Smith, 1999; Jor, 1995; Olsen & Lepeintre, 1995, Tella, 1992; Tudini & Rubino, 1998; Weasenforth *et al*, 2002). Montero, Watts and Garcia-Carbonell (2007: 576-577) emphasise the importance of authenticity of context and mention that:

> The use of discussion forums in education not only opens a window for students to witness the collaborative research necessary for scientific progress, but also promotes their involvement in discussion threads which produce meaningful communication in real contexts, making discussion forums an active learning tool.

However, Chong (1998), Black (2005) and Nulden (1999) warn that collaborative asynchronous discussion can lead to information overload if group sizes are huge, in which case online discussion may not be very desirable because of "the difficulty of integrating divergent contributions in order to produce the expected outcome" (Benbunan-Fich *et al.*, 2002: 458), which might lead to tension among participants reported in studies of Ware (2005), Belz (2001, 2003) and Warschauer (1999). However, other studies comparing collaboration in f2f and asynchronous discussion have shown that students were equally collaborative in both modes (Ocker & Yaverbaum, 1999). This study believes that online discussion in general can promote collaboration among L2 students due to its dynamic nature unlike the rigidity of teacher-centred in-class activities, as discussed earlier in Chapter 1.

In sum, it seems that the literature on the whole with some exceptions supports the concept that authorial and social presence can be significantly enhanced in L2 settings that facilitate asynchronous discussions.

2.3.4. CONCLUDING REMARKS OF SECTION II

It seems that the use of discussion boards has received support and criticism. On the one hand, Herring (2001) summarises a number of disadvantages of asynchronous discussion such as the lack of immediate response and participants' simultaneous physical presence resulting in loss of human contact. Other disadvantages include the lack of information on participants' situational and demographic contexts resulting in a high degree of anonymity.

Although these criticisms remain valuable, the literature tends to support the value of discussion boards for L2 learners (Beatty, 2003; Herring, 2001). Hill *et al.* (2004) state that "we now have good and ample evidence that students generally learn as much online as they do in traditional classroom environments" (p.13).Hyland (2003) also disputes the criticism and argues that the use of asynchronous communication tools such as discussion boards can result in engaging L2 low achievers in more reflective and interactive ways possibly because the "nonsynchronosity of the communication means that a text can be composed and edited prior to transmission at a more leisurely

pace, rather than being co-constructed by participants... Topics change less rapidly and contributions do not rush past in an incoherent sequence" (p.156). Proponents argue that additional time could help participants produce carefully structured written responses. As Beatty (2003) argues, asynchronous communication "allows the writer to take time to consider and compose a message, and messages can be processed when the interlocutor is ready" (p.63). An added gain for teachers is the facilitation of classroom interaction possibly with real audience and purpose, resulting in students' increased focus on fluency and negotiation of meaning. Students seem to be extra careful when writing in discussion boards because they are simply "writing for public consumption" (Barbour & Collins, 200: 8). It is thus important to emphasise that teachers' roles of mediation in online settings could help implement constructivist teaching approaches by creating an environment for full participation involving students who construct their individual knowledge (Booth & Hulten, 2003; De Laat & Lally, 2004; Jaffee, 1997; Jonassen, 1994; Rogers, 2006; Weasenforth *et al.*, 2002) and who take almost full control of the interaction (Booth & Hulten, 2003; Nunan, 1999a, Schulte, 2003).

Thus, it seems appropriate to conclude that discussion boards could complement L2 instruction and in-class discussion. The next section presents a critical analysis of the key studies that have inspired this study and then provides an overview of its significance and possible contribution to the existing literature.

2.4. SECTION III: KEY STUDIES AND THE SIGNIFICANCE OF THE STUDY

This section presents, in no particular order, the main studies that this study has consulted during the work of the thesis and has used some of their data collection techniques and data analysis tools. These studies are categorised below according to their relevance to this study's research questions:

1. The analysis of the linguistic features of online discourse:

- **Davis and Brewer's (1997)** work *Electronic Discourse: Linguistic Individuals in Virtual Space* is significantly useful in analysing the discourse of electronic conference writing. Both authors investigated spoken and written features in the online discourse using a corpus of discussions between two university campuses for over four years. Using measures such as *type-token ratios*, they found the discourse to be an emergent register with features from both language modes, and the form and nature of this register to be influenced by students' individual idiolects. Instances of authorial and social presence were observed in students' use of certain lexical, syntactic and discourse signals such as the use of personal pronouns, modals, titles, direct address and particular lexical phrases. Similar to Yates' (1996) study (*see* below), Davis and Brewer used these signals to examine students' emulation of and accommodation to peer writing styles. Although I found their work significantly useful, their study focused on the use of asynchronous discussion in L1 settings and did not additionally examine the pedagogical aspects of using discussion boards, which this current study intends to do.

- **Simpson (2003)** examined the discourse of synchronous computer-mediated communication (SCMC) in *Webheads*, an online community for English language students and teachers, to determine the linguistic and discourse resources required for effective interactions and how the online community affects the discourse and linguistic patterns in SCMC texts. Simpson investigated electronic literacy and communicative competence, coherence and cohesion, topic shift, topic drift and conversational floors, and elements of interaction and participation in relation to language learning. Findings showed that discourse patterns in SCMC settings are influenced by the new social context participants are placed in and by the technologies used in addition to participants' schematic knowledge, discourse knowledge and technical knowledge. That said, the discourse analysed was not found to be cohesive because of disrupted turn-adjacency and topic drifts and shifts. Simpson

concluded that collaboration, basic levels of participation and lack of teacher control do not necessarily influence language learning in SCMC settings.

Although the focus of Simpson's study was on synchronous communication while ours is on asynchronous communication, our study considers Simpson's work useful in the guidelines it provides especially in analysing the discourse of online discussion.

- **Yates (1996)** carried out a quantitative discourse analysis study comparing asynchronous discussion on *CoSy*, the Open University's portal discussion to existing corpora of speech and writing in terms of interaction, modality and textuality of CMC. This study is noteworthy in particular for the analysis of *lexical variation* through Type/Token ratios (TTR) and *lexical density* (*see* Chapter 4). Although the findings of his study have been used in a significant number of studies and although our study greatly benefited from its methods of analysis, its use in our study was limited because the three corpora were L1-based while our study is concerned with the analysis of the discourse in asynchronous L2 discussion.

- **Montero *et al.* (2007)** conducted an empirical study analysing modal verbs in asynchronous discussion of Spanish students of English to identify the conversational elements in a 7-year corpus by comparing the results to those found by Yates (1996) and Pique, Posteguillo and Andreu(2002). The analysis showed a high use of modality in the discussions signifying the similarity of the discourse to speech. Other similarities with writing were also found (*see* Section III). This study has contributed a lot to our understanding of means of building a corpus of asynchronous discussion using *WordSmith Tools*, coding the content of transcripts, analysing linguistic features and comparing them to other corpora.

2. The analysis of the pedagogical effectiveness of online discussions:

i. Studies measuring the development of writing aspects (i.e. fluency, accuracy and complexity) in online settings:

- **Sotillo's (2000)** quantitative study compared synchronous and asynchronous discussion in an undergraduate ESL course in order to examine the discourse functions and syntactic complexity of students' postings. Sotillo observed that asynchronous discussion had greater syntactic complexity and length and more sustained interactions than synchronous discussion due to the flexibility of time in these settings. Although synchronous discussion displayed more speech-like discourse functions, asynchronous discussion, which entailed planning and revising, resembled formal written discourse. Sotillo also noted the effect of message size on learner interaction in synchronous discussion, whose rapid conversational nature led to diminished accuracy and syntactic reduction.

  Although I find this study useful because of the various language development measures used (e.g. *error-free clauses/T-units*, *embedded/subordinate clauses*, *T-unit length*) and the statistical analysis methods *(measures of central tendency and t-tests)*, Sotillo only investigated the syntactic complexity and linguistic features of asynchronous and synchronous discussion and disregarded other measures of language development in writing such as lexical complexity, accuracy and fluency, which our study focuses on. Another difference between Sotillo's study and ours is that she did not use a control group that did not use any type of online discussion, which could have provided more validity to the findings. I believe that Sotillo's findings could have been more consistent if qualitative measures were used such as student surveys on overall perceptions and attitudes towards both modes of online discussion.

- **Warschauer's (1996a)** within-groups experimental study of open-ended discussions using repeated-measures compared ESL students' discourse, participation and language complexity (TTR and coordination) in two modes:

face-to-face discussion and asynchronous discussion. Similar to Sullivan and Pratt (1996), Warschauer used four small groups of four students each and found that students' increased participation in the second mode correlated highly with the discomfort they experienced in face-to-face discussion. They felt more at ease in the asynchronous discussion and hence, their participation was high. The study showed more linguistic complexity and increased participation in discussion boards than in f2f discussion. This study is considered one of the pioneering comparative studies in analysing online discussion in ESL settings using valid empirical measures.

- **Chun (1994)** carried out a descriptive study of the discourse of her first-year German classes engaged in synchronous discussion for over two semester period. She compared the ratio of teacher and student output, initiated messages and directionality of contributions and concluded that this type of discussion enhances students' writing skills, and at the same time improves their speaking proficiency. Students' entries ranged from short, simple sentences to long complex paragraphs and many shy or timid students in class progressed into more prolific students on the network. She also observed a rise in learner production and a decrease in teacher-centred discourse. Although Chun's main focus was on the use of synchronous discussion, the measures used to evaluate participation and discourse in L2 settings can be considered significant and pertinent to other types of discussion.

- **Pratt and Sullivan (1994)** conducted a semester-long study evaluating the effects of computer networking on teaching ESL writing by comparing two ESL writing classes, one of which met once or twice a week in a computer-networked classroom. Almost all class discussion was done electronically in one class while the other class was placed in a traditional classroom with oral discussions. Pratt and Sullivan analysed the pre- and post-writing samples of both classes and concluded that online students showed more significant gains in their writing than did their counterparts in the traditional class.

Two years later, Sullivan and Pratt (1996) studied the amount of teacher "talk" and student production in whole-class oral discussion and online discussion using the software *InterChange* in two ESL writing classes taught by the same teacher and found that all their students participated in the online discussion while only 50% of them participated in class discussions. They also observed a radical change in the structures of student/teacher participation in the online discussion as there was no individual dominance of the floor. Also, the online discussion had increased quality and efficiency of peer revision. I consider this study one of the best examples on comparative ESL studies investigating face-to-face and online interactions in small equal-size groups.

- **Abrams(2003)** empirically compared the effect of synchronous, asynchronous and f2f discussion on enhancing the lexical and syntactic complexity of German students' oral language but found no significant differences between the three types of discussion, although synchronous discussion was found to be more effective than asynchronous discussion in encouraging whole-class interaction. However, this study has two flaws: first, the only quantitative measure used was the gain scores on word production while I believe more measures could have provided more valid results; second, no questionnaire or interviews were conducted with the students to examine the possible differences they might have experienced.

- **Davis and Thiede (2000)** involved thirty four TESOL postgraduate students at the University of North Carolina-Charlotte in asynchronous discussions in a linguistics course. Students met online and in face-to-face meetings. However, the research focused only on the style shift of three Asian students. Results indicated that L2 students were aware of changes in their own writing and that they were consciously accommodating to their peers' writing in syntax, lexicon and style.

ii. Studies examining student's online participation and involvement:

- **Lamy and Goodfellow (1999)** examined the asynchronous postings of L2 French learners on *Lexica*, and found that asynchronous discussion promoted learning through three levels of interaction:*(a)* monologic, *(b)* conversational/dialogic and *(c)* reflective. Lamy and Goodfellow concluded that reflective exchanges need to be sustained over time so that effective learning occurs. I find the analysis of these levels useful for the scrutiny of students' contributions on *WebCT*.

- **Weasenforth *et al.* (2002)** analysed 52 postgraduate ESL students' involvement in asynchronous discussion by examining their performance and written assignments in addition to their use of surveys. Felix (2005: 15) states that this study provides "valuable insight into the extent to which asynchronous discussions, as moderated by tutors, might promote various social and cognitive skills as well as address affective factors and motivational differences in the students."

- **Benbunan-Fich *et al.* (2002)** compared the process and content of teamwork and group decision-making in collaborative asynchronous and face-to-face discussion by analysing three variables: discussion breadth (range of useful issues discussed), transfer efficiency and coordination approach. They found that the asynchronous discussion was broader and that students outnumbered their f2f counterparts in submitting more completed reports, although there were no significant differences found between both modes of discussions in relation to information transfer ability.

- **Kamhi-Stein (2000b)** investigated students' participation and attitudes in f2f and asynchronous discussions in a TESOL course using quantitative and qualitative measures (videotapes of f2f discussions, transcripts of asynchronous discussion and interviews with some students). Although no statistical difference were found between the number of turns of non-native and native English speakers, student-student interactions in asynchronous discussion showed high peer support and collaboration and students had positive perceptions about these

discussions, which helped them hear their peers' perspectives. However, although this study is considered reliable in meta-analysis studies, it is only a case study and does not use a control group.

iii. Studies examining the perceptions of participants in online discussions:

- **Johnson (2008)** investigated students' perceptions of their construction of knowledge on discussion boards and found that students appreciated gaining practical experience, expressing personal thoughts freely and enjoying flexible learning and interconnections. Johnson did not, however, find a positive relationship between the number of postings and the academic achievement of high-achievers, which he attributes to the limited number of these postings.

It seems appropriate to repeat here that the findings of these studies varied considerably depending on the objectives set, the types of tasks, duration, and methods used. That said, this study is significant to the existing body of literature in many ways, as discussed below.

2.4.1. CONCLUDING REMARKS OF SECTION III: SIGNIFICANCE OF THE STUDY

Chapter Two began with an introduction to networked CMC and its types and then looked at previous studies using discussion boards in L2 settings and reviewed a number of linguistic and pedagogical variables influencing the impact of this use. Finally, the chapter highlighted the key studies that have inspired our study.

Based on the literature review presented in this chapter, one could conclude that there seems to be enough evidence to support the idea that asynchronous interactive settings are, at worst, equal to f2f ones in influencing language learning (Arbaugh & Hiltz, 2005). What is, then, the significance of our study? What can it add to the literature?

First, there has been limited research examining both the discourse exchanged in asynchronous discussion *and* the pedagogical implications of using it in instructional settings. In the L2 literature, most studies have either examined the linguistic features of the discourse to determine whether it is more akin to speech or writing, a hybrid of both, or a register (*see* Section I), or have analysed its influence on learning outcomes, participation, and perceptions of teachers and/or students. However, there have been calls for shifting to more in-depth research of the medium since "There is so much more going on in the learning setting than what meets the eye when examining the transcripts of an asynchronous conference" (Flynn & Polin, 2003: 3).

Thus, this study aims at providing a holistic account of what happens to students' language learning and interaction while using the discussion board from linguistic and pedagogical perspectives. According to Ortega (1997: 82-87):

> We need research on computers and education that not only extols the pedagogical virtues of computer technology but also determines exactly in which ways language, learning and interaction have been transformed by the use of networked and hypertext technologies in our classrooms.... to study the discourse of language production in classroom discussions and to determine the influence of these discussions on the development of various components of communication competence and the different language skills.

Also, most studies related to language use and discourse functions in online communication have either examined the effects of synchronous discussion (Blake, 2000; Pallettieri, 1997; Simpson, 2003; Sotillo, 2000; Ware, 2005) or email communication (Gonzalez-Bueno, 1998; Ferrera *et al.*, 1991; Kern, 1995b; Tella, 1992). To the best of my knowledge, little research has been done on the effect of using discussion boards on L2 students' discourse (Blanchette, 1999; Warschauer, 1996a; Yates, 1996).

In relation to linguistic output, there is also limited evidence of studies using well-motivated measures of *all* language development aspects of writing (i.e. fluency, accuracy and complexity) in online settings (Murray, 2000). It is not clear how L2 students' involvement in asynchronous discussion affects all aspects of their writing development. Thus, fruitful findings can be obtained from our investigation of these aspects using reliable measures (Wolfe-Quintero *et. al*, 1998).

Another strength of this study is its use of multiple measures. Although most of the studies this study used provided reliable findings, many of them have been criticised for either using qualitative or quantitative research methods (Lowes, Lin & Wang, 2006). Felix's (2005) meta-analysis of over 300 studies in this field concluded that most of them claiming to investigate the effectiveness of online communication use surveys of teacher and student perceptions only. Accordingly, this study combines both qualitative and quantitative research methods.

A major contribution of this study is the absence of research in the Arab world in general and in Bahrain in particular assessing the discoursal features and the pedagogical effectiveness of using discussion boards in L2 courses. I believe that Arab L2 learners have their unique characteristics of learning English, possibly influenced by culture and religion. Murray (2000) emphasises the importance of studies that investigate instructional technologies in L2 settings and states that "few researchers have studied the language of CMC, especially as it relates to English language learning; very little research has been conducted in non-English-dominant countries" (p.398). Levy (1997) also mentions that key researchers "lament the lack of pedagogy in this area" especially in L2 learning settings (p.78).

This study can help L2 researchers and practitioners in Bahrain understand and appreciate the norms of language use developed by online learners whose reliance and participation in the various modes of CMC is developing rapidly. Instructors, especially at the tertiary level, may need to alter their teaching methodologies to cater for the needs of the new generation of students labelled by Hiltz and Goldman (2005) as the 'Gen-Net' (i.e. *Generation of the Internet*).

2.5. CONCLUSION

The main objective of this chapter was to provide an overview of previous studies investigating different aspects of using discussion boards. This overview was divided into these sections: (1) studies examining the linguistic features of the discourse exchanged in asynchronous discussions, (2) studies investigating the pedagogical effects of using instructional technologies in general and discussion boards in particular, and (3) the key studies consulted and the main significance of our work in comparison to these studies.

It could be concluded first that although many studies have either considered the online discourse exchanged in asynchronous discussions similar to speech and/or writing, many consider it a register with unique linguistic features that are also unique to its users' preferences and personal needs. Hence, the claim that the asynchronously-produced discourse is fragmented or erroneous does not seem to be strongly supported. Second, many studies seem to acknowledge the benefits of using discussion boards in pedagogical contexts. These benefits included enhanced learning strategies and critical thinking skills, improved interactivity and participation, reduced communication anxiety and gender differences, and transformed roles of teachers as well as students. However, it was also observed that studies examining these benefits and language development aspects in L2 settings were relatively absent especially those using multiple measures and in relation to L2 Arab learners.

These conclusions are considered the foundation of this study. The different methods used to examine these conclusions and answer the research questions are discussed in the following chapters.

CHAPTER THREE

METHODOLOGY

CHAPTER THREE

METHODOLOGY

3.1. INTRODUCTION

This study's aim is to evaluate the effectiveness of using discussion boards in L2 writing courses delivered to English-major students for the sake of improving L2 instruction at the *UoB*, which, as previously stated in the first chapter, suffers from a number of shortcomings. In short, (1) the use of in-class discussion is minimal, (2) peer interaction is marginal in language classes, (3) instruction is mostly teacher-centred, (4) assigned writing tasks are not sufficient enough even in writing courses, (5) students find writing difficult and problematic, and (6) planning and drafting are not emphasised by teachers. It was also outlined that teachers do not use the advantage of additional and interactive writing available on *WebCT*'s discussion board, but merely use the learning platform to deliver course content and exams (*see* Figure 1.2). Thus, this study examines whether any of the above-mentioned shortcomings could be minimised or eliminated when interactive tools such as discussions boards are used.

Chapter Three provides a detailed description of the methodology with respect to research design, subjects, data collection instruments, analytical framework and data analysis procedures, and validity of findings and research ethics (*see* Section 3.4, Appendix B and Appendix C).

3.2. RESEARCH OBJECTIVES

Inspired by the main studies mentioned in Chapter 2, this study examines a number of areas to provide a holistic overview of using the discussion board experience: (a) the pedagogical impact of using the discussion board on L2 students' writing in addition to an analysis of online participation and the perceived effectiveness of using discussion boards, and (b) the analysis of the linguistic features of the discussion board discourse.

3.3. SUBJECTS

i. Students

The main subjects were 41 2nd and 3rd-year intermediate-level L2 students of mixed gender majoring in English Language Studies and enrolled in two sections of ENGL 205. They met three days a week for fifty minutes in a computer lab during the first semester of the 2008-2009 academic year.

ENGL 205, entitled *Language Development II*, is the fourth course in a series of integrated language courses required to complete the bachelor degree in the English Language Studies programme offered by the Department of English. The course uses *Going for Gold: Upper-Intermediate* as the main textbook and covers 9 units. The main aim of the course is to give practice in the four language skills with an emphasis on discursive and argumentative writing using course-related in-class discussion and entailing open expressions of opinion in writing. Thus, the study's experiment seemed well-suited for the aim of the course as the use of discussion boards to discuss course-related topics required the use of argumentative skills to produce well-organised and well-balanced texts. In order to gain access to the research field, I was granted permission by the University Council to teach two ENGL 205 after submitting a request letter supported with a consent letter from my supervisor, Dr. Gibson Ferguson.

Information about the subjects' demographic background, language background and ability, computer literacy, in-class discussion and anxiety was gathered from a pre-study questionnaire to determine the controlled variables necessary to increase the construct validity of the study. Information on the students is presented in details in the following sections:

- *Demographic Background*

All students were all native speakers of Arabic, and their age ranged between18-24 (*see* 3.1 below). They were 32 females and 9 males enrolled in their 2nd and 3rd year of study.

Table 3.1: Students' Demographic Background (n=41)

Background Information		N.
1. Gender	Male	9
	Female	32
2. Native language	Arabic	41
3. Age	18-20	35
	21-24	6
4. Academic year	1st	0
	2nd	32
	3rd	9

- *Language Background and Ability*

Table 3.2 below shows that students relatively had similar years of learning English. The majority of students rated their language competence as intermediate at grammar, reading and listening while being elementary at speaking and writing.

Table 3.2: Students' Self-Rated Language Background and Ability (n=41)

Background Information		N.
No. of years learning English	11-15	41
English competence *(as rated by students themselves):*		
a. Grammar	*Elementary*	10
	Intermediate	19
	Advanced	12
b. Speaking	*Elementary*	18
	Intermediate	12
	Advanced	11
c. Reading	*Elementary*	9
	Intermediate	20
	Advanced	12
d. Writing	*Elementary*	18
	Intermediate	12
	Advanced	11
e. Listening	*Elementary*	3
	Intermediate	29
	Advanced	9

Although this finding might be an understatement taking students' number of years learning English (at minimum of11 years), this finding supports our argument in the first chapter that most students find writing problematic and also suffer from communication anxiety, thus feel reluctant to participate in in-class discussion.

This was evident in students' responses to the questionnaire's open-ended questions. When asked about the most and least emphasised skills in language courses, they stated that the teaching of grammar was the most emphasised by teachers (n=18, 44%) while writing and speaking were the most neglected ones (n=22, 54%). In contrast, more than 67% of them (n=40) expressed their need to improve their writing and speaking skills. This reveals that students acknowledge their weaknesses and hence, demand more writing and speaking practice in their L2 courses.

- *Computer Literacy*

Students' computer literacy was investigated to inspect their readiness to use instructional technologies and to test their anxiety towards networked CMC. Results showed that almost 90% of them (n=37) had positive attitudes towards using computers or networked CMC tools and that they had good typing abilities. Although the majority mentioned that they often enjoyed communicating with others online (n=37), all of them indicated that using the web and emailing were the most frequent online activities, while using discussion boards and blogs were the least frequent.

Most students had experience with online-delivered courses. More than 60% (n=25) indicated that they had taken online university courses before, although more than 86% of them (n=35) mentioned that they were never involved in any kind of interactive discussion in these courses. This finding gives evidence of what was previously discussed in the first chapter about teachers' underuse of *WebCT* interactive features (*see* Figure 1.2).

- *In-Class Discussion and Anxiety*

In relation to in-class discussion, although almost 68% of the students (n=28) indicated that they often had the opportunity to express their opinions, more than 60% (n=25) stated that they did not get more than one minute per lesson to contribute in the discussions. This is possible since classes are often large with over 30 students in each, so allocating a lot of time for in-class discussion could be considered time-consuming by most teachers. Added to that, about 56% of these student (n=23) indicated that in-class discussion often involves the teacher and a single student instead of interactive peer discussion.

Some other students mentioned that they suffered from communication anxiety in face-to-face discussion. Almost 39% (n=16) expressed that they often felt shy while another 27% (n=11) stated that they felt anxious when asked to participate in the discussions. It is noteworthy that all of these students were female students. This finding expands on the literature review section on gender-related learning differences in conservative societies, in which females are often shy and unwilling to participate in open discussions unlike their male peers. More discussion of this notion is presented in Chapter 7.

ii. **Teachers**

As also discussed in Chapter 2, a number of studies have established the importance of investigating teachers' pedagogical practices and perceived effectiveness of using instructional technologies such as discussion boards. Thus, a number of the *UoB*'s faculty members from different disciplines were randomly selected to complete an online questionnaire and participate in semi-structured interviews (n=30). Table 3.3 below provides the teachers' demographic information.

Table 3.3: Teachers' Background Information (n=30)

Background Information		N.
1. Gender	Male	15
	Female	15
2. College	Applied Studies	1
	Arts	17
	Education	1
	Engineering	4
	Information Technology	4
	Law	1
	Science	2
3. Native Language	Arabic	22
	English	4
	Others	4
4. Age	25-30	2
	30-40	13
	41-50	8
	51-60	7
	+ 60	0
5. Academic Level	Graduate Assistant	5
	Instructor	1
	Lecturer	9
	Assistant Professor	11
	Associate Professor	4
	Professor	0

More details about the selection of these teachers as research subjects are provided in Section 3.5.1.b. below.

3.4. VALIDITY OF RESEARCH PROCEDURES AND RESEARCH ETHICS

Many measures were taken to ensure the use of reliable procedures and the provision of valid findings and to avoid possible bias. These measures, mentioned in each of the following sections and throughout the thesis, include the use of multiple data collection and analysis tools and a number of controlled variables. Added to that, I also used an additional rater, Mr. M. M, who was a *UoB* teaching assistant whom I asked to examine my analysis of the linguistic features, students' online involvement, and language development measures by giving him samples from each analysis instrument. Discussions over cases of disagreement were conducted until a minimum of 80% percentage of agreement was achieved (*see* Appendix N).

This study also maintained the research ethics in many ways. First, the research subjects were mature students between the ages of 18-24 and are thus, considered non-vulnerable. Hence, this study can categorised as being of low-risk. I also considered 2nd - and 3rd -year students better subjects than freshmen as their maturity and enhanced language proficiency can provide more valid findings.

Moreover, informed consent was obtained from the research subjects after being informed of the research objectives and procedures and guaranteed the anonymity of personal data (*see* Appendix B and Appendix C). Participants' names were replaced with pseudonyms and direct and indirect identity indicators enclosed in the discussion threads were removed. Data was further anonymised by removing usernames, ID numbers, signatures and email addresses even those embedded while quoting other participants' posts.

3.5. RESEARCH DESIGN, DATA COLLECTION INSTRUMENTS AND ANALYTICAL FRAMEWORK

As stated earlier in Chapter 1, this study has two main research questions and a number of sub-questions. To answer these questions, multiple quantitative and qualitative research data collection methods and large scale analysis were employed using a number of instruments to enhance the study's validity and reliability and to provide a holistic overview of the different aspects of using discussion boards in the *UoB*'s L2 settings (Ortega, 1997). The following sections present the research questions and the procedures, main data collection instruments and analysis tools used to answer these questions, while secondary instruments are presented in their designated results chapters. The analytical framework is mainly based on the study's research questions investigating the pedagogical and linguistic aspects of using discussion boards.

3.5.1. Question 1: *Does the use of discussion board help to improve students' writing in terms of fluency, accuracy and complexity?*

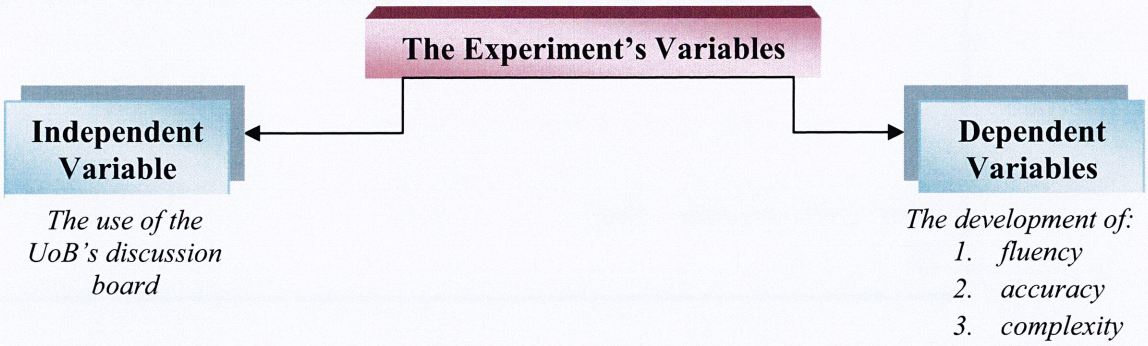
The first main research question empirically investigates the influence of using the discussion board on L2 students' writing development. Thus, a quasi-experimental study was carried out. Students were initially divided randomly into two groups: control group, which received traditional instruction, accessed the course content of ENGL 205 on *WebCT* and engaged in in-class discussion, and the experimental group, which additionally used the discussion board. The control condition was used to allow the comparison between L2 instruction with and without using discussion boards. The groups were randomly selected but the population of both groups was not randomly selected because of registration and students' preferences of lecture time.

Table 3.4: Research Design

No.	Research Procedures	When	Control Group	Experimental Group
1	Course Delivery on *WebCT*	Throughout the semester	☑	☑
2	Pre-Study Questionnaire	Week 1	☑	☑
3	Pre-Writing Test	Week 1	☑	☑
4	Using the Discussion Board (10 weeks)	Week 2-Week11		☑
5	In-class discussion	Throughout the semester	☑	☑
6	Post-Writing Test	Week 12	☑	☑
7	Post-Study Questionnaire	After final grade submission		☑
8	Student Semi-Structured Interviews	After final grade submission		☑

As Table 3.4 above and Figure 3.2 below show, the independent variable of the experiment was the use of discussion boards to supplement traditional instruction and in-class discussion, while the dependent variable was the development of students' writing in these aspects: fluency, accuracy and complexity.

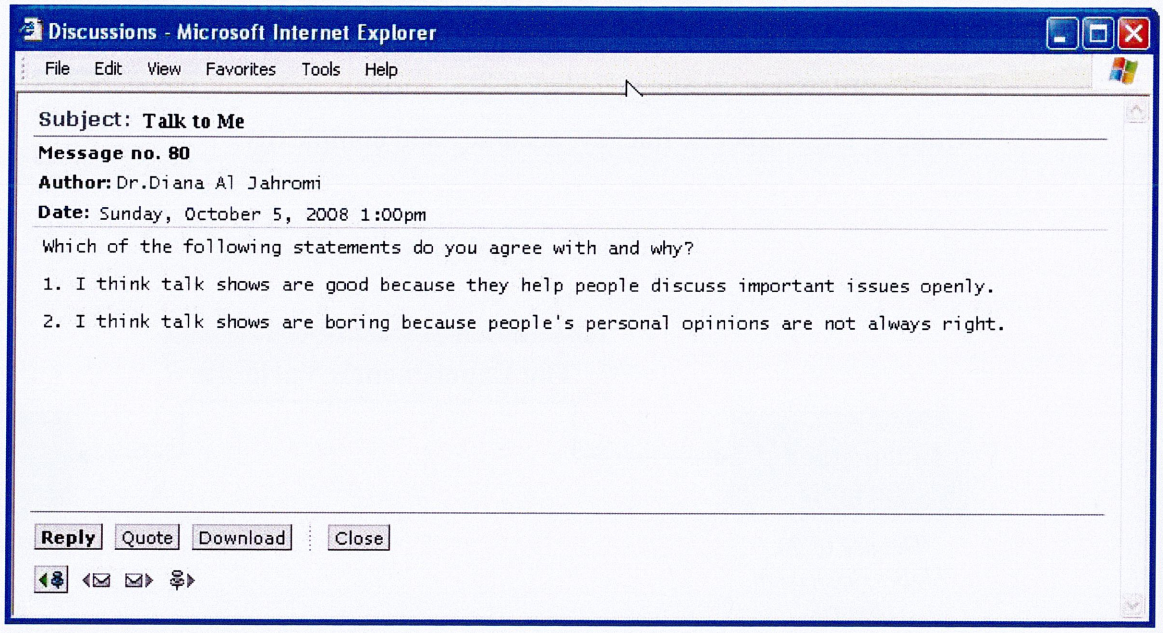
Figure 3.1: Variables of the Experiment



A number of other variables were also controlled to increase the validity of findings. First, students in both groups had the same educational background as they were all 2nd and 3rd-year Bahraini students majoring in English and they had all finished the prerequisites of the course ENGL 205. Another controlled variable was that both groups had the same teacher using the same syllabus, teaching methods, handouts and assessment tools and facilitating in-class discussion. Finally, both groups received course content, tests and announcements of assignments on *WebCT*. The following discussion explains the experiment design in more details:

During the first week of instruction, a lecture was dedicated to providing experimental students with some basic training on using the discussion board and guidelines on the netiquettes of online peer interaction (*see* Appendix D). Following that, experimental students were asked to introduce themselves to their peers in the discussion board to test their readiness to use the technology and to overcome possible access or other technical problems, which were reported to and resolved by the *E-Learning Centre* technicians. During the period between Week 2 and Week 11, a weekly prompt with open-ended questions on a course-related topic was posted at the end of each week in the discussion board for student discussion (*see* Figure 3.2 below). Students' participation in the discussion board lasted for 10 consecutive weeks.

Figure 3.2: A Discussion Prompt



The following transcript extract shows another discussion prompt posted:

Ext.3.1:

Message no. 165

Posted by Diana Al Jahromi on Sunday, November 16, 2008 11:51pm

Subject: Will you get employed?

Unemployment might be a nightmare to any university student. Have you ever thought of what you would do if you were not employed right after graduation? Do you have some alternative plans just in case you weren't employed?

Discuss the topic of unemployment and tell us what you think.

Students had only a week to submit their contributions in the discussion board. Students were instructed to post their initial argument first, read their peers' contributions and then comment on them occasionally. I, as the teacher, provided some feedback and further clarifications and guidance (*see*6.3.2). In the following extract, I provide follow-up guidance to a student on some technical issues:

Ext.3.2:

> Message no. 105 [Branch from no. 96]
>
> Posted by Diana Al Jahromi on Tuesday, October 14, 2008 12:21am
>
> Subject: Re: Speak your mind
>
> It should work if you have the right software like Java. If you're accessing it via *UoB* computers, you will have no problem using it.

The extract below shows further guidance, feedback and corrections provided to students:

Ext.3.3:

> Message no. 121[Branch from no. 120]
>
> Posted by Diana Al Jahromi on Sunday, October 26, 2008 1:42am
>
> Subject: Re: What makes you happy?
>
> Fadheela, you have not told us yet what makes you happy. This is what you should be talking about.

It is noteworthy that experimental students were informed that participation in the discussion board was not to be used towards course grades and that the main aim behind it was providing them with a venue for more writing and open discussions. Writing assessment for both groups was based on the syllabus-related writing assignments (n=5) which were submitted bi-weekly on paper and returned with corrective feedback, as outlined in the course syllabus also being followed by other ENGL 205 instructors (n=2). As part of the course description (*see* Appendix A), both groups were engaged in in-class discussion at the beginning of each lecture for five to ten minutes. Observational notes of three lectures during Week 4 were taken to examine both groups' in-class participation rate and the development of discussion (*see* Appendix O). The choice of Week 4 was intentional so that students in both groups have had enough time to overcome any anxiety caused by the novelty of the course, the teacher or the content, and have got used to the learning environment.

To test the effect of using the discussion board on students' writing, pre- and post-study writing tests were conducted to empirically examine the possible influence of using

discussion boards on students' writing aspects: fluency, accuracy, and complexity. Writing tests form as representative samples of L2 writing levels and the accumulation of this kind of data seeks to provide evidence of students' actual writing knowledge and development. Ellis and Barkhuizen (2005) state that "What learners know is best reflected in their comprehension of input and in the language they produce" (p.2). More discussion in this regard is presented in Chapter 4.

Students in both groups were given a pre-writing test during the first week of instruction to evaluate their initial writing proficiency level. A similar test was given to both groups towards the end of the semester to examine if the use of discussion boards had any significant influence on experimental students' writing.

Both tests were argumentative in genre (*see* Figure 3.3 and Figure 3.4 below). Students were asked to discuss a topic in no less than 120 words. Both tests, which lasted for 45 minutes exactly each, were administered in the classroom. The only difference between both tests was the topic of the discussion. Both writing tests were then typed so that statistical comparisons of significant writing development could be carried out easily.

Figure 3.3: Pre-Study Writing Test

Write in no less than 120 words an organised argumentative composition expressing your own views on the following statement: ***A small circle of good friends is better than one best friend.*** Remember to support your argument with examples.

Figure 3.4: Post-Study Writing Test

Write in no less than 120 words an organised argumentative composition expressing your own views on the following statement: ***Regardless of its disadvantages, the Internet has changed the world around us.*** Remember to support your argument with examples.

A comparative analysis was then conducted between the pre- and post- writing by calculating the means and standard deviation of each aspect of writing development. The data was occasionally divided into equal segments of 100 words for better consistency while testing lexical variation, following Davis and Brewer's (1997) recommendations. The Statistical Package for the Social Sciences (SPSS) was used for measuring the significance of the development of these aspects between both groups using a number of measures.

It is necessary, however, to define first what is meant in this study by language development aspects (i.e. fluency, accuracy and complexity) before explaining the measures employed. Wolfe-Quintero, Inagaki and Kim (1998) define *fluency* as being "related to the production pressures that a language user faces while communicating a message in either writing or speech ... [It] is the automaticity of language" (p.13). The authors define *accuracy* as "the ability to be free from errors while using language to communicate in either writing or speech" (p.33). As to complexity, grammatical complexity indicates that "a wide variety of both basic and sophisticated structures are available and can be accessed quickly" (p.69) while lexical complexity implies that "a wide variety of basic and sophisticated words are available and can be accessed quickly" (p.101), and is manifested in lexical variation, density and richness.

The *clause* was the main measuring unit used (Wolfe-Quintero *et al.*, 1998: 70). Detailed validation on the choice of *clauses* as measuring units is provided in Chapter 4.

Measures for each aspect (*see* Appendix L for a sample) were selected in line with Wolfe-Quintero *et al.* (1998) and Ellis and Barkhuizen (2005) recommendations on the best measures used to analyse learner language. These measures, outlined in Table 3.5 below, are explained in more details in Chapter 4.

Table 3.5: Writing Development Measures Used

Language Development Aspects	Description of Used Measures
Fluency	1. No. of words produced in a specific period of time 2. Clause length: Ratio of words produced per clause (W/C) 3. Error-free clause length: Ratio of words produced per error-free clauses (W/EFC)
Accuracy	1. Error-free clause ratio: total number of error-free clauses divided by total number of clauses (EFC/C) 2. Ratio of errors to the total number of words
Grammatical Complexity	1. Dependent Clause ratio: no. of dependent clauses divided by total no. of clauses (DC/C)
Lexical Complexity:	1. Lexical Variation: Type/Token Ratio (TTR) 2. Lexical Density or Token/Token Ratio: Total no. of lexical words divided by total no. of words (LW/W) 3. Lexical Richness: P_Lex

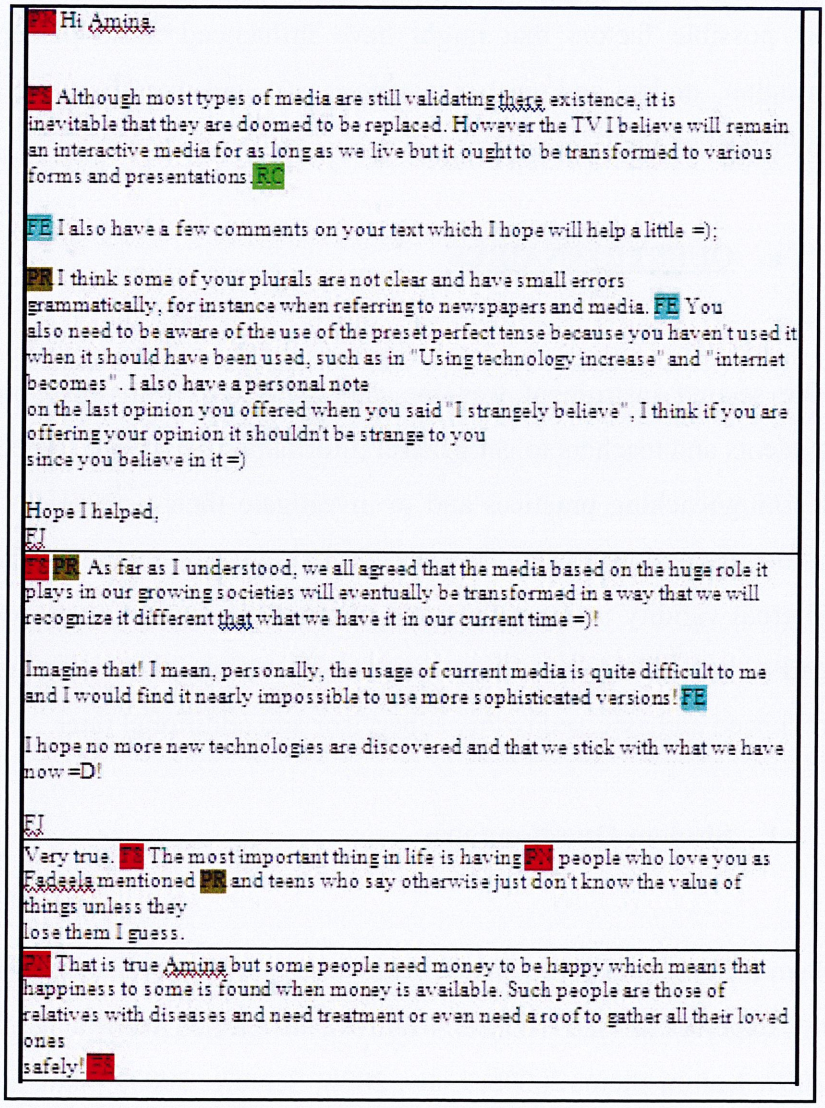
The question concerning whether the use of discussion boards develops L2 writing embraced two sub-questions. The following discussion presents the data collection procedures and data analysis tools employed to answer these questions.

a. ***What levels of student participation are found in the discussion board and what variables affect their participation?***

Students' involvement in the discussion board and factors affecting their online behaviour were analysed using different techniques. Frequency counts were used to examine students' participation rate: the number of posts submitted and received, the number of initial posts and replies sent, and the length of each contribution per student. Content analysis and multiple interaction schemes were used to investigate the most frequent functional moves and students' overall interactive manners in relation to

gender, topic, academic competence and sense of presence. The following figure shows an example of how the data was coded during the content analysis so that frequency counts become easier. More explanation on each measure is provided in Chapter 5.

Figure 3.5: Content Analysis of the Discussions



I also made use of downloadable statistics available on *WebCT* to examine students' access and production rate in the discussion board. Graphical analysis and course statistics provided helped provide a snapshot of students' active or passive participation by showing the hit counts of participation per student and per topic as well as how much time was spent on each thread. This kind of information was used as supporting data.

b. What are the perceptions of the UoB's teachers and L2 students of the effectiveness of using discussion boards?

This question involved investigating students' and teachers' perceptions of the advantages and the disadvantages of using discussion boards in pedagogical settings and the possible factors that might have influenced these perceptions. To answer this question, student and teacher questionnaires and interviews were carried out, as shown in the following discussion.

a. QUESTIONNAIRES

The second instrument was the data collected from questionnaires administered to students and teachers to get general information about the subjects and current language learning/teaching practices and to investigate their perceptions of the effectiveness of using discussion board. The questionnaires were mainly administered online to add internal validity to the results and to avoid the influence of my presence, as a teacher and a researcher, on the responses. Questionnaires were administered after being reviewed and assessed by my supervisor and additional rater.

1. Student Questionnaire

Two different student questionnaires were administered at the beginning and the end of the experiment (*see* Table 3.4 above), developed from a number of studies (Arnold, 2007; Kamhi-Stein, 2000b; Liaw, 2008; Schulte, 2003; Ware, 2005). Two criteria were employed in these questionnaires: no gender restrictions, and full-time study mode.

1.1 Pre-study questionnaire

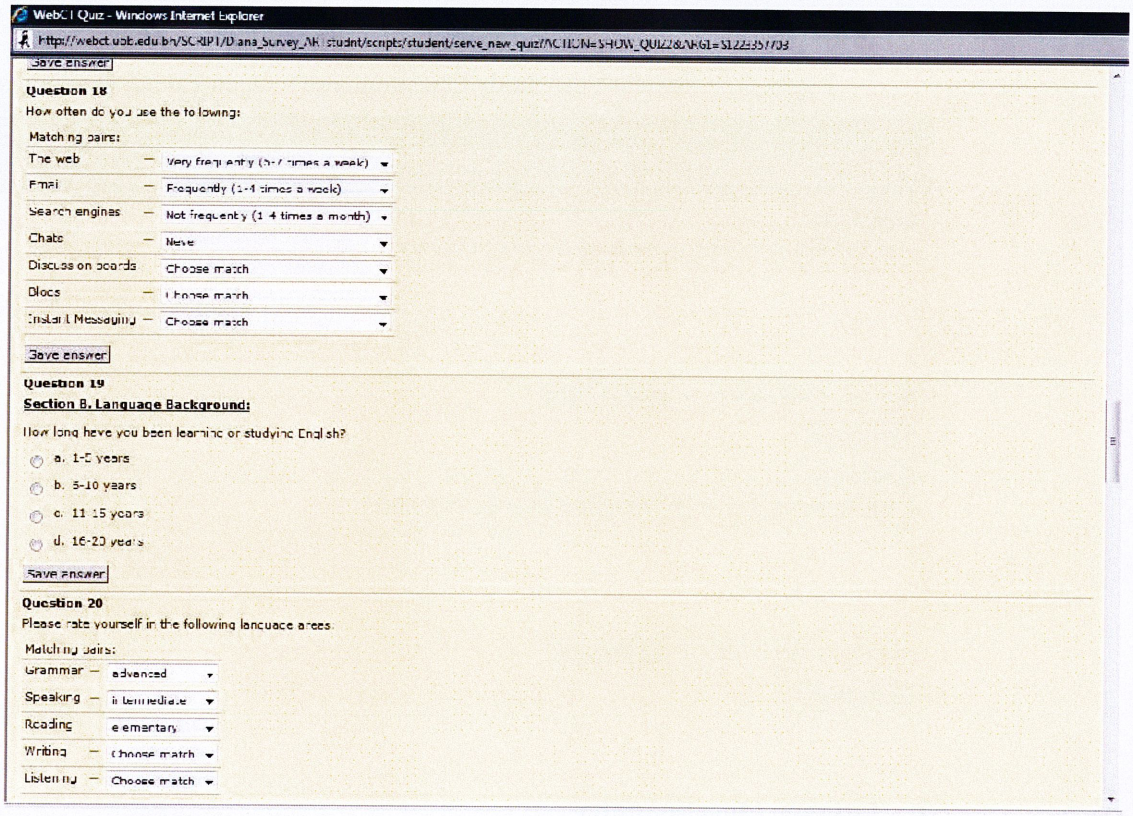
The pre-study questionnaire was first piloted to verify the wording, order and comprehension of the questions and statements and to identify logistical problems such as timing and seating. The following steps were taken:

1. 10 representative students were randomly selected from both groups
2. The questionnaire was administered in two versions: Arabic and English

3. Notes of ambiguous statements or questions were taken
4. Students were asked to identify difficult or ambiguous statements to be discarded or re-worded
5. The time that students took to finish the pilot questionnaire was noted

After revising the questionnaire, the final version (*see* Appendix E) was administered to all students in both groups (n=41) and consisted of 23 questions aiming at gathering demographic information about the subjects, their language ability computer literacy and their perceptions of in-class discussion (*see* Figure 3.6 below). Different question formats were used such as ranking statements, Yes/No questions and open-ended questions.

Figure 3.6: Students' Online Pre-Questionnaire



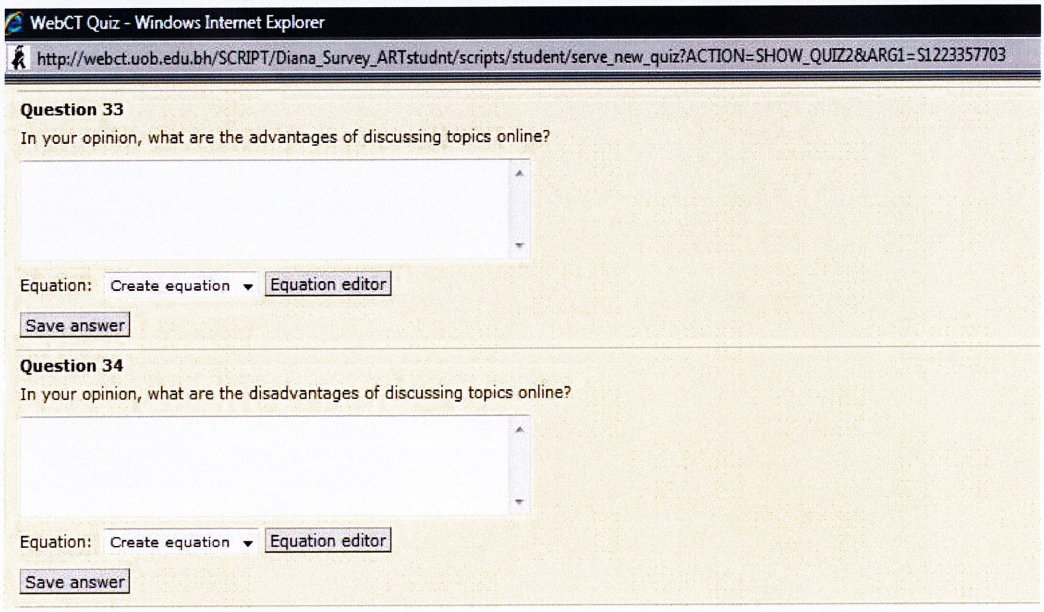
1.2 Post-study questionnaire

After the completion of the course and the submission of final grades, a post-study online questionnaire of 17 questions was administered to experimental students only (n=21) to evaluate their perceptions of the effects of using the discussion board on their

overall L2 learning experience and on their language development (*see* Appendix F). In particular, the questionnaire examined the following aspects: overall satisfaction, participation, peer interaction, student-teacher interaction, feedback effect, learning outcomes, writing development, and differences between online and in-class discussion.

Similar to the pre-study questionnaire, different questioning techniques were used. In addition to 10 multiple-choice questions, students were asked to rank 32 statements based on their perceptions using a five-point *Likert*-type scale ranging from *strongly agree* to *strongly disagree*. There were also 6 open-ended questions (*see* Figure 3.7 below) intended to support the interpretation of the quantitative findings, provide students with a space to further explain and verify their viewpoints with "greater freedom of expression" (Dornyei, 2007: 107), and avoid restricting question types to forced choices (Sit, Chung, Chow & Wong, 2005).

Figure 3.7: Student Post-Study Questionnaire's Open-Ended Questions



2. Teacher Questionnaire

A questionnaire was administrated to the *UoB* instructors who had online courses on *WebCT* to investigate their perceptions on the use and effectiveness of discussion boards (*see* Appendix G). A variety of question formats were used such as Yes/No

questions, statement rating and open-ended questions to increase the internal reliability of the responses (Oppenheim, 1992).

A number of procedures were undertaken to administer the online questionnaire. At first, the *E-Learning Centre* provided me with the names and email addresses of 100 randomly-selected faculty members who had online courses on *WebCT*. I contacted these teachers either by email or phone and explained the objectives of the study. Teachers were instructed to log into *WebCT,* where they would find English and Arabic versions of the questionnaire attached with an introductory letter explaining the purpose of the questionnaire and providing additional information about the scope of the research undertaken. In order to avoid bias caused by confining results to only returned/submitted questionnaires, the non-respondents received a follow-up email or a call three weeks later requesting the completion of the questionnaire.

That said, only 30 full-time faculty members from different disciplines returned the questionnaire, which was considered a relatively good response rate (30%). I assume that there were a number of factors that influenced faculty members' willingness to take part in the questionnaire. First, it is possible that some of the teachers were novices at using online questionnaires. In order to overcome this problem, printed questionnaires were sent to teachers who expressed reservations over online questionnaires (n= 8) using the *UoB*'s internal mailing services. However, only one of these questionnaires was returned. Second, it seems that the majority of teachers could not relate to the topic and purpose of the research study that were explained in the introductory letter (Oppenheim, 1992). According to technicians at the *E-Learning Centre*, most of these teachers merely used *WebCT* to deliver course content only and did not use any of the other functions available such as emails, online quizzes or discussion boards (*see* Figure 1.1), an assumption investigated in the questionnaires and interviews. It is also possible that many of these teachers were unwilling to deliver online courses but were asked to by their superiors. One of the teacher interviewees, who was also a chairperson of a department, mentioned that it was his department's aim to "go 100% online." This kind of vision can pressurise the decision-makers to impose some teaching methodologies such as the delivery of online courses on their subordinates. Hence, it is possible that many of these teachers were unable or reluctant to relate to the research topic.

It is noteworthy to mention that a number of validity checks were carried out. Possible bias in teachers' responses was partially avoided, as most teachers did not personally know me and had no motives to impress or please me with confirming responses that might support my research objectives. The only thing they had in common was using *WebCT* to deliver course content. Also, the fact that they represented different colleges and disciplines and that they ranged in their academic ranks (*see* Table 3.2 above) adds to the validity of the findings (Hartman, Dziuban & Moskal, 2000). The online administration of the questionnaire also diminishes possible bias, as my physical presence could have affected the responses. The researcher's physical presence often threatens respondents' natural behaviour, as McKinnon (1984: 37) argues:

> A common criticism of the field study method is that the researcher's presence in the setting will cause the participants to change their behaviour and conversations and that, as a result, the researcher is not observing the natural setting, but one which is disturbed by the researcher's presence. The field researcher's presence must, by definition, alter the setting since it now contains another person with another role (researcher) (Simon & Burstein, 1985: 246). Observer-caused affects may occur when the role attributed to the researcher by the participants is such that it causes them to alter materially their otherwise "natural" behaviour.

Another external validity measure was the use of two informants: the teachers and the students (Oppenheim, 1992). Some of the questions addressed to the teachers, especially those related to conventional classroom practices, were also addressed to the students to ensure valid responses from both sides. I was also not granted access to teachers' online portals for ethical reasons, so the results of the questionnaire were gathered by the *E-Learning Centre* and handed to me. Hence, I could not influence the teachers' responses in any way.

b. INTERVIEWS

Although questionnaires save time and effort and provide rapid quantitative data, their findings cannot always be reliable and valid. Questionnaires are self-report, have "the

tendency towards a *halo effect*" (Arbaugh & Hiltz, 2005: 88), and are not suitable for a deep investigation of certain phenomena (Dornyei, 2007). Thus, semi-structured interviews were conducted with both instructors and students to increase the convergent validity of the findings and to probe into emerging issues that the questionnaires might not have covered. According to Oppenheim (1992), interviews allow "the respondents to say what they think and do so with greater richness and spontaneity" (p.81).

1. Student Interviews

Semi-structured interviews with 10 randomly-selected students in the experimental group (7 females & 3 males) were conducted in my office. The interviews lasted for 40-50 minutes per student. These interviews were audio-taped after gaining consent from the students. The interview included questions about students' overall perceptions of the experiment and the advantages and disadvantages of using the discussion boards in their L2 course. Yes/No questions were avoided during the interviews so that interviewees were given the opportunity to express more openly without confining their responses to simple short answers (*see* Appendix H for interview questions).

Interviews were used to increase the reliability of questionnaire responses that might have been influenced by the Hawthorne effect (i.e. acting differently when one knows he/she is being studied) or the social desirability bias (i.e. trying to meet social expectations and over-reporting desirable attitudes (Dornyei, 2007). Chapter 6 provides further details in this regard.

Also, a number of measures were used to reduce possible bias in interview responses. First, these interviews were conducted after the submission of the final grades to ensure that students were not providing favourable responses to please me as a teacher or to get better grades. Another measure was the use of delayed interviews as shown below.

- **Delayed Interviews**

In order to reduce the possibility of social desirability bias in students' responses further (*see* Section 6.1), delayed interviews with some of the interviewed students (n=4) were

re-conducted a year after the experiment (January, 2010). The university's Registration Department provided me with these students' timetables and their lecture rooms (n=10). It was the last week of instruction before the final exams, so I visited those students and asked to re-interview them. Only four accepted while the remaining six apologised for being busy with final exams. The interviews were conducted in my office and lasted for 30-40 minutes each. The same questions of the first interviews were addressed to the students.

It is noteworthy that these students were no longer taught by me and hence, they were not obliged to respond favourably to the interview's questions. Thus, these delayed interviews were important because they helped me get more reliable results by cross-checking these students' responses with their previous ones and discarding conflicting ones. That said, most students were found to be confirming their previous responses.

2. Teacher Interviews

Semi-structured interviews were conducted with 6 randomly-selected faculty members who participated in the questionnaires to give more details about their current classroom and online practices and their attitude towards the use of discussion boards (*see* Appendix I). The only selection criterion was having three teachers with negative perceptions of the effectiveness of discussion boards and three other teachers with positive perception based on questionnaire responses. All interviews took place in the teachers' offices and were audio-taped. The interviews lasted for 30-50 minutes per teacher.

3.5.2. Question 2: *To what extent does student discussion board discourse resemble typical written or spoken language?*

The second main question of the research was concerned with the linguistic features of the discourse found in the exchanged discussion between students in the experimental group. The answer of this question involved an investigation of how similar this discourse was to speech and/or writing and whether there were significant occurrences of code-switching or code-mixing.

A main collection instrument was the downloaded transcripts of students' discussion threads on *WebCT* per week (n=10) and per student (n=21). These transcripts were used to expand on a number of research questions examining the linguistic features of the discourse found in the discussions and students' participation and interactivity in these discussions.

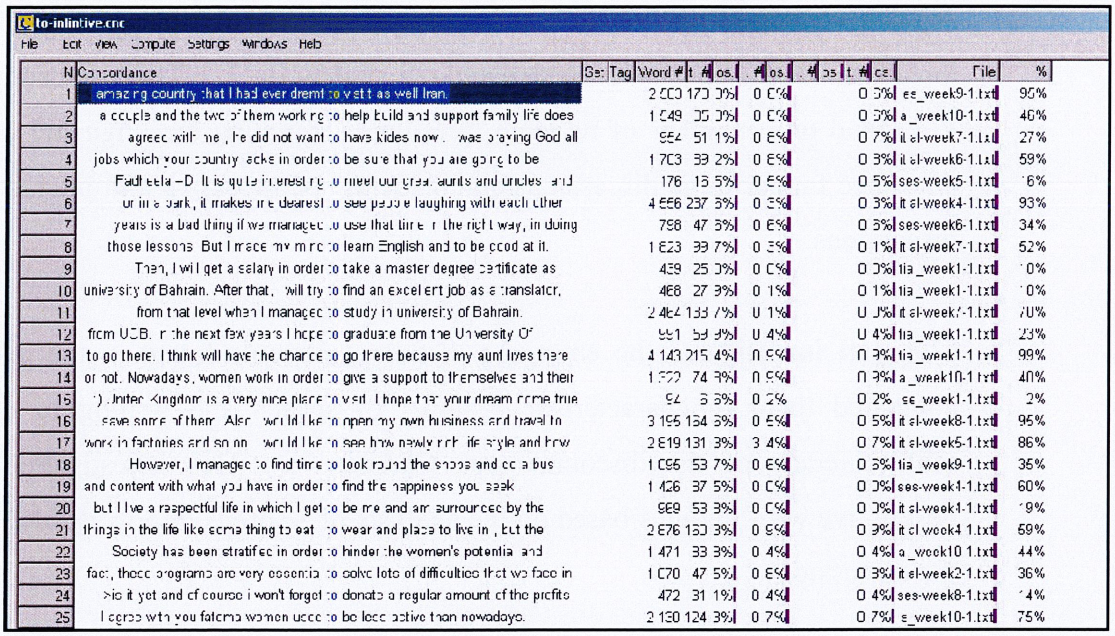
This part investigated the emerging discourse patterns found in the discussions and compared them to characteristic features of speech and writing to decide on the orality/literacy of the discourse (*see* Chapter 7). This investigation was mainly descriptive with findings based on the analysis of a corpus of downloaded transcripts of the discussions.

- **Corpus of the Discussion Discourse**

In order to analyse the linguistic features of the discourse and possibly find instances of code-mixing/switching, the sum of all 10-week-discussion transcripts were gathered, scrutinised and handled in the following way:

- ❖ My discussion questions and comments, repetitions, embedded replies and hyperlinks were removed from the transcripts.
- ❖ Entries were occasionally coded using a number of rubrics and schemes, outlined in more details in Chapter 7.
- ❖ A corpus of 60,000 words was then built using Notepad and *Oxford WordSmith Tools*was used to find frequencies of occurrences and draw comparisons (*see* Figure 3.8 below, Appendix J and Appendix K).

Figure 3.8: An Extract from the Corpus



to-infinitive.cnc

File Edit View Compute Settings Windows Help

N	Concordance	Ge	Tag	Word #	t. #	os.	. #	os.	. #	os	t. #	ce.	File	%
1	amaz rg country that I had ever dreml :o v s t t as well Iran.			2 CC0	17J	0%	0	0%			0	0%	es_week9-1.txt	95%
2	a couple and the two of them work rg :o help t.uild and support family life does			1 049	JJ	0%	0	0%			0	0%	a_week10-1.txt	46%
3	agreec with me , he did not want :o have kides now . was praying God all			954	51	1%	0	0%			0	7%	it al-week7-1.txt	27%
4	jobs which your country acks in order :o be sure that you are go rg :o be			1 7C3	39	2%	0	0%			0	3%	it al-week6-1.txt	59%
5	Fadl eela –D It is qu te interest rg :o meet our great aunts and uncles and			176	15	5%	0	0%			0	5%	ses-week5-1.txt	16%
6	ur in a park, it makes me dearest :o see pe.p.e laughing with each other			4 556	237	5%	0	0%			0	3%	it al-week4-1.txt	93%
7	years is a bad thing if we managec :o use that time r the right way, in doing			758	47	6%	0	0%			0	6%	ses-week6-1.txt	34%
8	those lessons But I mace my m nc :o learn English and to be good at it.			1 623	39	7%	0	0%			0	1%	it al-week7-1.txt	52%
9	Then, I wil get a salary in order :o take a master degree certificate as			439	25	0%	0	0%			0	0%	tia_week1-1.txt	10%
10	university of Bahrain. After that, will try :o find an excel ert job as a translator,			468	27	9%	0	1%			0	1%	tia_week1-1.txt	10%
11	from that level when I managec :o study in university of Bahrain.			2 4E4	133	7%	0	1%			0	0%	it al-week7-1.txt	70%
12	from UCB. n the next few years I hope :o graduate from the University Of			991	54	9%	0	4%			0	4%	tia_week1-1.txt	23%
13	to go there. I think will have the chance :o go there because my aunt lives there			4 143	215	4%	0	9%			0	9%	tia_week1-1.txt	99%
14	or not. Nowadays, women work in order :o give a support to themselves and their			1 332	74	9%	0	9%			0	9%	a_week10-1.txt	40%
15	). United Kingdom is a very nice place :o visit. I hope that your dream come true			92	6	6%	0	2%			0	2%	se_week1-1.txt	2%
16	save some of them Also would like :o open my own business and travel to			3 195	134	6%	0	5%			0	5%	it al-week8-1.txt	95%
17	work in factories and so on would like :o see how newly built life style and how			2 819	131	3%	3	4%			0	7%	it al-week5-1.txt	86%
18	However, I managec :o find time :o look round the shops and co a bus			1 096	53	7%	0	6%			0	3%	tia_week9-1.txt	35%
19	and content with what you have in order :o find the happiness you seek			1 426	87	5%	0	0%			0	0%	ses-week1-1.txt	60%
20	but I live a respectful life in which I get :o be me and am surrounded by the			989	53	8%	0	0%			0	3%	it al-week1-1.txt	19%
21	things in the life like some thing to eat :o wear and place to live in , but the			2 876	150	3%	0	9%			0	9%	it al week4 1.txt	69%
22	Society has been stratified in order :o hinder the women's potential and			1 471	33	3%	0	4%			0	4%	a_week10 1.txt	44%
23	fact, these programs are very essential :o solve lots of difficulties that we face in			1 070	47	5%	0	6%			0	3%	it al-week2-1.txt	36%
24	his it yet and of course i won't forget :o donate a regular amount of the profits			472	31	1%	0	4%			0	4%	ses-week8-1.txt	14%
25	I agree with you fatema women used :o be less active than nowadays.			2 130	124	3%	0	7%			0	7%	s_week10-1.txt	75%

Some of the findings of concord and frequencies were then compared using *Sketch Engine* with major existing corpora to find significance. These corpora were the *British Academic Written English Corpus (BAWE)* and *the British Academic Spoken English Corpus (BASE)* in addition to comparing the results with those of Yates' corpus *CoSy* (1993; 1996). That said, it has to be mentioned here that efforts were also made to compare our findings with those of other L2 corpora for native speakers of Arabic. The only corpus found was *BUiD Arab Learner Corpus* (BALC), an offline corpus consisting of 1,865 texts written by third secondary schools and first university students in the UAE, and complied by two L2 British professors, Dr Mick Randall and Dr Nicholas Groom. Dr Randall was very helpful in providing me with the corpus and with some guidance. However, no comparisons were made because the size of university students' written products in BALC was not big enough to draw significant comparisons with our corpus and the level of their students' language competence, being freshmen, was below our students' level. A number of other corpora related to Arab learners of English were still unavailable for research use during the composition of the thesis.

3.6. CONCLUSION

This chapter has presented the methodology of the research in light of the research questions. The following chapters will present the findings of the study divided into two parts. Part I presents findings on the pedagogical usefulness of using the discussion board: Chapter 4 empirically examines the development of language aspects (fluency, accuracy and complexity), Chapter 5 scrutinises students' online involvement and participation, and Chapter 6 presents students' perceived effectiveness of using discussion boards. Part II (Chapter 7) examines the linguistic features of the discussion board discourse.

It is useful, however, to mention here that the results of this study are not generaliseable to other types of online communication tools or to other L2 contexts although they can be useful to studies of similar scope.

DISCUSSION OF FINDINGS

PART I

PEDAGOGICAL EFFECTIVENESS OF USING DISCUSSION BOARDS

CHAPTER FOUR

QUASI-EXPERIMENTAL STUDY: MEASURES OF LANGUAGE DEVELOPMENT IN STUDENT WRITING

CHAPTER FOUR

QUASI-EXPERIMENTAL STUDY: MEASURES OF LANGUAGE DEVELOPMENT IN STUDENT WRITING

4.1 INTRODUCTION

The chapter aims at answering the first main research question investigating the effects of using discussion boards on the writing development of the experimental group in comparison to the control group (*see* 3.5). Language writing development spans a spectrum of three major aspects: fluency, accuracy and complexity (Wolfe-Quintero *et al.*, 1998). This section starts with a theoretical introduction to the most common measures of these aspects with reference to their use in previous studies. The following section presents the measures used in the study and the rationale behind them. The chapter then moves to empirically examining the significance of writing development in students' pre- and post-study tests using these measures. The chapter ends with a discussion of the results.

A number of studies have examined language writing development of L2 students ranging from unskilled to advanced writers (Hyland, 2002; Jones & Tetro, 1987; Raimes, 1985; Zamel, 1983) in relation to aspects of fluency, accuracy and complexity, which Sotillo (2000) considers significant variables in any SLA-based experimental study. Many studies have also suggested that these aspects are independent and do not often influence one another, as there is often a trade-off between these aspects. Learners tend to prioritise their attention to one aspect at the expense of the others because of the various goals they might have during language production (e.g. speed, lexicalised knowledge or form) (Ellis & Barkhuizen, 2005; Yuan & Ellis, 2003). Hence, development in accuracy, for instance, does not necessarily enhance fluency or complexity but might decrease proficiency in them possibly because learners' attention might be directed to accuracy only (Skehan & Foster, 1997). Wolfe-Quintero *et al.* (1998) correspondingly assert that "the more complex sentences learners try to produce,

the more errors they may be likely to make ... and the more rapidly they produce language that isn't fully automatic, the more errors they may be likely to produce" (p.35).

However, some other researchers argue that these aspects are dependent and inseparable and that they affect each other positively. According to Rocha de Larios, Murphy and Marin (2002), L2 writing development is better understood if writing expertise is viewed not only as a dichotomous fixed set of competencies ... but rather as an evolving continuum of abilities where some aspects are more developed than others due to the influence of factors such as cognitive style, writing experiences or personality traits" (p.27). These propositions of whether writing development of one aspect positively or negatively affect other aspects are examined in this chapter. It is, however, challenging to find the most appropriate measures since different studies have used these measures differently (Ishikawa, 1995; Wolfe-Quintero *et al.*, 1998). They differ in the measures used, their definition of these measures, their variables and their statistical approaches. Table 4.1 below illustrates the most frequently used measures of language writing development and the measuring units.

Table 4.1: Writing Development Measures in Previous Studies

Writing Development Aspects	Description of Most Used Measures
Fluency	1. **No. of words produced in a specific period of time** (Sasaki, 2002) 2. **Clause length: Ratio of words produced per clause (W/C)** (Hirano, 1991; Ishikawa, 1995) A clause "equals an overt object and a finite verb" (Polio, 1997: 139). 3. **Error-free clause length: Ratio of words produced per error-free clauses (W/EFC)** (Ishikawa, 1995) An error-free clause is "a clause in which there is no error in syntax, morphology, or word order" (Foster & Skehan, 1996: 310). 4. **T-unit length: words produced per T-unit** (Hirano, 1991; Ishikawa, 1995; Larsen-Freeman, 1983) A T-unit is a "main clause with all subordinate clauses attached to it" (Hunt, 1965: 20).
Accuracy	1. **Error-free clause ratio: total number of error-free clauses/T-units divided by total number of clauses/T-units (EFC/C or EFT/T)**

(Casanave, 1994; Foster & Skehan, 1996; Ishikawa, 1995; Robb, Ross & Shortreed, 1986; Tapia, 1993; Yuan & Ellis, 2003)

2. **The number of errors per 100 words** (Ellis & Barkhuizen, 2005; Mehnert, 1998; Zhang, 1987)
3. **Ratio of errors to the total number of words** (Chastain, 1990; Kepner, 1991; Kroll, 1990)
4. **Syntactic/Morphological/Lexical errors per clause** (Bardovi-Harlig & Bofman, 1989)
5. **Ratio of correctly-used noun-modifying articles** (Ortega, 1999)
6. **Ratio of correctly-used plurals** (Crookes, 1989; Ortega, 1999)

Grammatical Complexity

1. **Frequency of error-free clauses/T-units** (Chun, 1994; Kern, 1995b; Sotillo, 2000)
2. **T-Unit complexity ratio: no. of clauses divided by total number of T-units (C/T)** (Bardovi-Harlig & Bofman, 1989; Casanave, 1994; Hirano, 1991)
3. **Dependent Clause ratio: no. of dependent clauses divided by total no. of clauses (DC/C)** (Hirano, 1991; Kameen, 1979; Sotillo, 2000)
4. **Adverbial clauses per T-unit (AdvC/T)**
5. **Ratio of Sentence coordination (T/S)** (Ishikawa, 1995; Monroe, 1975)
6. **Passives per T-unit/Clause/Sentence** (Kameen, 1979)

Lexical Complexity

1. **Lexical Variation:**
   a. **Type/Token Ratio (TTR)**: (Fitze, 2006; Ortega, 1999; Scott & Tribble, 1996; Warschauer, 1996; Yates, 1993, 1996; Yuan & Ellis, 2003)
   b. **Ratio of different verb types to the total no. of verbs (VT/V)**
2. **Lexical Density** or **Token/Token Ratio: Total no. of lexical words divided by total no. of words (LW/W)** (Engber, 1995; Halliday, 1985; Yates, 1993)
3. **Lexical Sophistication: Total no. of sophisticated word types divided by total no. of word types (SWT/WT)** (Laufer, 1994)
4. **Lexical Individuality: ratio of lexical words unique to the writer to the total no. of lexical words (ILW/LW)**
5. **Lexical Richness: Lexical Frequency Profile** (Laufer & Nation, 1995), **P_Lex** (Meara & Beal, 2001), **and others** (e.g. *Text_L*, *Textalyser*, etc.)

This study, however, uses the following measures based on Wolfe-Quintero *et al.*'s recommendations and on other reasons presented below.

Table 4.2: Writing Development Measures used in the Current Study

Writing Development Aspects	Description of Used Measures
Fluency	1. **No. of words produced in a specific period of time** 2. **Clause length: Ratio of words produced per clause (W/C)** 3. **Error-free clause length: Ratio of words produced per error-free clauses (W/EFC)**
Accuracy	1. **Error-free clause ratio: total number of error-free clauses divided by total number of clauses (EFC/C)** 2. **Ratio of errors to the total number of words**
Grammatical Complexity	1. **Dependent Clause ratio: no. of dependent clauses divided by total no. of clauses (DC/C)**
Lexical Complexity	1. **Lexical Variation: Type/Token Ratio (TTR)** 2. **Lexical Density** or **Token/Token Ratio: Total no. of lexical words divided by total no. of words (LW/W)** 3. **Lexical Richness: P_Lex** (Meara & Beal, 2001)

As Table 4.2 above shows, all the measures used have the '*clause*' as the central unit of measurement. The analysis of *T-units* was deliberately avoided and replaced with *clauses* for a number of reasons. First of all, T-units are claimed to be unsuitable for short-term studies. Wolfe-Quintero *et al.* (1998)argue that using a measure of accuracy development such as the *ratio of error-free T-units to the total number of T-units*, for instance, is more suitable to capture changes in L2 longitudinal studies rather than short-term ones such as ours. Calculating *the ratio of error-free clauses to the total number of clauses* as in Tapia's (1993) and Ishikawa's (1995) studies could then be more suitable in short studies because clauses are smaller units than T-units and hence, "the domain for achieving 'error-free' status is smaller, and scores should be higher than on other error-free ratios" (Wolfe-Quintero *et al.*, 1998: 47). Ishikawa (1995) correspondingly argues that "examining shorter word strings may enable detection of changes which longer strings would fail to reveal" (p.57). Thus, the clause as a smaller unit seems more suitable as a measuring unit of language writing development in our

study. Also, T-units are not considered suitable for low proficiency levels (Gaies, 1980; Ishikawa, 1995). According to Gaies (1980: 58), "T-unit analysis seems to be useful only *beyond* a certain level of development in the target language."

Although the use of clauses as a measuring unit has received some criticism for only counting certain types of grammatical units and hence, might not mark the actual language learning development, they seem to be the right measures when the main focus is on measuring the correctness quality rather than the quantity of a particular L2 text (Ishikawa, 1995).

In summary, I believe that using the clause as the main measuring unit is most suitable for our study due to its short duration (10 weeks) and its low-proficiency participants (lower-intermediate level). Skehan and Foster (1997), however, caution that a proper definition of what makes a clause is especially necessary when using error-free clauses (EFCs) as measures in finding differences in experimental studies. In defining a clause, this study follows Polio's (1997) description that a clause "equals an overt subject and a finite verb" and consider that "In a sentence that has a subject with an auxiliary verb, [we] do not count that subject and verb as a separate clause" (p.139).

Also, errors as salient features of L2 writing have been differently defined and identified in different studies possibly because of the varied but subjective intuitions of the researchers. Thus, it is important to specify what definition of an 'error' in error-free clauses I follow. Carlisle (1989) defines an error as "any deviation from the written standard" (p.264), while Lennon (1991) describes it as "a linguistic form or combination of forms which, in the same context and under similar conditions of production, would, in all likelihood, not be produced by the speaker's native speaker counterpart" (p.182).

In identifying error-free clauses, this study looks at surface errors of grammar, morphology and lexical choice (*see* Appendix M for a full description of the errors identified). In particular, clauses with deviations from standard word form, word choice, word order, subject-verb agreement, verb tense, verb voice, articles, punctuation, capitalisation, and complete sentences were considered erroneous (Polio, 1997; Sotillo, 2000).

The following section presents a thorough overview of the three aspects of language development with particular reference to the measures used in this study.

4.1.1 MEASURES OF FLUENCY

Fluency reveals the degree to which L2 writers are composed during language production (Schmidt, 1992; Wolfe-Quintero *et al.*, 1998) and is measured by the length of the linguistic output (Kol & Schcolnik, 2008). Fluency in speech refers to "the production of language in real time without undue passing or hesitation" (Ellis & Barkhuizen, 2005: 139). The most frequently used measure for spoken fluency is the rate of production in pressurised spoken settings conditioned by learners' unconscious attention to language and by their reliance on memory-retrieval and other high-level cognitive procedures such as sequence-chunking (Ellis, 1997; Logan, 1995; Schmidt, 1992).

Written fluency, however, is defined as "the rate of production of text" (Chenoweth & Hayes, 2001: 81) and is more difficult to measure than spoken fluency. Wolfe-Quintero *et al.* (1998) consider L2 writers fluent if they are able to produce written output "rapidly, coherently, appropriately, and creatively" (p.13). However, I believe that coherence and appropriacy overlap with measures of accuracy and complexity and hence, they should be disregarded.

A number of frequency or ratio fluency measures have been identified in writing development studies "ranging from counts of the number of words, clauses, sentences, or T-units in a text, to averages of the number of words per clause, per sentence, per T-units, per error-free clause, or per error-free T-units in a text" (Chenoweth & Hayes, 2001: 82). Wolfe-Quintero *et al.* (1998) suggest measuring written fluency by counting the number of words and structures produced within a specific period of time, and then the greater the number of words and structures used, the more fluent a writer is. However, they argue that ratio measures of fluency such as *words per clause* (W/C) and *words per error-free clause* (W/EFC) better examine language development than frequency measures.

This study calculates the total number of words produced by experimental and control students in the pre-and post-test within a particular period of time (45 minutes). According to Wolfe-Quintero *et al.* (1998), "If writing is done under timed conditions, the sheer number of words becomes a rate measure" (p.14). The study also measures the ratio of the *total number of words per clause* (W/C) and the *total number of words per error-free clause* (W/EFC).

4.1.2 MEASURES OF ACCURACY

Wolfe-Quintero *et al.* (1998) define accuracy in L2 as "the ability to be able free from errors while using language to communicate in either writing or speech" (p.33) while Skehan (1996) states that accuracy refers to "how well the target language is produced in relation to the rule system of the target language" (p.23).

Analysis of accuracy development has long inspired SLA and L2 writing pedagogy and assessment research (Polio, 1997; Sotillo, 2000), investigating how a learner's accuracy might change under new or modified conditions such as planning time (Crookes , 1989), L1 translation (Kobayashi & Rinnert, 1992), timed production of writing (Kroll, 1990), or teaching methodologies (Ishikawa, 1995). Also, studies have used different measures

depending on their research questions. Unfortunately, Ellis and Barkhuizen (2005), Foster, Tonkin and Wigglesworth (2000) and Polio (1997) criticise most of these studies as having failed to provide proper definitions of their measuring units or detailed discussions of their methods of analysis.

Polio (1997) in particular divides accuracy-related research into three categories according to the measures used: *holistic scales* (e.g. Hamp-Lyons & Henning, 1991), *error-free units* (e.g. Casanave, 1994; Ishikawa, 1995), and *number of errors with or without the classification of errors* (e.g. Frantzen, 1995; Kepner, 1991; Kroll, 1990; Zhang, 1987). The latter category of studies has handled the types of errors in two different ways (Polio, 1997). The first set of studies examined errors *without* classification (Carlisle, 1989; Ellis & Barkhuizen, 2005; Fischer, 1984; Kepner, 1991; Mehnert, 1998; Zhang, 1987). Zhang's study, for instance, investigated the cognitive complexity of L2 questions and responses of university students by counting the number of errors per 100 words (including all punctuation, spelling, grammatical and lexical errors) while Kepner counted surface-level errors of English university students of Spanish. Other studies, however, analysed the number of errors *with* classification of error types. Kroll (1990) compared ESL in-class and at-home compositions using 33 error types and calculated the ratio of words to the number of errors but found no significant differences. Chastain (1990) calculated the ratio of errors to the total number of words when comparing two essays of American students of Spanish but found no significant differences.

Calculating *the number of errors per 100 words* and the *ratio of error-free clauses to all clauses* (EFC/C) are considered two of the most widely used measures of accuracy with "the most noteworthy significant results" (Wolfe-Quintero *et al.*, 1998: 37). According to Perkins (1980), "Objective measures which count error-free units are very good discriminators" (p.64).

Investigating also *the ratio of EFTs to the total number of T-units* (EFT/T) was carried out by Robb, Ross and Shortreed(1986), Casanave (1994) and Ishikawa (1995) while

EFC/C was used as measures by Foster and Skehan (1996) and Ishikawa (1995). Casanave (1994) counted as errors wrong articles, prepositions, word endings, tense, and lexical usage but ignored spelling and typing mistakes. Ishikawa (1995), who calculated both EFCs and EFTs in addition to other measures to compare narrative compositions between two groups of low-proficiency EFL students, did not also count punctuation errors except when affecting sentence boundaries. However, the use of this approach that focuses on the production of error-free structural units such as clauses, T-units, and sentences (Henry, 1996; Hirano, 1991; Larson-Freeman, 1983) mainly depends on how an error is defined in each of these studies. All of these studies counted spelling, punctuation, morpho-syntactic and lexical errors during their analysis of error-free T-units. As a reaction to criticism of the first approach, other researchers have suggested the analysis of the number of particular errors in a structured unit (e.g. words, clauses or T-units) (Bardovi-Harlig & Bofman, 1989).

This study uses a number of measures of accuracy development so that more reliable findings are attained but does not classify error types for it is more concerned with the possible change in the overall number of errors produced by students. Accuracy development is measured by first counting the *ratio of error-free clauses to the total number of clauses* (EFC/C) because of the objective results this measure is claimed to provide (Wolfe-Quintero *et al.*, 1998). Another measure used is *the ratio of the number of errors divided by the number of words* per student (Polio, 1997). The reason for using this additional measure is because low-achieving students may produce strings of words which might not be long enough to form a clause; hence using the EFC/C alone might not fully show language development. Thus, dividing *the total number of errors by the total number of words* may demonstrate how students progressed from the smallest units such as words and phrases to longer ones such as clauses and T-units (Ellis & Barkhuizen, 2005; Ishikawa, 1995).

As in Carlisle's (1989) study, I examined the frequency of these errors for each student: "mechanical errors (punctuation and capitalization), spelling errors, word choice errors, agreement errors, syntactic errors and tense shifts" (Carlisle, 1989: 274). I also used

Polio's (1997) error-classification system adopted from Kroll's (1990) classification (*see* Appendix M).

4.1.3 MEASURES OF COMPLEXITY

Complexity refers to the "extent to which learners produce elaborated language" (Ellis & Barkhuizen, 2005: 139). According to Skehan (1996), complexity reveals how prepared L2 learners are to take risks and to restructure their interlanguages (*see* Chapter 2 for some literature review). Complexity is divided into grammatical complexity and lexical complexity, each with different measures of development:

4.1.3.1 Grammatical Complexity

Sotillo (2000) defines grammatical complexity as "the ability to produce writing that shows how ideas and large chunks of information are represented with the use of subordination and embedded subordinate clauses" (p.84).

Studies in relation to the grammatical complexity of online communication have used different measures and found different results. Warschauer (1996), for example, compared the grammatical complexity or the 'coordination index' with the lexical range/variation (type/token ratio) to compare language production between face-to-face and online discussions, and found that both measures were significantly high in online discussions. On the other hand, Chun (1994) and Kern (1995b) found that learners produced simple structures in these discussions. Also, Kol and Scholnik's (2008) study of asynchronous EAP discussions showed that these discussions did not significantly improve grammatical complexity.

Ellis and Barkhuizen (2005) provide a comprehensive list of various grammatical complexity measures used in different studies: *length of T-units or error-free T-units* (EFTs) and *amount of subordination* (Foster & Skehan, 1996), *use of particular linguistic structures such as modality and verb forms* (Yuan & Ellis, 2003), and *the*

mean number of verb arguments (Bygate, 1999). However, some grammatical complexity measures such as the *length of T-units or error-free T-units* do not always provide a full review of the whole writing process. EFTs in particular "may hide the fact that excessive coordination within a sentence might be involved, in which case the learner avoids sentence embedding altogether" (Sotillo, 2000: 85).

Thus, this study measures grammatical complexity by calculating *the ratio of the total number of dependent clauses divided by the total number of clauses* (DC/C), which Wolfe-Quintero *et al.* (1998) consider one of the two best measures of grammatical complexity in addition to *total number of clauses divided by total number of T-units* (C/T), which this study did not use because our measuring unit is limited to the *clause* as mentioned earlier. Adverbial, adjectival and nominal clauses, as in the italicised parts in the following examples, were identified in the data and then divided by the total number of clauses (e.g. I wonder *whether* he has passed the test. I really hope *that* he has *although* I don't think *he* has). The more the average dependent clauses per clause, the greater the complexity of a learner's output is expected to be (Hirano, 1991; Wolfe-Quintero *et al.*, 1998).

4.1.3.2 Lexical Complexity

Development of learners' lexical knowledge has recently attracted a number of researchers' attention (Laufer& Nation, 2004; Nation, 2009; Read, 2000). While old research studies were more concerned with the estimation of vocabulary size, current studies are more interested in measuring the lexical complexity using frameworks of different traits and dimensions.

Lexical complexity is also considered one of the best language development measures and a clear indicator of a writer's adoption of discourse conventions (Nation, 2001). A positive correlation between lexical variation and writing quality has been shown in a number of studies (Astika, 1993; Engber, 1995; Laufer, 1994), most of which posit that "lexical quality and writing quality are interconnected" (Laufer, 1994: 21). Lexical complexity marks the variety and sophistication of words used and is reflected in L2

writing in two dimensions: range (lexical variation) and size (lexical sophistication of produced lexis) (Wolf-Quintero *et al.,* 1998).

The complexity of lexis has also been widely researched by Halliday (1985) and his Neo-Firthian followers. Halliday's *Systematic-Functional Linguistics* (SFL) stresses the consideration of function and semantics in understanding human language and the importance of acknowledging the social context obtained "through a systematic relationship between the social environment on the one hand, and the functional organization of language on the other" (Halliday, 1985: 11). SFL-oriented approach considers three aspects of language: 1. *textual*, measured by *type/token ratio* and *lexical density*; 2. *interpersonal*, measured by the use of speech-functions, personal reference, discourse markers, exchange structure, involvement and detachment (*see* Chapter 5), and 3. *ideational*, measured by the use of modality to refer to propositional content (Yates, 1996).

This study believes that it is best to use more than one measure to analyse the lexical complexity of students' linguistic output based on Nation's (2009) recommendation that it is preferable to use several measures in experimental studies of lexical development. Bell (2003) also states that there are no particular lexical complexity measures that "can serve all purposes" (p.220). Thus, this study evaluates lexical complexity by measuring *lexical variation* (LV) through the calculation of type/token ratio (TTR), and measuring *lexical density* (LD). TTR shows the average use of vocabulary and measures lexical diversity (Davis & Brewer, 1997), while lexical density looks quantitatively at the manner in which lexical items were employed. Added to that, *P_Lex* was used to measure possible significant changes in students' lexical richness. These measures are discussed in detail in the following sub-sections.

a. Lexical Variation (LV): Type/Token Ratio (TTR)

Type-token ratio (TTR), one of the best measures of lexical shifts and variations in any writer's discourse (Wolfe-Quintero *et al.*, 1998), is often used to analyse each learner's

overall linguistic behaviour and mark their "voiceprint" or discourse signature (Davis & Brewer, 1997: 82). TTR measures *the number of different words in a text as a percentage of the total number of words* within that text. If TTR is high, it means that "a more diverse form of language is being employed" (Baker, 2006:52). Davis and Brewer (1997) state that if significant changes in the TTR are found, this implies a clear shift in the individual's writing style or register. If no significant changes are found, the discourse is possibly be less lexically diverse and more repetitive.

Many studies using TTR to evaluate the lexical complexity of online discussions have found different results. Yates (2001) found that the type/token ratio of the online discourse found in *CoSy* discussions (TTR= 0.590) was more akin to that found in the written corpus *LOB* (TTR=0.624) than the spoken corpus *London-Lund* (TTR=0.395). Yates considers these findings "a product of the medium itself, and the opportunity it allows for longer gestation over the content of utterances" (p.107). Similarly, Montero *et al.* (2007) studied modality in asynchronous discussions and found a TTR of 0.74, which reveals high lexical variation.

However, although TTR seems to be the most straightforward measure of lexical complexity, it is sometimes considered flawed because its results can vary depending on the length of the text (Nation, 2009). When words are added to the sample, the number of tokens differs but not the number of types if these are not new words. Standardisation of sample size is one of the approaches used to solve this problem and counting the number of types produced over a particular span of time is another way, although the latter method overlaps with measures of fluency mentioned earlier. Also, standardisation of the tokens' size is not feasible with a small-sized data and can lead to wasting any remaining data (Cumming, Kantor, Baba, Erdosy, Eouanzoui & James, 2005). The second weakness of TTR is that it fails to distinguish word classes or types. Lexical items (content words: e.g. *language, beauty, study*) and grammatical items (e.g. *I, of, and*) are not differentiated and hence, does not truly reveal whether the discourse in hand is more speech-like for having increased grammatical items or more written-like for having increased lexical items. Yates (1993) suggests limiting the comparison of type/token ratio to lexical/content items only. Lexical variation measured by type/token

ratio (TTR) also depends on a number of sociolinguistic aspects and hence, does not fully measure the textuality of a given discourse.

That said, TTR remains one of the best measures that show lexical variation in L2 students' writing once it is standardised. Davis and Brewer (1997) used chunks of 50 words to calculate TTR for each student to evaluate the influence of online discussions on their lexical complexity and found significant results. Also, using a reliable complementary measure such as calculating the lexical density of the discourse to determine how dense a text is with information (Yates, 1996) in addition to other measures alongside TTR helps ensure the provision of sound results (Davis & Brewer, 1997; Wolf-Quintero *et al.,* 1998).

b. Lexical Density (LD)

Token/Token ratios such as lexical density are useful tools to identify the lexical properties of writers as a high lexical density score often signifies greater language development of lexicon (Wolfe-Quintero *et al.*, 1998). Lexical density (LD) is defined by Halliday (1989) as "a measure of the density of information in any passage of text, according to how tightly the lexical items (content words) have been packed into the grammatical structure" (p.10) or simply as "the number of lexical items as a proportion of the number of running words" (Halliday, 1985: 64).

Halliday (1992: 60-80) also makes two claims in relation to lexical density: (a) written language's lexical density is double that of speech (between 1.5 and 2 in speech versus between 3 and 6 in writing), and (b) there is a higher proportion of lexical items per clause in written language than speech. Halliday computes lexical density by dividing the *total number of lexical items by the total number of lexical and grammatical items*. He gives the following examples to illustrate the computation of lexical density(Halliday, 1985):

- If you invest in a rail facility, this implies that you are going to be committed for a long time. *(7 lexical items and 13 grammatical items; Lexical density=0.35)*
- Investment in a rail facility implies a long term commitment. *(7 lexical items and 3 grammatical items; Lexical density=0.7)*

The first sentence, more likely to appear in speech, has less lexical density because the grammatical words are double the lexical ones, while the second sentence has higher lexical density because of the increased use of lexical words.

Yates (2001) also argues that this measure quantitatively captures the difference between written and spoken productions of language. He found that the mean lexical density of his online corpus (=0.492) was closer to the written corpus *LOB* (=0.503) than the lexical density found in the spoken corpus *London-Lund* (=0.422). Nevertheless, Yates argues that lexical density varies according to the types of online interactions involved, the user's experience with these types and the social context.

c. Other Measures of Lexical Complexity

A number of other measures have been proposed to particularly evaluate learners' lexical richness, which Engber (1995) argues to affect the overall writing quality. The measure that Laufer and Nation propose and consider reliable is the *Lexical Frequency Profile* (LFP), which shows the "relative proportion of words from different frequency levels" and which is expected to correlate with students' vocabulary size once placed in a situation that requires them "to make use of what they know" (Laufer & Nation, 1995: 307).

Another more recent measure is *P_Lex* proposed by Meara and Bell (2001). It is claimed to be more effective than LFP in assessing L2 learners' short texts (Espinosa, 2005) as it divides the written text into sections of 10 words each then counts the frequency of 'difficult' words in each section. *P_Lex* considers 'difficult words' "any word that is not found in a short list of high frequency words" (Meara, 2001: 1). This study uses *P_Lex* to add to the reliability of the results and considers it suitable for its data since all students' written texts in the pre- and post-tests exceed 120 words each, in which case *P_Lex* can work effectively (Espinosa, 2005).

Having established the theoretical background and rationale behind the measures used, the following section presents the main findings of the study in relation to the possible influence of using online discussions on enhancing the fluency, accuracy and complexity of students in the experimental group.

4.2 FINDINGS

Chapter Three detailed the characteristics of the pre- and post-tests I administered to the experimental group, which used the discussion board, and the control group, which did not use the discussion board. I also carried out some preliminary examination of possible differences between the two groups at the beginning of the semester to eliminate the measures in which significant changes were found between these groups. Results are presented in the section below.

4.2.1 PRELIMINARY SUBJECT POOL

In order to decide whether there were significant differences between the control group and the experimental group before the experiment, this study compared measures of central tendency (mean and standard deviation) and performed independent sample *t*-tests on all the language development measures, which were calculated on the data obtained from the pre-test using SPSS with an alpha level of *0.05* as the significance level.

Results presented in Table 4.3 below indicate that there were no significant differences for most of the measures between both groups although the scores were widely distributed, which indicates the variability between members of both groups. However, there was a significant difference between both groups in respect to one fluency measure: the total number of words to the total number of clauses (0.000* at $p<.05$). Thus, this measure was excluded in the post-test analysis.

Table 4.3: Writing Development Difference between Control Group and Experimental Group in the Pre-test

Aspects of Writing Development	**Measure**	**Group**	$\bar{x}$	**SD**	***t*-test**	***p*<.05**
Fluency	No. of words in 45 minutes	*Experimental*	189.6	8.3	-.987	.330
		Control	202.3	9.9		
	W/C	*Experimental*	9.6	1.02	4.296	.000*
		Control	8.4	.77		
	W/EFC	*Experimental*	44.9	38.9	.666	.509
		Control	38.3	19.6		
Accuracy	EFC/C	*Experimental*	.345	.211	1.315	.197
		Control	.271	.122		
	Errors/No. of Words	*Experimental*	.129	.064	-.353	.726
		Control	.123	.048		
Grammatical Complexity	DC/C	*Experimental*	.233	.079	.861	.395
		Control	.219	.088		
Lexical Complexity						
1. Lexical Variation	TTR	*Experimental*	53.9	5.65	.256	.799
		Control	53.4	6.01		
2. Lexical Density	L/W	*Experimental*	75.6	5.87	-.962	.342
		Control	77.3	4.83		

*$\bar{x}$ =mean, SD=standard deviation, t-test=values from t-test, p<.05=probability level, *=values are significant at the level of 0.05*

4.2.2 RESULTS OF WRITING DEVELOPMENT ASPECTS

Independent sample *t*-tests were performed to determine if there were significant differences in the post-test between the control group and the experimental group after the use of online discussions. The pre-test and post-test were both argumentative and

had the same prompt style but with a different topic presented for discussion. Table 4.4 below demonstrates the overall results found.

Table 4.4: Writing Development Difference between Control Group and Experimental Group in the Post-test

Aspects of Writing Development	**Measure**	**Group**	$\bar{x}$	**SD**	***t*-test**	***p*<.05**
Fluency	No. of words in 45 minutes	*Experimental*	246.3	59.8	.447	.657
		Control	237.6	61.3		
	W/EFC	*Experimental*	42.02	35.7	.288	.292
		Control	57.45	53.2		
Accuracy	EFC/C	*Experimental*	.389	.220	1.94	.61
		Control	.273	.141		
	Errors/No. of words	*Experimental*	.113	.065	-2.12	.042*
		Control	*.122*	.064		
Grammatical Complexity	DC/C	*Experimental*	.359	.092	2.82	.007*
		Control	.281	.077		
Lexical Complexity:						
1. Lexical Variation	TTR	*Experimental*	57.9	7.04	2.028	.049*
		Control	53.9	5.85		
2. Lexical Density	L/W	*Experimental*	83.5	3.53	3.812	.001*
		Control	77.7	5.60		

*$\bar{x}$ =mean, SD=standard deviation, t-test=values from t-test, p<.05=probability level, *=values are significant at the level of 0.05*

The table above shows that there were some significant statistical differences in the mean scores between the experimental and the control groups in five of the eight measures tested. Students who were engaged in interactive online discussions seem to have experienced positive changes in their accuracy, grammatical complexity and

notably in their lexical complexity, while no significant changes were found in their fluency. Reasons behind the changes found are discussed below.

4.3 DISCUSSION OF THE RESULTS

Overall findings revealed that students showed no development in the different measures of fluency (P=0.66 and 0.29). Students' accuracy significantly developed only in one of the two measures used: *the ratio of the number of errors to the total number of words* (P=0.042). However, significant differences were found in relation to complexity. The grammatical complexity of students in the experimental group was found to have highly developed (P=.007*). In addition, while some significant changes were found in experimental students' lexical variation or TTR (P=.049),highly significant differences were found at the level of lexical density between the experimental group and control group in favour of the use of discussion boards (P=.001* for L/W). These results are thoroughly discussed and justified in the following section. It is noteworthy to mention here that paired sample t-tests were mainly used to compare between the two groups and draw conclusions about the use of the discussion board according to the levels of difference between both groups. Independent sample t-tests were occasionally carried out to investigate whether significant changes could be found within the experimental group at the beginning and end of the semester based on variables other than the pre- and post-writing tests (e.g. comparisons between particular weeks, topics, *etc.*). The findings of these within-group tests aimed at providing further understanding of the results obtained from the paired sample t-tests.

a. The Effect of Using Discussion Boards on Students' Fluency

Results of the Independent Sample t-tests reveal that there was no significant influence of the online discussions on developing students' written fluency, which was examined by measuring the mean number of words produced within 45 minutes (t=.447,

P=0.657), and by calculating the ratio of the number of words per error-free clause (W/EFC) (t=.288, P= 0.292). Although there were differences between the mean number of words produced by the students in the experimental group and the control group, these differences were not significant, as shown in Table 4.5 below.

Table 4.5: Differences in Fluency Measures between Experimental and Control Group

Measures	$\bar{x}$ Experimental Group	SD	$\bar{x}$ Control Group	SD	*t*-test	*p*<.05
No. of words in 45 minutes	246.3	59.8	237.6	61.3	.447	.657
W/EFC	42.02	35.7	57.45	53.2	.288	.292

I believe that this result can be attributed to the limited time students had to present their arguments on paper (45 minutes), as experimental students were found to produce increased number of words every week during the semester. I noticed that there were highly significant differences (P=.000*) between the number of words produced during week 2 ($\bar{x}$ =115.9) and those produced during week 10 ($\bar{x}$ =229.7) as shown in the table below. Highly significant differences were also found in the paired sample t-test within the experimental group between their pre- and post-study writing tests (P=.000*). Hence, I speculate that they produced less significantly in the post-test because of the time restriction which could have been insufficient for the actual fluency rate to be tested.

Table 4.6: Paired Samples *t*-test Results of
Experimental Group's Fluency Development (Week 2 vs. Week 10)

No. of Words per Week	$\bar{x}$	SD	*t*-test	*p*<.05
Week 2	115.86	71.861	-5.101	.000*
Week 10	229.71	96.602		

It is possible, based on findings in Table 4.6, to anticipate that these students developed more fluency as the course progressed because of the amount of the linguistic exposure they had access to for 10 weeks of online discussions, in addition to the amount of linguistic output they produced per week (a minimum of 4 written texts per week) in comparison to the control group who only submitted written assignments bi-weekly. A student interviewee mentioned that:

- *Wafa: I feel I write faster now because I produce more writing on a weekly basis while we only submit only 2-3 pieces of writing in a semester in the other English courses. I even find it faster to type my writing online than to write it on a piece of paper.*

Chenoweth and Hayes (2001) correspondingly found in their study that "increased experience with a language was associated with increased fluency in writing that language" (p.92). However, we have to differentiate here between exposure and practice and between academic proficiency levels. It is not always true that the more the writer is skilled, the longer texts he/she tends to produce, as some studies report a positive correlation between language expertise and written fluency while others do not (Raimes, 1985; Roca de Larios, Murphy & Marín,2002; Sasaki, 2002). For instance, expert writers in Sasaki's study produced longer texts and wrote faster than novices did. In our study, however, text length was not associated with students' academic levels. *Fatma J.*, one of the skilled students, produced one of the shortest compositions while *Balqees*, a low achiever, produced much lengthier texts. I speculate that these skilled students prioritised their attention to producing accurate pieces of writing (Ellis & Barkhuizen, 2005; Skehan & Foster, 1997), and hence, wrote shorter texts and used fewer words to express their viewpoints. This could also explain their high lexical density (*see* Section 4.3.b. below). On the other hand, students with lower language abilities used more words to voice their opinions and hence, wrote longer pieces of writing. Hence, it seems that students' fluency did not positively correlate with the other aspects of language development. This finding could add to the literature related to the relationship and trade-off between these three aspects.

In addition, the fact that students were given the opportunity to write freely on the discussion board without worrying about the corrective feedback they might be receiving from the teacher can be another reason for the increased fluency throughout

the semester. Chandler (2003) argues that "students tend to write more when their writing is not being marked for any kind of surface error than when it is" (p.292).

b. The Effect of Using Discussion Board son Students' Accuracy

The development of accuracy was operationalised in this study using two measures: *ratio of error-free clauses to the total number of clauses* (EFC/C) and *the ratio of errors to the total number of words produced by each student* (Errors/Words). As shown in Table 4.7 below, although the ratio of EFC/C did not have significant changes in the post-test among both groups, students' in the experimental group produced fewer errors to the total number of the words they produced than those in the control group. The experimental group produced a mean of 0.113 errors per total number of words in the post-test in comparison to the mean of 0.122 errors per total number of words in the control group, and this improvement was statistically significant (t=-2.11, P= 0.042). This mean difference found in the independent sample t-test seems to suggest that students using online discussions improved their accuracy more than those who did not.

Table 4.7: Difference in Accuracy between Experimental and Control Group

Measures	$\bar{x}$ **Experimental Group**	**SD**	$\bar{x}$ **Control Group**	**SD**	***t*-test**	***p*<.05**
EFC/C	.389	.220	.273	.141	.273	.141
Errors/No. of Words	.113	.065	.122	.064	-2.12	.042*

Experimental students' average number of errors decreased in the post-test possibly because of the conscious attention they placed on producing accurate writings on the discussion board because of the influence of the authentic audience and peer response and opinion they mentioned to be highly important in addition to the effects of extra practice and planning (*see* Chapters 5 & 6).

While Brumfit (1984) argues that L2 accuracy can only be achieved through conscious attention to structure, Schmidt (1992) maintains that it is attention rather than conscious awareness that is necessary for accuracy development. Wolfe-Quintero *et al.* (1998), however, believe that both views can be accepted if accuracy is placed on a continuum ranging from the more explicit to the more implicit language forms. This study believes that the online students were highly attentive to their errors possibly because of the existence of a real audience that encouraged them to plan and edit their writings before submission. Another reason could be the permanence of their written output in the discussion board which might have led students to use other metacognitive skills such as self-monitoring and self-evaluation.

Many student interviewees expressed that they believed their accuracy improved because of the conscious planning and editing they performed while writing their texts before submitting their final drafts in the discussion board, as shown in the extracts below:

- *Fatema A.J.: When I want to write something on the discussion board, for example, I write first on Ms Word and then re-read it to find my mistakes and check my vocabulary to ensure it's ok before posting it.*

- *Amina: I used Ms Word to check my spelling and grammar before posting my writing. ... because I wanted to improve my English and stop making mistakes since I am an English major student. I also wanted to impress my teacher and classmates. ...Before using the discussion board, I wasn't used to planning before writing but now it's the opposite. I think I have become more careful about what I'm going to write about so I plan and write at least two drafts before submitting my work.*

- *Ali: I am writing longer sentences than before and I've learnt many new words. I also write faster now and always check my grammar and spelling before submitting my writing online.*

Looking back at the relevant literature (*see* Chapter 2), the current trends in writing assessment give more importance to the processes of writing, editing and revising rather than to producing error-free texts (Polio, 1997). Research in L2 writing claims that planning positively influences language proficiency (Crookes, 1989; Foster &Skehan, 1996; Mehnert, 1998; Ortega, 1999; Yuan & Ellis, 2003). In Foster and Skehan's (1996) study, L2 writers produced better linguistic output when given the opportunity to plan their tasks linguistically and propositionally.

Self-monitoring and correction of linguistic output through conscious editing of language production enhances accuracy because editing is considered a high-level skill of planning (Wolfe-Quintero *et al.*, 1998). L2 learners perceive self-correction as a better way of linguistic development than teachers' corrective feedback (Chandler, 2003). According to Polio, Fleck and Leder (1998: 47),

> While composing in a second language, learners may be obliged to monitor their language production in a way that is not necessary or feasible under the time constraints of comprehending or conversing in the second language. This monitoring may foster learning under conditions in which the communicative value of second language expression is personally significant.

That said, although editing is a conscious act, it does not necessarily guarantee an error-free production of language because the choices language learners make depend on their varied proficiency levels and on whether they are aware of their most common errors. It is argued that the more students become experienced with using the language, the less they might revise their written production (Chenoweth & Hayes, 2001). However, and as shall be observed in students' interviews, skilled and unskilled students reported highly practising planning, self-monitoring and revising their writings before posting them online. Students also mentioned that the discussions helped them identify their mistakes and hence, become more aware of them when writing (*see* Chapter 6).

c. The Effect of Using Discussion Board son Students' Grammatical Complexity

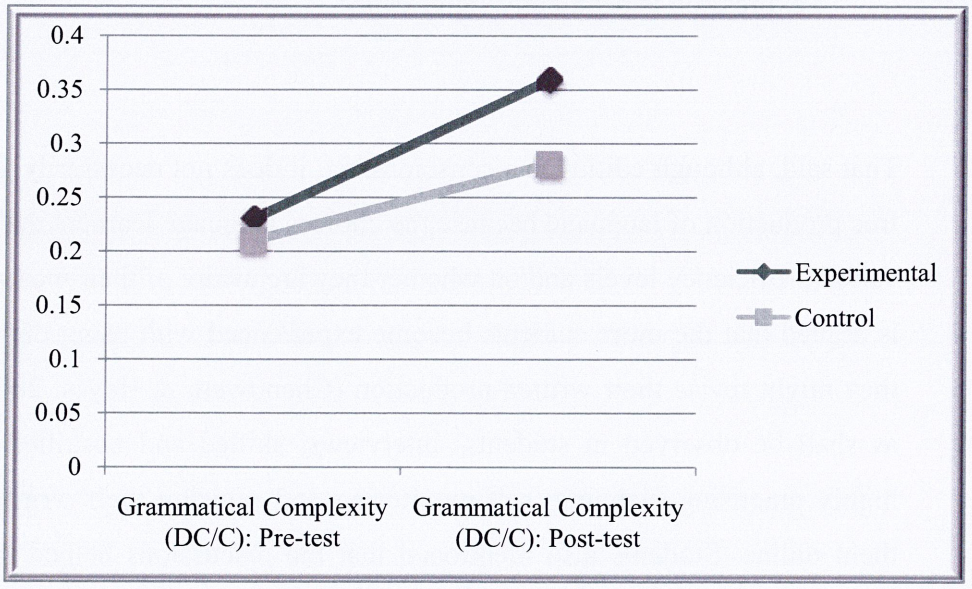
Grammatical complexity, measured by calculating the *ratio of the number of dependent clauses to the total number of clauses* (DC/C), was found to have significantly developed among students in the experimental group (pre-test $\overline{x}$ =0.23 vs. post-test $\overline{x}$ =0.359), while the mean of the control group remained almost the same (pre-test $\overline{x}$

=0.21 vs. post-test $\bar{x}$ =0.28). There were significant differences found between both groups (t=2.82, P= .007*), as shown in Table 4.8 and Figure 4.1 below.

Table 4.8: Difference in Grammatical Complexity between Experimental and Control Group

Measures	$\bar{x}$ Experimental Group	SD	$\bar{x}$ Control Group	SD	*t*-test	*p*<.05
DC/C	.359	.104	.281	.077	2.82	.007*

Figure 4.1: Development of Students' Grammatical Complexity

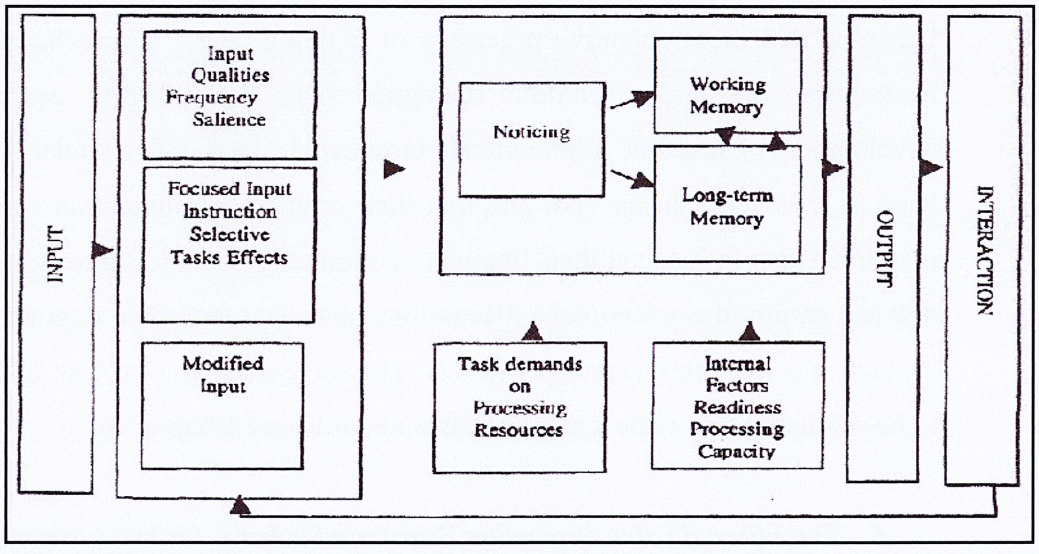


This significant development in favour of the experimental group can also be attributed to the effects of planning and editing mentioned earlier and to other meta-cognitive practices such as self-monitoring and self-evaluation (*see* Chapter 2). Cognitive processes of second language acquisition are enhanced through the exposure to and production of *comprehensible input* and *output* (Cumming, 1990; Krashen, 1982; Swain, 1985). As mentioned earlier in the previous section, the notion of *noticing*, argued to facilitate L2 acquisition, is related to Swain's (1985) *Output Hypothesis*, which proposes that acquisition of a particular linguistic form might be enhanced if learners were consciously attentive to this form (Schmidt, 1992; Skehan, 1998). Many

other studies have also addressed the notion of noticing (Kuiken & Vedder, 2007; Schmidt, 1990; VanPattern, 1996). Kuiken and Vedder (2002) conducted a study to assess how interactions among learners influence the complexity of their texts by addressing issues of noticing, interaction and metacognition as effective factors of L2 acquisition. VanPattern (1996) also reported a positive correlation between learners' learning and their conscious attention to linguistic forms.

Skehan's (1998) *Information Processing Model* lists a number of factors that influence noticing such as individual differences, classroom teaching, demands on talk, learners' readiness, and most importantly the "frequency and salience of the input" (Kuiken & Vedder, 2002: 147). It is proposed that the level of frequency of a particular form makes it more noticeable and hence, learners are encouraged to alternate or adapt their linguistic output (Long, 1996). Consequently, this modified output turns into modified input, which in return affects noticing. Figure 4.2 below demonstrates Skehan's model of the different types of noticing.

Figure 4.2: Skehan's (1998) Model on Types of Noticing



A number of student interviewees referred to how noticing influenced their writing, as shown in the extracts below (*see* Chapter 6):

- *Ahmed: I learnt quite a lot from my classmates' postings in the discussions. When I used to find a new term, I used to translate it and use it later in my postings.*

- *Isra: ... We also had a good experience learning from our classmates because we learnt a lot from their use of particular structures and phrases and from their personal experiences.*

- *Fatema J.: I used to notice how my smart classmates used to write and what structures they were using. For example, Fadheela used very nice expressions and grammatical structures so I loved reading her postings and using them in my postings.*

- *Wafa: ... During the first discussion, a student used the expression "I would shed tears" while I would say "I would cry" instead. I liked it and started using it in my writings.*

A related line of research to the notion of noticing is the effect of the interactive collaborative dialogues L2 learners engage in to negotiate meaning. This cognitive process often involves the production of newly-acquired linguistic knowledge or the enhancement of existing ones. Swain and Lapkin (2000: 254) argue that "the knowledge building that learners have collectively accomplished becomes a tool for the further individual use of their second language". In relation to online discussions, Vonderwell, Liang and Alderman (2007) argue that "writing in the online discussions required [students] to rethink and assess their own understanding of the content before they posted their responses" (p.319).

I assume that these cognitive processes of noticing peers' comprehensible output and negotiating meaning in online dialogues may have highly contributed to the development of students' grammatical complexity. The fact that students did not have to hand in their texts on the spot and that their online communication was asynchronous may have also influenced their linguistic complexity. According to Sotillo (2000), "the delayed nature of asynchronous discussions gives learners more opportunity to produce syntactically complex language" (p.82). The increased time-on task and practice seem to be advantageous while using discussion boards (*see* Chapter 6).

d. The Effect of Using Discussion Board son Students' Lexical Complexity

Overall results of the independent sample *t*-tests reveal that there was a significant difference between the experimental and control group's lexical complexity. Findings of standardised TTR showed a relatively significant difference between the control group and the experimental group's lexical complexity (t=2.028, P= 0.049*). Also, highly significant differences were found between both groups in relation to the development

of their lexical density measured by calculating the *ratio of lexical words to the total number of words* (t=3.81, P=0.001* for L/W), as shown in the table and figures below.

It is important to mention here that lexical words counted were *nouns, verbs, adjectives*, and *adverbs* (i.e. non-grammatical words such as *articles, pronouns, prepositions, conjunctions, auxiliary verbs, interjections, particles, expletives and pro-sentences*). Also, derivatives were not considered different words during data analysis. A word family was considered a single word so that students who used derivatives are distinguished from those who used different families of words (Laufer & Nation, 1995).

Table 4.9: Difference in Lexical Complexity between Experimental and Control Group

Measures	$\bar{x}$ **Experimental Group**	**SD**	$\bar{x}$ **Control Group**	**SD**	***t*-test**	***p*<.05**
Type/Token Ratio	57.9	7.04	53.9	5.85	2.028	0.049*
L/W	83.5	3.53	77.7	5.60	3.812	.001*

Figure 4.3: Development of Students' Lexical Variation: Standardised Type/Token Ratio (TTR)

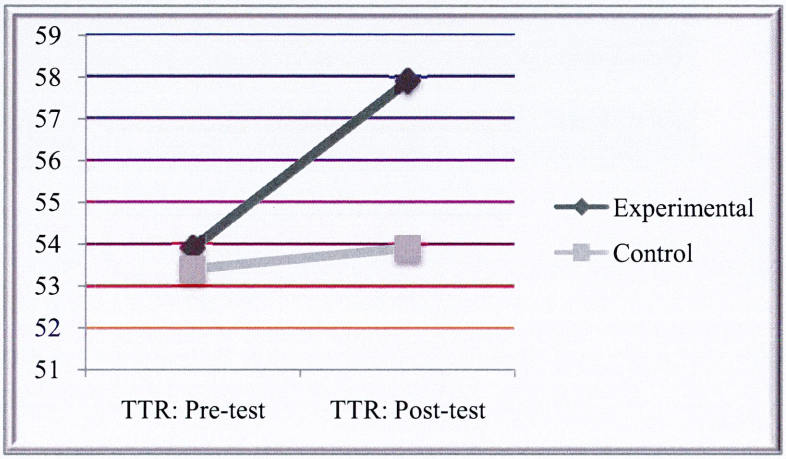
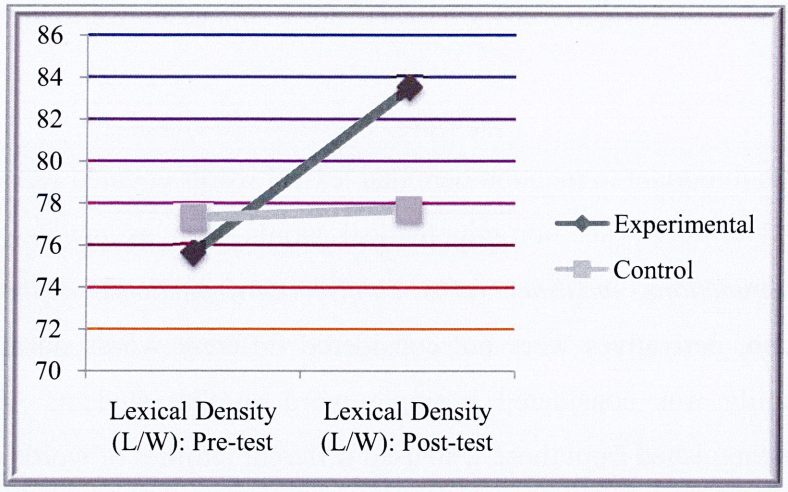


Figure 4.4: Development of Students' Lexical Density (L/W)

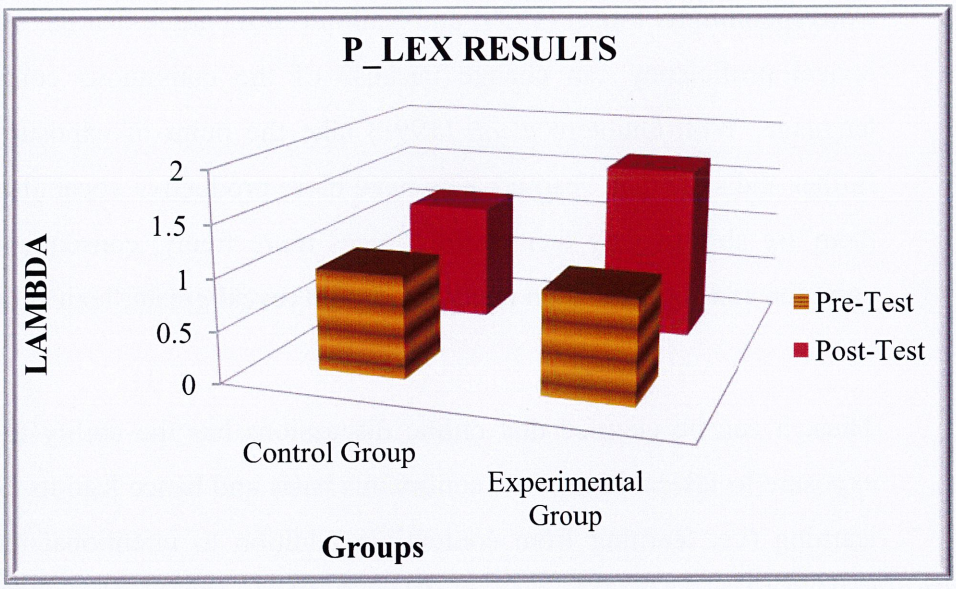


To provide further validity to the results on students' lexical complexity development, their lexical richness was assessed using *P_Lex*. Text length of students' pre-and post-study writings was standardised by dividing the data into chunks of 100 tokens, as also done using TTR (Espinosa, 2005; Read, 2000). The mean lambda value for both groups was found to be significantly different, as shown in Table 4.10 below:

Table 4.10: Mean Lambda Scores of Pre- and Post-Tests for Both Groups

	Lambda **Experimental Group**	***Lambda*** **Control Group**
Pre-Test	0.99	0.99
Post-Test	1.69	1.16

Figure 4.5: Mean Lambda Scores of Pre- and Post-Tests for Both Groups



These findings reveal that the mean lambda value of the experimental group's writing has significantly increased in the post-test unlike the control group, whose lambda slightly increased in the post-test. These results positively correlate with those found using measures of lexical variation (TTR) and lexical density (L/W). Hence, I could conclude that the online discussions significantly helped improve students' lexical complexity at different levels. Many researchers have found similar results in relation to the effect of online communication, whether synchronous or asynchronous, on the lexical complexity of the participants (Abrams, 2003; Fitze, 2006; Malvern, Richards, Chipere & Durán,2004; Warschauer, 1996a; Yates, 1993). Fitze (2006), for instance, found that students' online conferences were significantly lexically denser than face-to-face conferences. In Malvern *et al.*'s (2004) study, a positive correlation was found between lexical complexity and word length.

I speculate that students' lexical complexity significantly developed after using the discussion board for a semester for a number of reasons. First, it is possible that the extensive amount of exposure to language that they had access to while reading and commenting on their peers' written arguments online has influenced their lexical knowledge, unlike the control group who had limited linguistic input and no exposure to peers' writing and hence, to their lexical words and expressions, a common feature of traditional L2 learning settings, in which Laufer (1994: 31) insists that "explicit

vocabulary teaching is needed to compensate for the insufficient quantity of input". Correspondingly, Fraser (1999) and Nation (2001) argue that the cumulative process of lexical proficiency can change because of the continuous contact with the target language. Wolf-Quintero *et al.* (1998) take the point of exposure to linguistic input further and state that "learners who have more productive vocabulary items available to them are able to vary their word choices more freely; consequently, larger ratios on variation and sophistication measures should reveal greater lexical proficiency" (p.101).

Thus, it can be claimed that online discussions has the ability to facilitate increased exposure to lexical items on a continuous basis and hence lead to incidental vocabulary learning (i.e. learning from context) in addition to intentional learning leading to a balanced lexical learning setting (Chun & Plass, 1996). Nation (2001) maintains that incidental learning is "the most important of all sources of vocabulary learning" (p.232) once complemented with deliberate attention to decontexualised vocabulary learning. It is then very possible that incidental learning of lexis occurred when students were reading their peers' posted discussions (*see* Chapter 6 for students' comments). According to Nation, "small gains become large gains if learners do large quantities of reading" (p.238).

In addition to the fact that they learn new words, they also "improve grammatical knowledge, become more familiar with text structure, improve reading skills, learn new information and learn that reading can be an enjoyable activity" (p.238). Learners' attention might have also been incidentally drawn towards the unfamiliar lexical items they looked up (Fraser, 1999; Nation, 2001) followed by memory retrieval of these items while writing. A number of student interviewees reflected on the effect of incidental learning and retention on their vocabulary learning:

- *Amina: We communicated and we realised our language learning problems better in the discussion board. I realised that I have problems with vocabulary that I didn't use to care about. I started giving more attention to this problem during the discussions by looking for better and different words with the help of online dictionaries.*

- *Fatema J.: I believe I have learnt many new words from the discussions. I used to notice new words other students used, find out their meanings and then use them in my own writing.*

In this regard, it can also be considered that asynchronous discussions could promote lexical complexity better than synchronous ones because of the reduced time pressure on participants to produce utterances. Yates (1993) suggests that "the malleability of electronic text should make it easier to change and rethink a written utterance before it is committed to any printed form" (p.79). Some student interviewees supported this perception, as in the extracts below:

- *Ali: The speed required for chatting might be a problem for us. That is why I enjoyed participating in the discussion board more because the topics were lively and we did not need to respond hurriedly.*

- *Balqees: I prefer participating in the discussion board more than in synchronous chats because the number of students is large and it would be overwhelming to read and respond to all or most of them in a limited period of time.*

In sum, online discussions seem to have positively influenced students' lexical complexity especially in how dense their writings were. That said, the possibility of bias in students' responses and the halo effect have to be considered (*see* Chapter 3).

4.4 CONCLUSION

This chapter provided evidence that the facilitation of online discussions in L2 learning settings had some significant effects on students' accuracy, grammatical complexity and lexical complexity. The tentative finding that can be gathered from all the above-mentioned results is that online discussions may provide for a context of rich linguistic practice of L2 in which students are exposed to relevant input and produce significantly meaningful, accurate and complex output to a greater extent more than the traditional language learning and teaching methods could provide (Kern, 1995b; Ortega, 1997; Warschauer, 1996a; Yates, 1996).

I have to mention, however, that one of the limitations of this study is its short period of time (one semester=four months). I believe that more significant results could have been

attained if the study has spanned a longer period of time (2 semesters) for the overall influence of online discussion to take place. Ortega (2003) and Kol and Schcolnik (2008) argue that language development cannot be easily observed over short periods of treatment but rather requires at least a year to witness substantial changes. However, it was not within the ability of this study to carry out the experiment for more than a semester because it was only granted permission by the *UoB*'s administration to teach two classes for a single semester only, which is a uniform procedure for all graduate assistants across the board. I also concur with Farhady (1982: 55) in his statement below arguing that test scores are mostly dependent on variables related to the individuality of the learners themselves:

> No matter what the purpose of the test may be, learner variables will definitely influence test scores in one way or another. That is, placement, selection, aptitude, proficiency, and other uses of language. Test scores will be sensitive to those who take the test.

To sum up, the mean scores of the various language development measures used seem to suggest that the online discussions our experimental students engaged in had some positive effects in their writing, showing some significant differences between them and our control students particularly in their accuracy, grammatical complexity and most remarkably lexical complexity. Table 4.11 lists the results of this chapter in relation to the research questions.

Table 4.11: Summary of the Results

Research Question 1: ***Does the use of the discussion board help to improve student writing in terms of fluency, accuracy and complexity?***	**Results**
i. *Does the use of the discussion board improve students' fluency in writing?*	No significant changes
ii. *Does the use of the discussion board improve students' accuracy in writing?*	Significant changes in favour of using online discussions: *No. of Errors/Total No. of Words*
iii. *1. Does the use of the discussion board improve students' grammatical complexity in writing?*	Significant changes in favour of using online discussions
2. *Does the use of the discussion board improve students' lexical complexity in writing?*	Significant changes in favour of using online discussions

I cannot but join Sotillo (2000), Davis and Brewer (1997) and Vonderwell *et al.* (2007)in arguing that there is enough evidence on the positive effects online discussions can have on L1 and L2 writing, and that "the deviations from a student's norm in electronic discourse are just as suggestive, for the student will shift, one way or the other" (Davis & Brewer, 1997: 82) and will recognise the "importance of writing skills to understand, interpret, and implement the content knowledge" (Vonderwell *et al.*, 2007: 323).

CHAPTER FIVE

PARTICIPATION AND INVOLVEMENT IN THE DISCUSSION BOARD

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PARTICIPATION AND INVOLVEMENT IN THE DISCUSSION BOARD

5.1 INTRODUCTION

This chapter aims at carrying out a content analysis of the discussions to examine students' participation and involvement in the discussion board. Participation, in addition to interaction, input and output, is considered effective in enhancing second language acquisition and transforming conventional instructional settings into rich social and discoursal milieus (Consolo, 2006; Ellis, 1997; Ortega, 2009; Weasenforth *et al.*, 2002).

The chapter starts with analysing students' participation rates in the discussion board followed by identifying the levels of involvement among students (*i.e.* active vs. passive participants). Then, I propose, based on frequency counts and the content analysis of discussion transcripts, a number of possible factors that might have directly or indirectly influenced students' participation in the online settings.

5.1.1 Participation in In-Class Discussion vs. Online Discussion

Before any analysis of students' online participation is conducted, it is crucial first to understand how students evaluate their participation in in-class discussion. Student responses in the pre-study questionnaire and interviews revealed an unfortunate property of current L2 teaching practices at the *UoB* (*see* Chapter 1), which is the limited opportunities for students to participate in in-class discussion because of time constraints. While more than 70% of students in experimental and control groups claimed that they liked to participate in in-class discussion, almost half of them mentioned that they are given less than a minute to participate in these discussions per lesson.

Table 5.1: Students' Responses to In-Class Discussion Rate (n=41)

Do you like to voice your opinion on a topic in front of your peers in the classroom?	
Answer	**Frequency Distribution**
a. Yes	30
b. No	8
c. Not sure	3

Table 5.2: Students' Responses to the Amount of Participation (n=41)

When discussing topics in the classroom, how much time are you given to talk?	
Answer	**Frequency Distribution**
a. Less than a minute	20
b. 1-2 minutes	8
c. 3-5 minutes	9
d. 5-10 minutes	2
e. More than 10 minutes	2

Also, the majority revealed that in-class discussion mostly involves a single student and the teacher, while discussions with peers or as a whole class were rare.

Table 5.3: Students' Responses to Participation in In-Class Discussions (n=41)

When discussing a topic in the classroom, do you:	
Answer	**Frequency Distribution**
a. discuss it with the teacher?	32
b. discuss it with your peers (classmates)?	5
c. discuss it with both the teacher and your peers at the same time?	4

Student interviewees provided further evidence to support these findings about in-class discussion:

- *Fatema T.: In these courses, we are sometimes asked to say our opinions on a topic ... The time allotted for each student is very limited reaching up to 2 minutes which is not enough.*

- *Wafa: When we discuss, we only direct our talk to the teacher and we hardly discuss things with our peers. I think that each student is asked to discuss roughly once or twice per unit, which often lasts for 2-3 weeks. Each of us might have a minute or less to talk in class or discuss anything.*

Students also said that teachers used *WebCT* mostly to deliver grades and assignments but did not encourage interactive student-student discussion:

- *Ahmed: It was only used to discuss the grades and the assignments.*
- *Fatema T.: It [Communicating with peers] happened very rarely. We used to mostly email our homework assignments or any problems we had to the instructor, and that was it.*

These findings and remarks suggest low student participation, a limited amount of student 'talk,' and teachers' control over the discourse exchanged in the *Uob*'s conventional and online courses.

In order to have empirical evidence to support these speculations, I examined the frequency of experimental students' participation in the discussion board and compared it to control students' participation in in-class discussion. After the induction session in which *WebCT*'s discussion board was introduced, experimental students started participating in the weekly forums by posting one initial posting to the teacher's prompt and multiple responses and follow-ups to peers' postings for 10 weeks. On the other hand, control and experimental students had a 10-minute argumentative in-class discussion at the beginning of every lecture three times a week for 10 weeks, as per the course syllabus.

An assessment of students' participation rate for both groups was particularly observed during Week 4 (*see* Appendix O). Week 4 was chosen so that students in both groups have overcome any sort of anxiety caused by being in a new learning environment with a new teacher and classmates and so that students have got familiar with course design and requirement. Frequency counts for each student's turn or number of contributions showed that while experimental students' participation in the discussion board was significantly high (participation rate=100%), control students' participation was sporadic (participation rate=55%). It was observed that all experimental students of different gender and academic levels participated in the discussion board but with different rates of involvement, whereas advanced and average male students in the control group participated mostly in the in-class discussion. There were many students, especially females, who did not participate at all in the discussions unless the teacher asked them to (*see* 5.3.3 below).

5.2 STUDENTS' INVOLVEMENT IN THE DISCUSSION BOARD

This section examines experimental students' involvement in the online discussions by observing their participation rate, levels of involvement and types of contributions.

5.2.1 Students' Online Participation Rate

Students started participating heavily in the discussion board right after the induction session. The 21 students produced 73 postings during Week 1 alone. However, Week 1's postings were disregarded during the analysis of students' participation because some of these postings were submitted by 4 students who dropped out because of timetable conflict, so their contributions had to be removed.

On average, the class posted 26.5 postings per week. Figure 5.1 below shows an increase in the number of contributions as the course developed. Analysis revealed that students who initially sent an average of 35 postings during Week 2 produced an average of 88 and 75 postings during Week 7 and 8 respectively for reasons that are discussed in Section 5.3 below.

Figure 5.2 below shows that students also produced the highest number of words towards the middle of the semester and that this number became relatively constant during the remaining period. While the average number of words produced in Week 2 (x=110), for instance, doubled in Week 4, the average remained high until Week 8, when the average reached 223 words per student. It has to be mentioned that the weeks that witnessed a decline in the number of contributions or words (Week *5, 9* and *10*) were busy periods for midterm exams, assignment submission and final exam preparations.

Figure 5.1: Students' Online Participation Rate per Week (n=21)

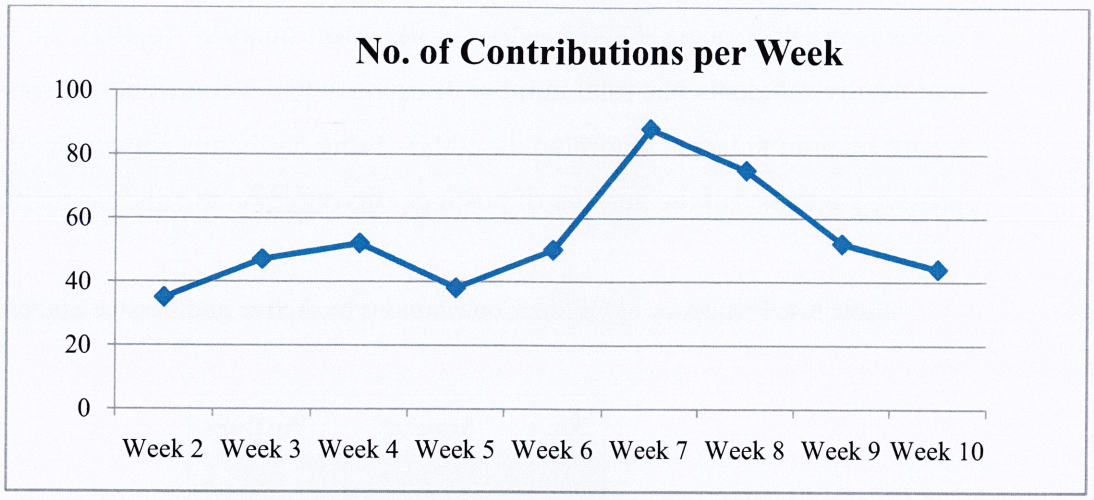
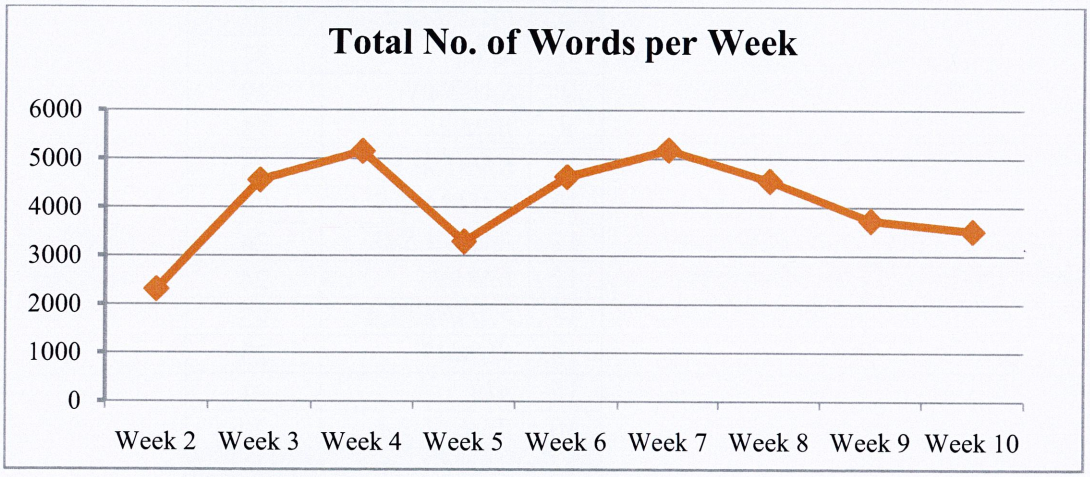


Figure 5.2: Total Number of Words per Week



These findings suggest that there was a noticeable increase in students' online participation. However, although all students participated in the discussion board, not everyone was equally active. Thus, a distinction has been drawn between the different levels of students' online involvement.

5.2.2 Levels of Involvement in the Discussion Board

Data analysis revealed that students' participation in the discussion board varied substantially. Students in this respect could be divided into two distinct groups: active participants who sent regular responses to their classmates, and passive participants who submitted the least number of responses. This study used Lipponen, Rahikainen, Lallimo and Hakkarainen's (2003) classification of active and passive/inactive

participants. They explained that "a participant was considered active if the participation rate was in upper quartile and inactive in the lower quartile" (p.492). To identify active and inactive students, the total number of each student's contributions was calculated as a participation indicator (Fairclough, 2003). Table 5.4 below shows the most active and passive students and the number of postings submitted on the discussion board.

Table 5.4: Frequency of Online Contributions by Active and Passive Students (n=21)

No.	Student	Postings
1	*FATEMA J.*	48
2	*BALQEES*	44
3	*MARWA*	44
4	*FATEMA A.J.*	43
5	*FATEMA T.*	33
6	*ISRA*	32
7	*SAWSAN*	29
8	*WAFA*	25
9	*KHADIJA*	25
10	*ZAHRA A.S.*	24
11	*AMINA S.D.*	24
12	*EMAN*	24
13	*FADHEELA*	23
14	*SUMAT*	23
15	*ALI*	21
16	*AMINA S.A.*	20
17	*AFRAH*	16
18	*HUSSAIN*	16
19	*MOHAMED*	15
20	*AHMED*	14
21	*MONA*	11
AVERAGE		**26.5**
STDEV		**10.7**

It was also observed that students' involvement level changed as the course progressed. Some students who were initially passive took more active roles later. For example, *Afrah*, *Khadija* and *Amina S.D* sent no responses during the first three weeks but started engaging in exchanges right after Week 4. Likewise, *Balqees* started cautiously with only 10 contributions until Week 5 but then started interacting intensively by posting 32 contributions during the second half of the semester making her the second highest participator among all students.

Conversely, some students who were relatively active at the beginning of the course and were frequently sending responses to their peers (e.g. *Isra*, *Wafa* and *Hussain*) gradually lessened their participation. During the interviews, they attributed their changed behaviour to the limited number of peer responses they received, which they found disappointing and discouraging, and to gender-related factors (*see* 5.3.3 and 5.3.4 below).

In sum, I can conclude that most students were active participants in the discussion board. That said, I find it equally necessary to differentiate between the various types of contributions students submitted to better understand students' roles and motives in the online linguistic environment.

5.2.3 Types of Students' Online Contributions

Many studies have analysed students' participatory contributions in the discussion board using Sinclair and Coulthard's (1975) (IRF) classification pattern: *initiation/initial postings, responses* and *feedback/follow-ups* (*see* Chapter 2). Similarly, this study classified students' online contributions into *initial postings* and *responses*, the latter including first replies to initial postings and follow-ups (i.e. *1st follow-up*, *2nd follow-up*,*3rd follow-up* and *reply to a follow-up*). Data analysis revealed that students produced 554 postings, almost 34% of which were initial postings while the remaining 66% were either responses or follow-ups. It is noteworthy that 60% were responses to initial postings and only 6% were follow-up replies, as illustrated in Figure 5.3 below.

It seems that the online discussion became richer as the course developed and students' interest became more focused on exchanging responses rather than sending initial postings. Although the number of words in initial postings continued to be at least double the number of words in the responses, analysis revealed that the difference between them decreased during the second half of the semester (*see* Figure 5.4 below).

Figure 5.3: Frequency of Responses and Follow-ups in the Discussion Board

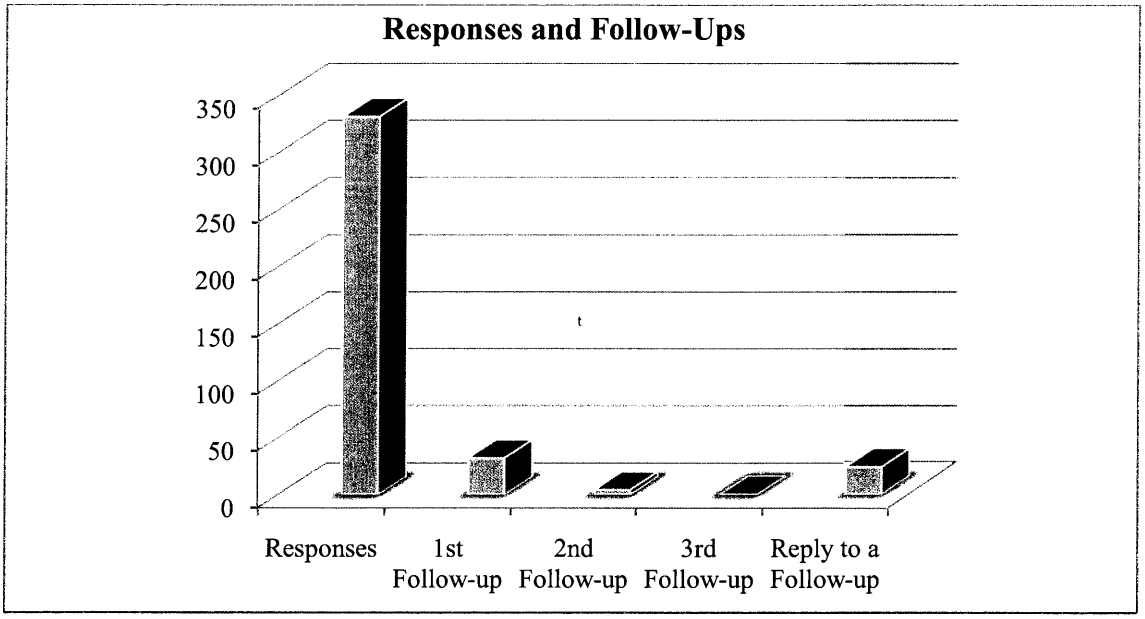
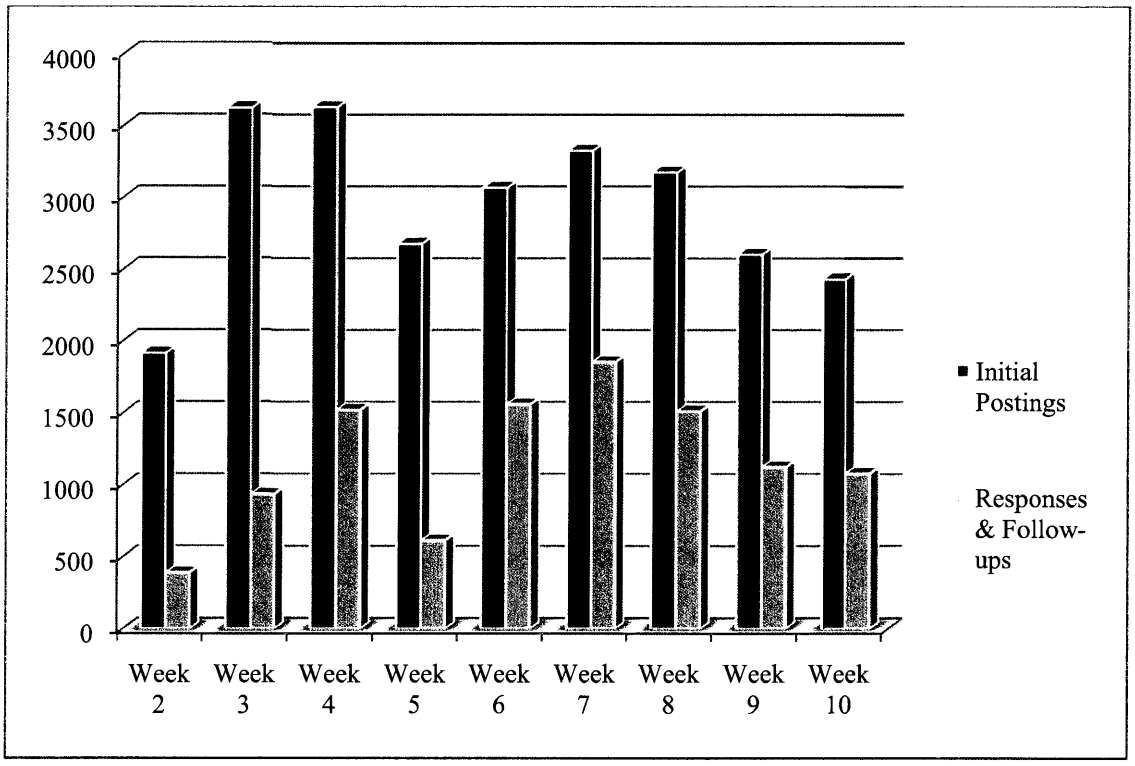


Figure 5.4: Difference in the Number of Words between Initial Postings and Responses/Follow-ups per Week

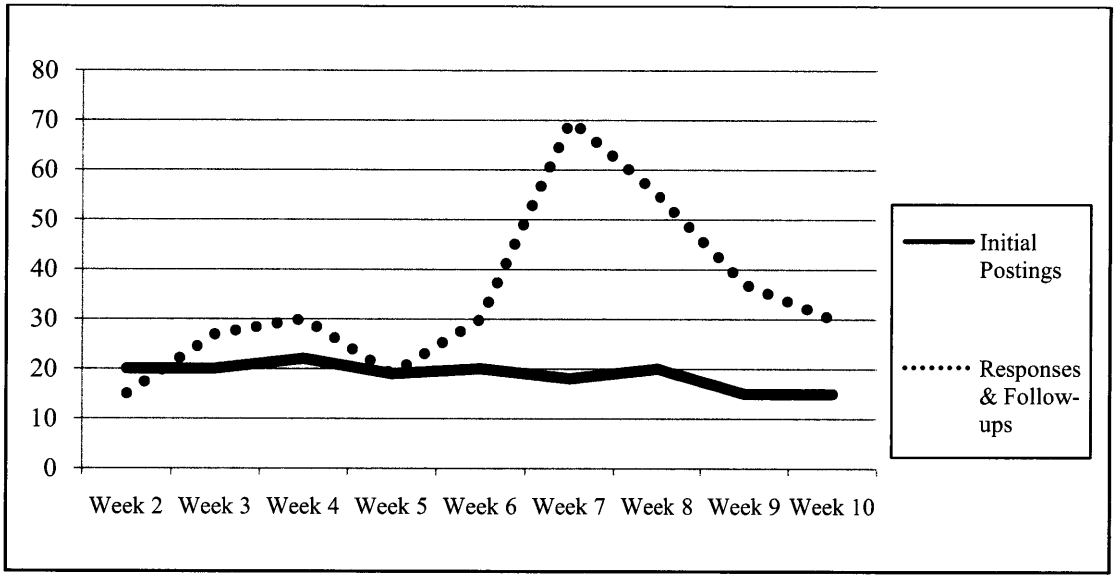


Findings revealed that 83% of the words produced during Week 2 were in the initial postings while only 17% were in the responses-follow-ups. However, the difference between these types of contributions became less significant during Week 7, when almost 40% of the words were produced in the responses and follow-ups only. Even

when participation faded out during the last week due to students' commitments to final exams and end-of-term assignments, responses-follow-ups constituted 31% of the total number of words.

Analysis also revealed that the difference in the number of submission between initial postings and responses-follow-ups increased significantly as the course developed (*see* Figure 5.5 below). It is possible that students considered the initial postings more important at the beginning of the semester because they assumed that they were graded as writing assignments unlike responses-follow-ups which were possibly considered peripheral. However, it seems that students' perceptions changed as the course progressed possibly because they started valuing the responses-follow-ups for social establishment of group unity. It is also possible that students viewed these discussions as channels to voice their opinions and present counter-arguments and thus, their response-follow-ups became more organised, logical, and critical.

Figure 5.5: Difference in the Number of Contributions between Initial Postings and Responses-Follow-ups



In sum, it seems that students were active in the discussion board and contributed a good number of postings per week. Below, I discuss factors that might have influenced students' level of participation and involvement.

5.3 POSSIBLE FACTORS INFLUENCING PARTICIPATION AND INVOLVEMENT

After carrying out an analysis of the discussions, I observed that students' behaviour in the discussion board might have been affected by the following factors:

- Choice of Discussion Topic
- Levels of Academic Competence
- Gender Dominance
- Interactivity
- Sense of Presence

5.3.1 Choice of Discussion Topic

It seems that participation, measured by the number and length of students' postings, was influenced by students' interest in the topic discussed. Table 5.5 below shows that certain topics produced more active discussion than others.

Table 5.5: Frequency of Students' Postings per Topic

Week	Topic	Total No. of Postings	Total No. of Words
2	Usefulness of Talk Shows	35	2303
3	*Effects of the Internet on Print Media*	*47*	*4553*
4	*Sources of Happiness*	*52*	*5149*
5	Time Machine	38	3289
6	Employment in Bahrain	48	3762
7	*Effects of Childhood Experiences on a Person's Life*	*88*	*5011*
8	*Financial Management*	*75*	*4542*
9	Usefulness of Travelling	52	3725
10	Effects of Gender Differences on Society	44	3509

The table suggests that there was an increase in the participation rate and number of words produced when students were discussing personal topics. For instance, Week 7's discussion on '*Effects of childhood experiences on a person's life*' and Week 8's discussion on '*Financial management*' seem to have attracted the highest number of responses.

They generated 162 postings with an average of 455 words per post in comparison to topics such as '*Talk shows*' during Week 2 and ''*Time machine*' during Week 5, which generated 73 postings with an average of 267 words per post. Week 4, in which they discussed '*Sources of Happiness'* generated an average number of 245 words per post. These findings show that participation became more meaningful to students when the discussion topics allowed them to draw on their own experiences. Similar findings were found by Davidson-Shivers *et al.* (2001).

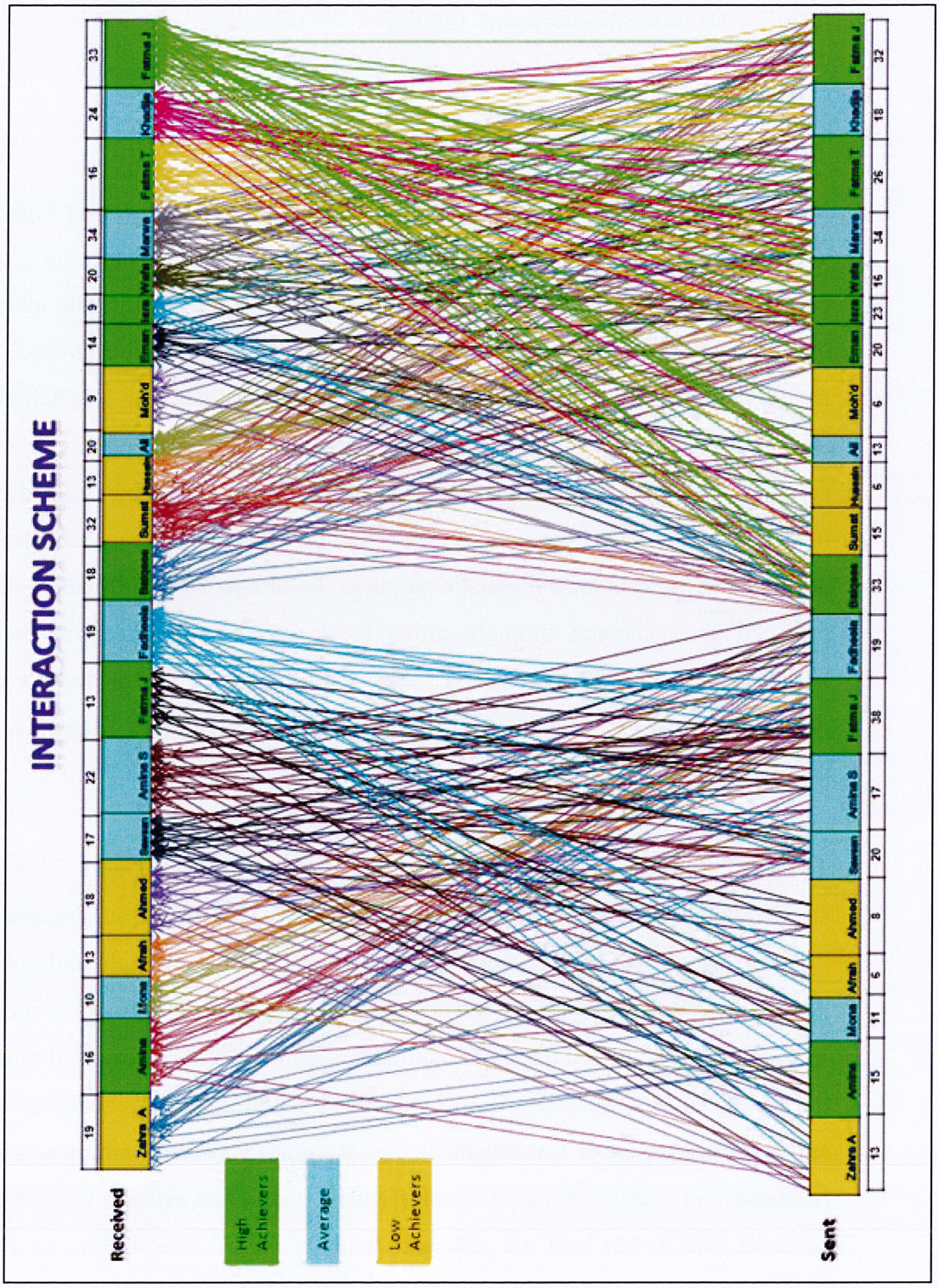
5.3.2 Levels of Academic Competence

Most students in the upper quartile of the *Participation Table 5.4* were high and average achievers, while many students at the lower quartile were low achievers, except for two part-time students with work and maternal responsibilities. While the average number of contributions was 26.5 posting per student, high achievers like *Fatima J., Marwa* and *Balqees* submitted 48, 44 and 43 postings respectively, whereas low achievers such as *Mona, Afrah* and *Ahmed* posted around 16 postings each. Although these low achievers received a good number of responses, many of them remained isolated and inactive (also *see* 5.3.4). High participation rate among high and average achievers could be attributed to the increased linguistic output in the discussion board, which seems to have operated as a channel through which these L2 students practised their linguistic knowledge (Montero *et al.*, 2007). This finding suggests that a number of measures need to be taken to encourage low-achievers to contribute more effectively while using discussion boards.

That said, content analysis using an *Interaction Scheme* (*see* Figure 5.6 below), which showed how students interacted and who interacted with whom, suggested an imbalance between sent and received responses exchanged between high and low achievers. Although low achievers sent fewer responses, they received most responses mainly from high achievers. On the other hand, although high achievers posted most responses, they received less especially from low achievers, while average achievers' rate of sent and received responses was balanced. For example, *Fatima J.*, a high achiever, sent 38 responses but only received 13, most of which were from average students while a low achiever like *Sumat* sent 15 responses but received 32 responses, as shown in the *Interaction Scheme* (*see* Figure 5.6 below). This kind of behaviour is later explained in

association with the *functional moves* (*see* 5.3.4.2). It might be appropriate at this stage to speculate that high achievers were sending more responses to their low-achieving peers to show support, encourage them to participate more, and boost their confidence in their linguistic abilities.

Figure 5.6: Interaction Scheme between Students of Different Academic Levels



5.3.3 Gender Dominance

Analysis of students' contributions also revealed that female students participated more significantly than their male peers. This study followed Yates' (2001) recommendations in analysing gender in online postings by calculating the mean number of contributions submitted by each gender. Findings revealed that while increased active female participation in the discussions was found, males' participation was relatively low.

Table 5.6: Mean of Female vs. Male Contributions in the Experimental Group (n=21)

Female Students	No. of Postings	Male Student	No. of Postings
Fatema J.	48	Ali	21
Balqees	44	Hussain	16
Marwa	44	Mohamed	15
Fatema A.J.	43	Ahmed	14
Fatema T.	33		
Isra	32		
Sawsan	29		
Wafa	25		
Khadija	25		
Zahra A.S.	24		
Amina S.D.	24		
Eman	24		
Fadheela	23		
Sumat	23		
Amina S.A.	20		
Afrah	16		
Mona	11		
TOTAL	**488**	**TOTAL**	**66**
MEAN	**28.7**	**MEAN**	**16.5**

This table clearly illustrates that the average number of postings females submitted was almost double the ones males did. A number of other studies have also identified gender differences in online discussion (Blum, 1998; Danet, 1998; Davidson-Shivers, *et al.*, 2003; Gilligan, 1993; Graddol & Swann, 1989; Herring, 2003; Rickert & Sacharow, 2000; Wu & Hiltz, 2004).

Female students' participation was possibly enhanced by the freedom of expression combined with reduced anxiety in interacting with peers regardless of their gender, a factor often inhibiting them from actively participating in in-class discussion. Classroom observation of the control group revealed that discussions were mostly dominated by male students while most females were inactive (*see* Table 5.7 below). Although females outnumbered their male peers (15 vs. 5), their participatory turns had an average of 1.5while the mean of the male participatory turns was6during Week 4.

Table 5.7: Mean of Female vs. Male Participatory Turns in the Control Group (n=20)

Female Student	Turns	Male Student	Turns
Nebras	5	Hasan	9
Qumasha	4	Omran	8
Roqaya	3	Salman	5
Noor	3	Abdulla	5
Zainab	2	Faisal	4
Nasreen	1		
Mariam	0		
Heba	0		
Hawra	0		
Khadija M.	0		
Sara	0		
Fatema M.	0		
Sama	0		
Manal	0		
Layla	0		
TOTAL	**19**	**TOTAL**	**31**
MEAN	**1.5**	**MEAN**	**6.2**

The table above illustrates clearly the gender differences in in-class participation and the findings show how gender domination and the roles each gender plays are shifted in the discussion board, as compared to the f2f classroom settings.

Although the *UoB* offers co-education, gender communication in classrooms is minimal and is limited in best cases to course-related matters, possibly because of the religious and cultural constraints on gender communication in conservative societies such as Bahrain (*see* Chapter 1). However, these constraints seem to have been marginalised in the discussion board. I noticed that some originally-conservative female students such

as *Khadija* interacted freely and posted replies of admiration to male students' comments without feeling shy or embarrassed, which is a kind of behaviour not easily achievable or acceptable in face-to-face discussion:

Ext.5.1:

Message no. 292[Branch from no. 280]
Posted by AHMED on Monday, December 1, 2008 11:01am
Subject: Re: Me & English

You should thank that teacher for punishing you, it was the right decision.

Ext.5.2:

Message no. 364[Branch from no. 292]
Posted by KHADIJA on Sunday, December 7, 2008 4:53pm
Subject: Re: Me & English

hehehe ... well Ahmed I'm still searching for her...
she was a great teacher and I really would like to tell her that i'm studying English now: D and thank her for all this...
Thanks alot for your reply

Scrutinising the transcripts also revealed another change in gender-related behaviour. Female students used some male expressions such as '*guys'* and '*What's up dood*?' to address other female peers, probably because they found the discussion board a convenient platform for greater gender equality.

Ext.5.3:

Message no. 74[Branch from no. 72]
Posted by AMINA S.A. on Thursday, October 2, 2008 4:23pm
Subject: Re: What happened?

guys!!!!
you can go where ever you want when you get married.....
HA HA HA!!!!

Ext.5.4:

Message no. 407[Branch from no. 397]
Posted by MARWA on Saturday, January 3, 2009 9:34am
Subject: Re: The role of women

What's up dood? U should really chill Wafa! Off course women nowadays are even better than the men in many places and attitudes.

One might argue here that female students outperformed males in their online participation rate partially because females outnumbered males (17 females vs. 4 males). It has to be noted that this is typical of most *UoB*'s courses in which almost

70% of students are females, according to the *UoB*'s official website. However, we saw earlier how male students dominated in-class discussion although they were outnumbered by their female peers (*see* Table 5.7 above). Although females are more than males, in-class discussion is more dominated by males due to the conservative cultural stereotypes of gender roles, a behaviour that is reversed in the online discussions. Online discussions appear to have been more female-dominated unlike in-class discussion (*see* Table 5.7 above). What might support this assumption is the fact that males' online contributions gradually lessened towards the end of the semester possibly because they felt that the discussions were 'feminine' and hence, felt less encouraged to participate.

Ali, although a high achiever, had a relatively low participation rate (n=21 postings) in comparison to that of female high achievers like *Fatema J.* (n=48 postings). Also, not only *Ali*'s postings were limited, but his contributions were short and indirect. None of his replies included a direct reference to any female students' responses possibly in fear of offending them, a cultural behaviour often hindering male-female interaction in the Arab world. In the following discussion about gender differences, *Ali* sends his initial posting which *Wafa* and *Fatima A.J.* find intimidating and reply defensively. *Ali*, however, replies back defending his viewpoint without directly addressing the two females or discussing their replies:

Ext.5.5:

Message no. 395[Branch from no. 392]
Posted by ALI on Monday, December 29, 2008 2:12pm
Subject: Between the past and the present

Over the past few decades, most societies have changed their values and their way of life. In the Arab societies, which are very conservative, people were very hesitant about the idea of letting women study and work. The roles in life were divided so typically. Men had to work and earn money while women were stay at home and raise the children. But all that has changed in these days. People are becoming much more accepting for the idea that women should contribute more in the community. Now most women are studying and working exactly like men. It becomes regular to see a female minister or even president.
There is no question that women are playing an important role in the community development, but let's bear in mind that they have another role which is looking after their kids.

Ext.5.6:

Message no. 396[Branch from no. 394]
Posted by WAFA on Monday, December 29, 2008 5:04pm
Subject: Re: Between the past and the present

Well, Remember Ali that "looking after their kids" is the mission of both fathers and mothers.

Ext.5.7:

Message no. 399[Branch from no. 394]
Posted by FATEMA A.J. on Tuesday, December 30, 2008 12:45am
Subject: Re: Between the past and the present

I think that most women are dealing with both: work and raising kids, and they are making a balance between them, which means that the woman can act more than one role in her society.

Ext.5.8:

Message no. 401[Branch from no. 392]
Posted by ALI on Thursday, January 1, 2009 11:39am
Subject: Re: Women Role

When women do the house works that does not mean that they are living under men's shadows. After all, duties should be distributed equally between men and women.

This finding seems to present a different understanding of gender roles in discussion boards. While most studies in this field have either found gender equality (Davidson-Shivers *et al.*, 2003) or male-domination of online communication (Blum, 1999), I found some male antagonism towards female-domination of communication. I believe that this could be attributed to the introvert norms of communication the Arab culture has enforced upon females, who probably found the online discussion a convenient milieu to rebel against these norms and project themselves as equal or superior to their male peers (*see* Chapter 7 for teachers' comments). Means of encouraging equal gender participation are discussed in Chapter 8.

I also observed that there was a gender difference in the content and writing styles of students' online postings. Most male students' postings like *Ali*'s were short, informative and abstract while female students' messages were longer, more personal and explanatory. Female students' postings often contained references to family, self or life experiences, while there were no similar references in the males' postings. Perhaps female students gave a lot of importance to establishing and maintaining relationships

with their peers (Blum, 1999), and therefore used positive expressions showing gratitude and support (e.g. *thank you, I feel sorry for what happened to you, etc.*) in addition to mitigated criticism when in disagreement by using expressions such as *I agree with you but...* (*see* 5.4.6.3 below). While Yates (2001) posits that there are different topic selections in males and females' online postings (*see* Figure 5.7) , Wu and Hiltz (2004) argue that "Women tend to provide mitigating and social comments while men address issues directly and eventually - via discussion – downplay the female contribution" (p.143).

Figure 5.7: Yates' (2001) Classification of Topic Selection and Gender in CMC Interactions

Gender	*Most postings* ⟵⟶			*Least posting*
Women	personal	queries	information	issues
Men	issues	information	queries	personal

The following discussion between a male student, *Mohamed*, and some of the female students provides better insights on the gender difference in writing styles:

Ext.5.9:

Message no. 245[Branch from no. 243]
Posted by EMAN on Tuesday, November 18, 2008 12:58pm
Subject: Re: Will you be employed?

It's nice idea Fatima to have your own store but I think it's not Justice that after all these years of studying we don't get jobs.

Do you agree with me??

Ext.5.10:

Message no. 246[Branch from no. 241]
Posted by MOHAMED on Tuesday, November 18, 2008 2:24pm
Subject: Re: Will you be employed?

I don't agree with you, getting a job here in Bahrain had become very difficult, and many university graduated have become much more accepting to work in jobs do not suit their qualifications and potentials. But to be fair, some fields are developing fast, and they are creating good opportunities for the job seekers.

Ext.5.11:

Message no. 250[Branch from no. 245]
Posted by FATEMA T. on Wednesday, November 19, 2008 7:06pm
Subject: Re: Will you be employed?

First of all, thanks for your comment Eman and I really do agree with you.

But for me I prefer doing what I love to do instead of sitting at home and waiting for the job, and works of art are things of which I love to do. However, I don't think that staying at home without a job for two or three years is a bad thing if we managed to use that time in the right way, in doing useful things for us in particular and for others in general.

I would like also to *say thank you* for Isra and Mohammed for their comments.

The second extract, written by a male student, is direct, formal and very informative, while the first and third extracts are personal, informal and social Although Fatema disagrees with Mohamed, she uses mitigated criticism to avoid hostility and to establish social ties while Mohamed clearly announces his disagreement right at the beginning of his argument. This difference in the writing style could be attributed to females' preference to learn in a more connected social setting than males, as also found by Blum (1999) and Davidson-Shivers *et al.* (2001). The latter study considers the outperformance of majority-female groups in the amount of participation in online discussion a natural reaction to the traditional stereotypes of how each gender should communicate in face-to-face dialogues: while females tend to elaborate and provide support throughout any conversation, males tend to be less elaborate and only offer support at the end of the conversation (Tannen, 1991; Wojahn, 1994).

It is also possible that female students participated actively because they felt that the discussions were monitored by an authoritative adult, the teacher, whom they probably expected to maintain discipline and the cultural norms in the discussion board (Herring, 2003).

Based on these findings, it would be appropriate to conclude that the discussion board could be a suitable tool for promoting gender equality and female authorship and participation especially in conservative L2 settings in the Arab world.

5.3.4 Interactivity in the Discussion Board

Another factor that could have influenced students' participation is the *enhanced interactivity* with peers(*see* Chapter 2). The content analysis revealed that there was a high level of interactivity between students in the discussion board.

This was evident in how some students were reading their peers' initial postings, replying to them, waiting for responses and then submitting their own initial postings, which were expected to be posted first (n=20 cases). Some other students did not occasionally post the initial contributions but only responses to a number of peers' initial postings. This suggests that peer responses were possibly important for these students to construct or re-construct knowledge and relationships and also to their sense of social presence in a community in which their membership was important (*see* 5.3.5.2).

I also noticed that some students' participation rate significantly decreased towards the end (e.g. *Isra* and *Wafa*) possibly because of reduced peer response or acknowledgement. This might imply how highly students in the online settings appreciated peer response and interaction and how it could have positively or negatively affected their participation.

The following sub-sections identify students' levels of interaction (*monologic, dialogic* or *reflective*) using content analysis. In doing so, only the responses and follow-ups were included in the analysis because the initial postings were argumentative but not interactive in nature.

5.3.4.1 Levels of Interaction

The notion of interaction in online settings has been discussed earlier in the literature review (*see* 2.2.3). In addition, a number of studies have discussed different levels of interaction in asynchronous settings (Henri, 1992; Jeong, 2003), while Lamy and Goodfellow (1999) have proposed a taxonomy of three levels of interaction: *monologic* [no invitation to interaction], *conversational/dialogic* [of social nature] and *reflective* [negotiation of meaning by using formal language features for personal exchanges].

Their taxonomy is related to Bakhtin's (1981) *Theory of Dialogism*, which views language as "part of a larger whole or social context in which all possible meanings of a word interact, possibly conflict, and affect future meanings" (Jeong, 2003: 28). The theory emphasises that deep understanding of the different conceptions through dialogic reasoning is imperative to allow for inquiry and reflection organised by the interactional conflict. Celce-Murcia and Olshtain (2000) explain that discourse is monologic when "the writer produces discourse with no or limited interaction" and dialogic when "two or more interact and construct discourse" (p.5).

This study followed Lamy and Goodfellow's taxonomy in analysing the responses. Entries were coded to find the frequency of each level of interaction (*see* Appendix K.). An agreement level of 91% was reached with the additional rater, Mr. M.M., during coding and analysis phases. The following extracts exemplify the different levels of interaction found in students' responses. While Ext.5.12 is entirely monologic, Ext.5.13 is dialogic and the last one is reflective.

Ext.5.12:

Message no. 135[Branch from no. 132]
Posted by FATEMA J. on Sunday, October 26, 2008 12:24pm
Subject: Re: What makes you happy?

I have experienced so many losses in my life which made me realize the value of relationships a little too late! I hope we all honor our relationships in life and forget the silly money for it is of no value when compared to our family and loved owns. They give us all we need to be better and embetter our world and no money in the world can do that.

Ext.5.13:

Message no. 231[Branch from no. 214]
Posted by EMAN on Monday, November 10, 2008 2:19pm
Subject: Re: An amazing thing

Thank you Ali and Marwa

and thank you doctor ^_^

Balqees I really hope to go at that time because I think that very important to us as muslims to know more about our prophet also I think in that time all the arab area change because of him.

Ext.5.14:

Message no. 175[Branch from no. 172]
Posted by MOHAMMED on Sunday, November 23, 2008 10:30am
Subject: Re: Will you get employed?

What?!

Why do we bother and think about our future!

Come on Amina, if we do not think and plan from now, how will we then gain access to the comfort of life we have dreamt all our lives? How can we assure that dream house of ours, that dream wedding and all that comes along?!?!

We ought to think from now because it is not only difficult in such a small country with a rapidly growing population as Bahrain, it is impossible unless you outstand those who compete with you, nevertheless, not care about it, then we will not stand a chance!

Findings (*see* Table 5.8 below) show that students' responses were mostly conversational/dialogic although they were expected to be more critical and reflective. This might imply that students found the discussion board a rich social environment in which they were able to form social relationships with peers whom they do not often get to know in normal classroom settings.

Table 5.8: Levels of Interactivity in Students' Responses and Follow-ups

	Monologic	**Conversational/Dialogic**	**Reflective**
Frequency	24	203	119
Percentage	7%	59%	34%

It was noteworthy that students who posted most of their responses in monologic styles did not receive many replies from peers. For instance, *Mona* hardly ever replied to other students' initial postings and responses. In her replies, she never addressed a student by name or engaged in a direct argument with a peer, and hence did not receive many responses (also *see* Figure 5.7 above).

It is possible that these monologic responses were submitted only to impress the teacher or practise additional linguistic output rather than to interact with peers (Rogers, 2006). However, although this might be considered a negative behaviour, Hammond (2000) highlights the importance of respecting students' choice of interaction level and argues that monologues could still enhance learning particularly when they are self-explanatory.

Ext.5.15:

Message no. 131[Branch from no. 122]
Posted by MONA on Sunday, October 26, 2008 12:20pm
Subject: Re: What makes you happy?

family and friends are the most important then anything not just money ....it's a simple fact take this for an example imagin yourself sitting in a coffee shop or in a restaurant having your lunch with all your beloved ones surrounding you laughing ,making jokes, telling stories anything you would imagin you will only feel the joy, excitement and relaxation .....
That what is important, in my side i just love having a lot of friends who you know that they will support you during you problems and needed times.

i just love people or else i don't think that i would dare to live lonely i hate being lonely!!

It was observed, however, that almost 67% of the monologic responses occurred before the second half of the semester. Students' behaviour changed as the course progressed as they started interacting with peers in a more dialogic manner. It is possible that some students, who were initially anxious or had little social relationship with the others in the normal classrooms, started to appreciate the social nature of the discussion board and eventually became more dialogic. Wells and Arauz (2006) state that the interlocutor "does not expect passive understanding that, so to speak, only duplicates his own idea in someone else's mind. Rather he expects response, agreement, sympathy, objection, execution and so forth" (p.384).

Isra's postings, which were mostly monologic until the middle of the semester, became more dialogic during the remaining period. It is possible that she noticed that students who were more dialogic got more responses while she hardly received responses on her monologic comments, such as the extract below:

Ext.5.16:

Message no. 173[Branch from no. 166]
Posted by ISRA on Tuesday, October 14, 2008 11:49am
Subject: Re: My Opinion in Technology

A lot of student are addict to surfing in the net and it become an essential part in their life whether they use it right or to waste time

However, later postings showed her use of anaphoric reference to peers' responses (*see* Ext.5.17) or of personal names (*see* Ext.5.28), which are techniques used to invite

others to interact and exchange ideas openly (Coffin, Curry, Goodman, Hewings, Lillis&Swann, 2003).

Ext.5.17:

Message no. 235[Branch from no. 220]
Posted by ISRA on Monday, November 10, 2008 9:06pm
Subject: Re: Greek Ancient Time...

I see what you mean, it's really interesting to see their plays which represent their culture and religious

Ext.5.18:

Message no. 236[Branch from no. 216]
Posted by ISRA on Monday, November 10, 2008 9:19pm
Subject: Re: Where would you go?

Don't regret anything you've done *Mariam* because if you haven't made mistakes you wouldn't reach this state of mind and never learn from it.

Scrutiny of the transcripts also showed that some students made reflective responses while other students restated them or simply agreed on them in a dialogic manner. For example, *Zahra A.M* below replied to a student who was calling for financial management.

Ext.5.19:

For me money is not everything in life, I thing being happy with my family is the best thing. Although everyone has his-her own dream, it will be a nice dream if I won one million BD, because so many things in my mind I want to do with them. First of all I will complete my study at UK and then I will buy a new expansive car and big house. In addition to that I will help my family, who need money, give my parents half of the money and save some of them. Also I would like to open my own business and travel to my favorite countries which are Japan, Spain, and South Africa. Finally I will go shopping in France.

However, most of the responses she received were dialogic rather than reflective:

Ext.5.20:

Message no. 339[Branch from no. 325]
Posted by MARWA on Thursday, December 4, 2008 9:45am
Subject: Re: My dreams would come true :P

you fond of shopping, are'nt you?
your money will finish faster than to think so try to be wiser!

Ext.5.21:

Message no. 347[Branch from no. 330]
Posted by SUMAT on Thursday, December 4, 2008 9:50am
Subject: Re: I will...

You are very generous....

You think about your family first ... I hope you will get the million in real life and do every thing you dream about...

All the best ...

Ext.5.22:

Message no. 356[Branch from no. 330]
Posted by FATEMA A.J on Friday, December 5, 2008 6:59pm
Subject: Re: I will...

I really hope that you will get a million dinars one day because you really deserve it; you think of people around you and remember yourself at the end.

It has to be mentioned, however, that students were not always dialogic, as students' responses became almost equally dialogic and reflective during the second half of the semester (*see* Table 5.9 below). This might indicate that students' responses became more balanced and mature after the novelty factor of using the medium and establishing peer relationships faded out, and that students possibly recognised the role their individual contributions played in the discussions.

Table 5.9: Levels of Interactivity during the 2nd Half of the Semester

	Monologic	**Dialogic**	**Reflective**
Frequency	16	69	63
Percentage	11%	46.5%	42.5%

In sum, it seems that students preferred to engage in more dialogic exchanges with their peers than monologic or reflective ones. It is possible that more reflective interaction could have taken place if the use of the medium lasted longer.

Following Ortega's (2009) supposition that interaction often leads to the modification of the comprehensible input the learner receives while interacting, I scrutinised the transcripts to found instances of these modifications. These modifications are often investigated by moves that the interlocutor uses while negotiating meaning with others.

5.3.4.2 Most Frequent Functional Moves

In order to observe students' online dialogic behaviour further, I examined students' most frequent *functional moves* (Coffin, 2006; Coffin, North & Martin, 2009; Sinclair & Coulthard, 1975) using Booth and Hulten's (2003) *taxonomy of content-related contributions* and their coding system. This taxonomy identifies four types of contributions: *participatory, factual, reflective* and *learning*, each with some representative functional moves (*see* Table 5.10 below). However, only the first three types were analysed while *learning* was not investigated because I found some overlapping results with the other types, as also suggested by Coffin *et al.* (2009).

Analysis revealed that students had more participatory moves (40%) than factual or reflective moves (84% agreement with the rater). This finding supports earlier studies on students' dialogic interactions. It appears that students were more eager to acknowledge the presence of their peers than to solve occurring problems or reach conclusions on the topics discussed, which could be equally considered a shortcoming of using the discussion board, especially if a teacher's aim is to develop students' argumentative and critical-thinking skills. I find this observation important in helping us understand students' desire to engage in interactive dialogues with peers, and thus aim at providing students with interactive tasks and with guidelines and linguistic knowledge necessary for successful critical f2f and online discussions.

Table 5.10: Most Frequent Functional Moves

(*Booth and Hulten's (2003) Taxonomy of Contributions*)

Contribution Type	Functional Move	Code	Frequency	Percentage %	Overall %
1. Participatory Contributions ***(to confirm participants' presence)***	**1. Address by name (N)**	**PN**	121	26%	40%
	2. Refer to another post (R)	**PR**	150	32%	
	3. Acknowledge each other's contributions (A)	**PA**	107	23%	
	4. Encourage each other (E)	**PE**	90	19%	
2. Factual Contributions ***(to refer specifically and exclusively to the problem in hand)***	**1. State or propose (S)**	**FS**	203	51%	34%
	2. Elaborate or explain (E)	**FE**	156	39%	
	3. Ask (A)	**FA**	39	9.8%	
3. Reflective Contributions	**1. Agree(A)**	**RA**	205	66%	26%
	2. Disagree (D)	**RD**	50	16%	
	3. Compare, problematise, isolate a detail (C)	**RC**	54	17%	

The table shows that students in 42% of the participatory moves were either encouraging or acknowledging each other's' contributions. Hyland (2000) mentions that this kind of conforming behaviour is often used at "the openings of addressee-oriented speech events" (p.53), as evidently found in the transcripts:

Ext.5.23:

Message no. 265[Branch from no. 242]
Posted by ISRA on Saturday, November 22, 2008 12:10pm
Subject: Re: In my case...
I think you shouldn't be pessimistic about finding a job, maybe god arranged for you good things for future.

Ext.5.24:

Message no. 269[Branch from no. 268]
Posted by EMAN on Sunday, November 23, 2008 8:23pm
Subject: Re: Getting a job
I like your idea Balqess about looking for a job from know because working experience important to improve our skills.

Ext.5.25:

Message no. 203[Branch from no. 181]
Posted by FATEMA J. on Wednesday, December 3, 2008 1:59pm
Subject: Re: What happened?

I am sorry to hear about your difficult start *but happy* to know how brave and accomplishing you are today. I wish you all the best for the future and hope that you benefit from all such lessons in the best way possible =D !!

Ext.5.26:

Message no. 327[Branch from no. 325]
Posted by SUMAT on Thursday, December 4, 2008 9:33am
Subject: Re: My dreams would come true :P

Its very kind of you to give needed people and charities...
I hope your dreams come true...

Ext. 5.27:

Message no. 336[Branch from no. 330]
Posted by MARWA on Thursday, December 4, 2008 9:44am
Subject: Re: I will...

you seem very generous!
I think you think first of other people before yourself and that's great!

The extracts above show how supportive and encouraging students were. Female students in particular were exchanging complements (e.g. *Ext. 5.27*) and sympathy (e.g. *Ext. 5.25*).Another similarity with Hyland's (2000) findings is that the use of particular adjectives such as *nice, interesting, lucky,* and *wonderful* marked most of the encouraging and praising comments and at the beginning of the responses:

Ext.5.28:

Message no. 258[Branch from no. 242]
Posted by MARWA on Friday, November 21, 2008 10:25am
Subject: Re: In my case...

It is nice to accept our situation and work to make it better! Don't be negative, who knows you may find the job that you dream about!

Ext.5.29:

Message no. 329[Branch from no. 326]
Posted by KHADIJA on Thursday, December 4, 2008 9:38am
Subject: Re: Future!!

What a wonderful idea. It is great that you think about your future from now by spending the money on your education and doing some personal business.
I Hope all the best for you.

Ext.5.30:

Message no. 130[Branch from no. 120]
Posted by AMINA S.D. on Sunday, October 26, 2008 12:19pm
Subject: Re: What makes you happy?

Nice words what you have written Mona. I also agree with you especially if you have an ideal parents or lovely husband. It is extremely fantastic to be in love with someone and also it is more wonderful to have someone love you like your baby. Because, it is too painful to have a lot of money without have one child who bring happiness to your life.

Ext.5.31:

Message no. 267[Branch from no. 250]
Posted by SAWSAN on Friday, January 2, 2009 5:02pm
Subject: Re: Where have you been to?

Fatoom,
You are lucky to be accepted in this program and pay a visit to Jordan. Wish you go there and enjoy its wonderful monuments.

The extracts above show the positive adjectives students used frequently to express their admiration and support to their peers. In sum, students made more affirmative than reflective or factual functional moves during peer interaction. Student interviewees presented a number of reasons behind this affirmative behaviour (*see* Chapter 6).

- ***Interactional Modifications***

Interactional modifications are considered important because of their contingency, as they show that students are engaging in "just-in-time learning" (Ortega, 2009: 62). Scrutiny of the transcripts also revealed instances of interactional modifications in students' identification and use of peers' linguistic choices. For example, the sentence '*I didn't realize at the time, but it was the best thing that ever happened to me!'* was initially used by *Khadija* but was later used in separate occasions by other students:

- *Fatma J.: True, I regretted joining UoB a few times, but I didn't realize at the time, but it was the best thing that ever happened to me!*
- *Wafa: It was my husband's decision that brought me to this. I didn't realize at the time, but it was the best thing that ever happened to me!*
- *Balqees: I designed my own website for delicious cookies it and it had been extremely successful. I did not realize at the time that it was the best thing that ever happened to me.*

Similarly, a number of students integrated *Eman's* use of the formulaic expression '*In the next few years, I hope I could ...'* in their own posts later:

- *Zahra A.: In the next few years, I hope I could graduate from the University Of Bahrain with good grades and get a good job*
- *Fadheela: In the next few years, I hope I could finish my studying and to get job. :)*

Another example is *Wafa*'s use of *Marwa*'s expression *'shed tears'*:

Ext.5.32:

Message no. 78

Posted by MARWA on Tuesday, September 30, 2008 10:55pm

Subject: andalouse is my dream

Al-Andalouse is one of most beautiful countries in the world. And I wish to visit it because I want to remember all our late history when we were lords of the earth, when we flew in the sky of the knowledge , when we left ourselves in the centre of Islam , breathing it's fragrance.

Cordova the capital city is inspire me , I cant wait until I can visit it, melt my soul with it's walls , and touch its Mosque which is more beautiful than any other Mosque. ***I will shed tears*** when I stand face to face with this Mosque , and find it empty from worshipers.

Ext.5.33:

Message no. 99[Branch from no. 78]

Posted by WAFA on Saturday, October 4, 2008 2:04pm

Subject: Re: andalouse is my dream

The hope in your words is very great. I don't know you and I feel that you are so active in this life because you want to study and to be something and you are so proud of your people, culture and traditions and I'm so proud of you.

Actually, AlAndalus nowadays status makes every muslim ***shed tears*** for it because we governed it for eight centuries and now Islam and muslims are the most disliked people there. Shame on us to waste all what our grandfathers have done there. I hope your dream turns to be truth one day.

I also found a number of phrases that might signify students' awareness of their peers' writing styles and linguistic choices, as in the following extracts of the posts:

- *Fatema A.J.* [Message no. 263]: I like your hopeful words
- *Fatema J.* [Message no. 69]: I found your text very interesting to read...
- *Balqees* [Message no. 68]: Your writing is very nice because you choose nice and strong words to describe what happened... your hands write wonderful and more than wonderful topics.
- *Wafa* [Message no. 99]: The hope in your words is very great. I don't know you and I feel that you are so active in this life...
- *Fatema T.* [Message no. 89]: I really loved your description. I felt your love to this ancient place.

I find it noteworthy here to mention that these findings are important to this study, as it appears that peer interactivity involved a number of learning strategies could have played a major role in influencing students' intentional and incidental learning and deploying cognitive and meta-cognitive learning strategies and drives while using the discussion board. Content analysis, however, also revealed possible instances of negative outcomes of the increased online interactivity.

5.3.4.3 Negative Effects of Interactivity

a. Mitigated Criticism

A key finding was students' extensive use of agreement phrases and politeness devices, as seen above, although the genre of the discussion board is intended to be argumentative and critical. Table 5.12 above shows that students mostly provided affirmative responses to their peers' comments (66%), while disagreement was not very frequent (16%). A number of other studies had similar findings of decreased opposition and criticism in online discussions (Coffin, 2006, Coffin *et al.*, 2009; Hyland, 2000). In his corpus, Hyland found that giving praise "comprised over half of all evaluations and functioned to express solidarity and positive assessment and to mitigate criticism" (p.52).

Similar to Hyland's (2000) findings, I found that the majority of disagreement was mitigated and supported with explanations and justifications, as students first recognised the soundness of their peers' stances and then disagreed with them in a mitigated tone:

Ext.5.34:

Message no. 174[Branch from no. 171]
Posted by FATEMA J. on Sunday, November 23, 2008 10:25am
Subject: Re: Will you get employed?

Hi Fadheela,

I really liked your entry but I wanted to make some mistaken idea clear. A lot of women today do not know what they really want equality or fair treatment which is derived from justice. This confusion is what causes a lot of issues regarding gender roles in society for we all know that females and males are different but we need to embrace those differences and look for the fair treatment that is based upon them.

Ext.5.35:

Message no. 102[Branch from no. 97]
Posted by ZAHRA A. on Sunday, October 12, 2008 1:04am
Subject: Re: Speak your mind

I agree with you Amina when you said that the radio is important in the car, *but I think* we can watch TV programs in other media like the internet

Ext.5.36:

Message no. 171[Branch from no. 166]
Posted by EMAN on Tuesday, October 14, 2008 11:42am
Subject: Re: My Opinion in Technology

I agree with you that TV and the Internet are the most important things *but I disagree with you* about what you say about the newspaper because I think read newspaper so boring you can get the news from TV, Internet and radio.

All the students in these extracts used structures such as *'I liked your entry but...'* or *'I agree with you but...'* to soften their criticism of their peers' viewpoints. Students combined criticism with praise using devices such metaphor or hedging (e.g. *it could be, one might consider, it seems that, perhaps*), which often help soften criticism and show a positive reader-author relationship. Another strategy for mitigating criticism was to present it as a personal opinion (e.g. *I think, in my opinion, personally*). A final strategy was attributing "critical comments to an abstract reader or general audience" (e.g., *everyone, readers, we*) (Hyland, 2000: 58).

Ext. 5.37:

Message no. 102[Branch from no. 97]
Posted by ZAHRA A. on Sunday, October 12, 2008 1:04am
Subject: Re: Speak your mind
I agree with you Amina when you said that the radio is important in the car, *but I think* we can watch TV programs in other media like the internet

Ext.5.38:

Message no. 449[Branch from no. 397]
Posted by HUSSAIN on Sunday, January 4, 2009 8:48am
Subject: Re: The role of the women

Wafa *I think* both men and women role changed but women role change more than men

Ext.5.39:

Message no. 175[Branch from no. 172]
Posted by MOHAMMED on Sunday, November 23, 2008 10:30am
Subject: Re: Will you get employed?

What?!
Why do we bother and think about our future!

Come on Amina, if *we* do not think and plan from now, how will *we* then gain access to the comfort of life we have dreamt all our lives? How can *we* assure that dream house of ours, that dream wedding and all that comes along?!?!
We ought to think from now because it is not only difficult in such a small country with a rapidly growing population as Bahrain, it is impossible unless you outstand those who compete with you, nevertheless, not care about it, then we will not stand a chance!

Ext.5.40:

Message no. 168[Branch from no. 166]
Posted by FATEMA J. on Wednesday, November 19, 2008 10:26am
Subject: Re: Will you get employed?

What you are doing Amina is really good because not many of us are aware that *we* need to have an idea now while studying and not when we graduate which is too late! However, most of the business majors today are almost full because *EVERYONE* is studying such majors and leaves the other ones thinking they might not have a better chance in getting a job after graduation.

I believe that our major, the English Language major, is the most wanted because *we* can almost work anywhere we wish, in companies, institutions, schools, hospitals, embassies and even in markets for English is the business language today.

Another possible reason for the mitigated criticism could be related to students' varied academic level. Most students who challenged their peers' viewpoints were high achievers, who had the proficiency required to support such challenges. It was the average and low achievers who were mostly affirmative, possibly because they could not use complex structures and lexical expressions to disagree with a peer or present counter-arguments. For instance, *Ext.5.41* below was written by a high achiever who had the linguistic competence necessary to counterclaim and refute another peer's response while the last extract was posted by a low achiever who used simple structures to respond in agreement with other students' viewpoints. *Ext.5.42*, however, was posted by an average student who used mitigated criticism with simple syntactic structures.

Ext.5.41:

Message no. 110[Branch from no. 93]
Posted by SAWSAN on Tuesday, October 14, 2008 8:34am
Subject: Re: Speak your mind
Hi Zahraa

I don't think so, because people nowadays are using technology to read the Newspaper.
In the future there will be great inventions to make reading the newspaper easily.

Ext.5.42:

Message no. 176[Branch from no. 174]
Posted by AMINA S. on Sunday, November 23, 2008 4:59pm
Subject: Re: Will you get employed?

hi Fatema>>>you got soo excited
I really meant what I said....we have no control on our future and we do not know what is hidden for us....i do my best right now in focusing on my studies and I leave the rest on god, as we say in arabic (خلي الباقي على الله)

:-)

Ext.5.43:

Message no. 447[Branch from no. 392]
Posted by HUSSAIN on Sunday, January 4, 2009 8:29am
Subject: Re: Women Role

I agree with you Fatema that the woman before was weak, opposite of the man

However, it seems that the use of the discussion board eventually helped some of these weak students extend their linguistic knowledge as they progressed towards the end of the semester. It is possible that more time was needed for the effects of using the discussion board to take place, as discussed earlier (*see* Chapter 3).

In sum, it could be concluded that while students mostly supported their peers' opinions, they were equally voicing their opinions but in a mitigated manner. According to Hoey (2001), "Text does not exist except as part of a commitment to interaction in which each contributor to the interaction has needs to meet at the same time as respecting the needs of the other" (p.7). This finding necessitates an investigation of students' sense of presence as another possible factor influencing participation in the online discussions (*see* 5.3.5).

b. Use of peers' erroneous linguistic choices

Exposure to peers' lexis or grammatical structures is not advantageous in every respect. Scrutiny of transcripts revealed instances of minor erroneous imitations of expressions and structures, which might further suggest the importance of consistent and appropriate input. For example, a high achiever like *Fatima J.* imitated another student's use of salutation, closings and initials at the end of her posts and continued doing so until she realised that it was not necessary since the discussion board provides enough information on the sender and the recipient(s).

Ext.5.44:

Message no. 106[Branch from no. 96]

Posted by FATEMA J. on Tuesday, October 14, 2008 5:28am

Subject: Re: Speak your mind

Hi Zahra,,

True people tend to find it much easier and appealing that newspapers are available online.

I have a few comments about your entry that I hope will be useful =),,,

U used *so* in your article and then inserted a comma " , " it should be before so or without a comma ..

Another thing is, in the ending "All in all" should be followed by a comma because it is a linking word that needs to be followed by one.

Finally, the Internet has no plural as far as I know so it is better to say the internet is such and such =)

Hope you find my comment handy =D

Regards,

FJ

Ext.5.45:

Message no. 71[Branch from no. 57]

Posted by SAWSAN on Thursday, October 2, 2008 8:15am

Subject: Re: Speak your mind

Hello Zahra,

Although it is too expensive to pay a visit to the United States, I hope you could overcome your obstacles and be there some say in the future.

With regards,

Sawsan

In sum, these discussion extracts suggest that students read their peers' contributions and make use of their styles and structures considering them comprehensible input. However, although minor peer errors were found, literature shows that this issue has been controversial among researchers, most of whom underestimate the influence of these errors on students' interlanguage development (Ellis, 1997; Ferris, 2003). Conversely, it is often the case that students scaffold the learning of peers. Lundstrom and Baker (2009) found that students who reviewed peers' writing developed writing quality more significantly than students who received peer response. They state that "learning to review others' writing improves one's writing" (p.38). Experimental students' interview responses seem to support Lundstrom and Baker's findings in this regard (*see* Chapter 6). Likewise, active peer response also encourages students to develop a sense of presence that can lead them to participate more actively and frequently. Analysis of students' possible sense of presence is presented in following section.

5.3.5 Sense of Presence

It is possible that students' sense of presence influenced their online involvement. Certain linguistic features used by these students suggest that they probably considered the discussion board a convenient milieu to view and project their authorial presence and to realise their membership in an educational social community in which their presence was vital (*see* Chapter 2).

5.3.5.1 Authorial Presence

Authorial presence has been widely investigated in online written communication (Flottum *et al.*, 2006; Hyland, 2001; Kramer, Oh & Fussell, 2006; Matsuda, 2001; Steuer, 1992). Many of these studies measured authorial presence using linguistic features that exhibit subjectivity or self-mention (Hyland, 2001) such as the use of: *first person pronouns, indefinite pronouns, local and remote deixis, parentheticals, adjectival and adverbial modifiers, positive and negative lexis, lexis that exhibit social and cognitive processes, quotation marks, and stylistic shifts*.

Scrutiny of the transcripts using *WordSmith Tools* revealed frequent use of linguistic features that reflect authorial presence and show how students projected their individual "selves" to the online community: *first and second person subject pronouns*, and *local/remote deixis.*

a. Use of first person pronouns

Hyland states that first person pronouns "are not just stylistic optional extras but significant ingredients for promoting a competent scholarly identity and gaining accreditation for research claims" (p.233), and emphasises the importance of raising students' awareness of the use and usage of the first person whilst reading to improve their writing quality. Hyland's argument was supported by Flottum *et al.* (2006) and Ivanič (1998). Analysis of the corpus found significant use of first person singular and plural pronouns in the subject function:

I. First person singular pronoun:

Findings showed high frequency of first person singular pronouns, as there were 1,759 relative frequencies of *I* (standard frequency ratio=29:1000), 24% of which collocated with verbs in cognitive phrases such as *I believe, I know, I realise, I imagine, I agree, I mean* and *I think* while collocates referring to personal preferences such as *I feel, I hope, I wish, I love, I enjoy, I like* and *I prefer* constituted 23% (n=408). The total percentage of these collocates (47%) in the corpus suggest authorial assertiveness targeted at establishing self in front of the other (Flottum *et al.*, 2006; Hyland, 2001), although excessive use of first person singular pronoun could also suggest the discoursal resemblance to spoken language.

II. First person plural pronoun:

Another frequently used pronoun was the first person plural pronoun. Scrutinising the data revealed that there were 341 occurrences of *we* in the corpus (standard frequency ratio=7:1000), as shown in Table 5.11 below.

A number of functions of first person plural pronoun *we* have been identified by Flottum *et al.* (2006) such as the exclusive *we*, "referring to several authors" (p.96), the inclusive *we*, "where the author creates a common ground for him- or herself and the reader, a central rhetorical means of creating agreement" (p.68), the inclusive *we* for *you*, and the authorial *we*, "where one author refers to him- or herself alone by means of the plural" (p.68). Table 5.11 below shows the frequency of the four types of *we* in the corpus.

Table 5.11: Frequency of Different Uses of *we*

	Exclusive *we*	Inclusive *we*	Inclusive *we* for *you*	Authorial *we* for *I*
Frequency	145	182	8	6
Percentage	42.5%	53.5%	2.3%	1.7%

The following transcript extracts show the different uses of *we* students used to project their authorial presence in the discussions:

a. (Exclusive *we*):
   i. It was a great vacation. When *we* arrived to the flat *we* were really exhausted because *we* went there by bus.
b. (Inclusive *we*):
   i. I love India! *We* have this stupid assumption that it is a very dirty country when in fact it…
   ii. *We* have so much ego as Bahrainis that we do not settle for what is good …Don't you agree?
c. (Inclusive *we* for *you*):
   i. Will you get employed? What?! Why do *we* bother and think about our future? Come on Amina…
d. (Authorial *we* for *I*):
   i. What makes you happy? it is obvious that *we* agree with the second opinion it is the right one …
   ii. There is a lot of unemployment because of things anyone can name it but *we* don't want to get deep in political things.

It seems that student used the pronoun more inclusively than exclusively, which might suggest that they were eager to establish some common grounds with their readers/peers and hence, used inclusive *we* to "stress participation in a shared journey of exploration" (Hyland, 2000:127) and hence, diminish the distance between the interlocutors. Example *b.ii* above illustrates a student assuming the role of a spokesperson of all Bahrainis sharing a wrong prejudiced stereotype of another community and invites others to discuss this topic and relate to it.

There were, however, very few occurrences of inclusive *we* for *you* or authorial *we* for *I*, which are often used to mitigate criticism by the use of the first person plural pronoun instead of directing criticism to the reader by using *you* or to the speaker by using *I*. For example, the student below preferred using *we* instead of *you* to moderate her criticism of another student's comments on gender roles without being offensive.

Ext.5.46:

> Islam does not ask us to be the same it simply asks us to act upon our abilities no more no less and we ought to learn the truth behind our religion and not follow what we are given from the others.

Scrutiny of the corpus also found very few occurrences of authorial *we* for *I*. In summary, the relatively frequent use of first person subject pronouns *I* and *we* suggests that students had authorial presence in the discussions.

b. Use of second person subject pronoun

The second person subject pronoun *you* ranked as the second most used pronoun in the corpus after *I* with 558 relative frequencies (standard frequency ratio: 9.5:1000). This finding might possibly suggest that students had a good understanding of the status differentiation in the discussion board and of readers' presence, although the extensive use of *you* in discourse might sometimes signify a detachment between the writer and the reader (Hyland, 2000).

In sum, the high frequency of first and second person pronouns seem to function as an identity marker of self- and interpersonal-reference in the online discussion. This result corresponds with those found by Yates (2001) in his analysis of online identity (*see* Chapter 2).

c. Use of local and remote deixis

Kramer *et al.* (2006) investigated a number of linguistic features that measure personal presence in online settings including the use of local and remote deixis (*here, this, these, that, those, there*) and noticed that local deixis correlated positively with writers' sense of authorial presence. Scrutiny of the corpus revealed that there were 802 occurrences of these deixis (standard frequency ratio: 13.5:1000).

Table 5.12: Frequency of Different Types of Deixis

Deixis Type	**Frequency**	**Percentage**
Local: *here, this, these*	321	40%
Remote: *there, that, those*	481	60%

The table above shows that students' use of remote deixis was more common than their use of the local ones and that the increased use of both types could signify students' high sense of personal presence in the online community.

In sum, it seems that students had a strong sense of authorial presence. That said, Fairclough (2003) argues that authorial presence needs to be interconnected with one's social presence, as people are considered "social agents who do things, create things, change things." However, what determine the effectiveness of this agency are "both the nature of the event and its relationship to social practices and social structures, and the capacities of the agent" (pp.160-161).

5.3.5.2 Social Presence

It is important for us to see how students behaved in the social community found in the discussion board to further understand their overall behaviour towards the others and the rationale behind this behaviour. A number of studies have identified different measures of social presence (*see* Chapter 2). Kramer *et al.* (2006) suggested the frequent use of these measures: *sharing personal information, recognising group presence, complimenting/expressing appreciation, expressing feelings of emotions, stating goal or purpose of participation and expressing motivation about participation*).

Content analysis revealed that there were many occurrences of these measures except for the last three. The majority of the postings were expressive, supportive and affirmative (*see* 5.3.4.2). Also, some students shared some personal information with the entire group. For instance, *Amina* mentioned that she was engaged and about to get married although the context was not appropriate:

Ext.5.47:

Message no. 229[Branch from no. 220]
Posted by AMINA S.D on Tuesday, December 16, 2008 1:37pm
Subject: Re: What would you do?

Oh! My god (AMAZING)!
I am now engaged, so it would be a great chance to do what u have mentioned Mona famous *wedding party* is such a wonderful dream.. But if we did with this money so, so and so, money would not be enough for all these things...
So that, you have to think of it again...

Ext.5.48:

Message no. 281[Branch from no. 233]
Posted by AMINA S.D, on Sunday, January 4, 2009 1:29am
Subject: What happened?

Last month, *my fiancé went to India*. He said that there are many very poor people who sleep outside on the ground... But he lived in very beautiful hotel called" Taj mahel."

Another student, *Zahra*, mentioned in an off-task discussion that she was a mother, posted her son's photo in the discussion board, and asked her peers to comment on his photo:

Ext.5.49:

Message no. 188[Branch from no. 178]
Posted by ZAHRA on Sunday, November 30, 2008 6:36pm
Subject: Re: What happened?

hi everybody... When I was in my second year in the university *I got married* and the last thing in my mind was to get pregnant … *and this is my son Husain*. Of course he look nothing like me, he is exactly his father except for the bold hear [hair], he get that from me :(

Similarly, two students referred to their mother's origin and profession, although this kind of information would not normally be discussed in class:

Ext.5.50:

Well you must be wondering why is I choose Philippines than any other because *my mother is Pilipino and I have family to visit* and in the same time having fun so you can say two birds with one stone. I had a lot of fun there with my relatives from shopping, sightseeing, some sport activates, and I can't forget the beach.

Ext.5.51:

Message no. 260[Branch from no. 254]
Posted by MARWA on Friday, November 21, 2008 10:31am
Subject: Re: To be a teacher is all what I want!!

How wonderful dream !
Be sure that there are many spaces for English teachers I heard that from my mother *because she is working as director* and many teachers from other country came to work as teachers in their school >>

Although this kind of behaviour could be considered inappropriate, it may also suggest students' high sense of social presence in the online community, in which members were possibly expected to share personal information. This sense could have possibly encouraged these students to speak freely and hence, produce more linguistic output at all levels. Recognising group presence was also observed in the use of greetings (e.g. *hi everyone, hello there*) and markers (e.g. *guys, girls*):

Ext.5.52:

Message no. 172[Branch from no. 171]
Posted by AMINA S.A. on Saturday, November 22, 2008 11:13pm
Subject: Re: Will you get employed?

Hellooooo everybody!!!!!
I am aware that we have a problem in employment but this problem is increasing in the whole world day by day and only in our country. As for me, I don't bother myself in thinking about such an issue. I prefer to focus on my studies because this my way in taking life, step by step .I was told that my specialization in English will help me a lot in getting a job on the future but I don't depend on such says. There are some people who are in charge to solve this problem so why do I bother myself with it, I choose to bother myself later.

Ext.5.53:

Message no. 247[Branch from no. 244]
Posted by FADHEELA on Monday, December 29, 2008 12:07pm
Subject: Re: What do you think?

where are you *guys*??

Ext.5.54:

Message no. 74[Branch from no. 72]
Posted by AMINA S.A. on Thursday, October 2, 2008 4:23pm
Subject: Re: What happened?

guys!!!!
you can go where ever you want when you get married.....
HA HA HA!!!!

Some other students used Arabic greetings such as *salam* (i.e. *Peace be upon you*) and *hala* (a colloquial *hi)*, to show a recognition of an Arab audience (*see* Chapter 7 for findings of code-switching or code-mixing).

Ext.5.55:

Message no. 255[Branch from no. 231]
Posted by AFRAH on Thursday, January 1, 2009 10:43am
Subject: Re: What happened?

HALA DEAR,
When i went to UAE i had very interesting trip, that i went to my friend wedding, also i went shopping in different malls like " city center ", also i went with my family to Flower surprises.

Students even used shortened names, diminutives or nicknames to refer to other participants to imply a close and established relationship with the addressee. For instance, many students referred to *Fatma J.* as *Fatoom*, a diminutive used only among close friends and relatives.

Ext.5.56:

Message no. 111[Branch from no. 94]
Posted by SAWSAN on Tuesday, October 14, 2008 8:39am
Subject: Re: Speak your mind
Hi Fatima,
Chatting on the Internet is important to communicate with others especially who live far from you instead of using the phone. In other words it is less expensive. What do you think *Fatoom*?

Ext.5.57:

Message no. 114[Branch from no. 94]
Posted by ZAHRA A.N. on Tuesday, October 14, 2008 10:16am
Subject: Re: Speak your mind

In my opinion *Fatoom* TV still very popular you know. People still cannot stay at home without TV even if they have 100 computers. Do you get my point?

Overall findings suggest that students' sense of social presence was relatively high and that they placed a lot of weight on their membership in the online social community, and that this sense was coined with a high sense of authorial presence. I find these findings important to help us understand students' perceptions of using the discussion board and the factors that might have influenced their perceptions (*see*6.3.2.1).

5.4 CONCLUSION

This chapter examined through content analysis and frequency counts students' online behaviour in terms of participation and involvement in the discussion board. While control students' participation in in-class discussion was found to be low, high

participation rates and full involvement of experimental students in the discussion board were reported. These findings have several positive implications. Discussion boards encourage students to engage in dynamic peer interactions and motivate them to participate in linguistic environments in which they voice their opinions, receive comprehensible input and produce increased written output influenced by topics, peers' linguistic choices, enhanced sense of presence and diminished stereotyped gender roles.

One important finding of this chapter concerns the shift in gender roles in the discussion board in comparison to in-class discussion. While female students were observed to be introvert and passive and males were dominant in in-class discussion, female students in the discussion board dominated the discussion while males eventually became passive, leading possibly to some male-female antagonism. This finding has many implications. First, online environments are useful for female students in conservative learning communities such as the Arab world because of the removal of social and cultural constraints. Second, additional care needs to be given when designing discussion prompts to ensure that they are gender-free and when monitoring the flow of the discussions to guarantee balanced contributions from each gender.

Another interesting finding was the influence of peer interaction on students' written output. I observed that many students used their peers' linguistic choices in their postings and copied erroneous words and phrases as well. This indicates that students were attentive to the writing styles of their peers and used cognitive and meta-cognitive learning strategies such as *functional planning, noticing* and *self-monitoring* while reading peers' different kinds of contributions and while writing their own. Increased teacher participatory contributions could have, however, provided students with more written comprehensible input and linguistic models.

In terms of the levels of interaction, though students were expected to be more reflective, most of them engaged in dialogic exchanges that were mostly affirmative and showed clear features of mitigated criticism. This finding shows that these students placed significant weight on establishing social ties with peers by providing supporting and conforming responses at the expense of being critical and argumentative. Thus, I think that teachers must pay more attention to developing their students' analytical and critical-thinking skills and helping them engage in reflective discussions without

necessary offending other participants or losing social ties in the online community. This is further discussed in Chapter 8.

That said, I can conclude this chapter by claiming that discussion boards can enhance students' involvement at all levels and can supplement teacher-controlled in-class discussion, in which communication apprehension negatively impacts on participation. In sum, students' enhanced participation in the discussion board seems to be influenced by the relevance of discussion topics to their personal experiences, the levels of peer interaction, the academic levels of students, the sense of authorial and social presence in the online community, and changes in gender roles. These factors and others are assessed in the following chapter in which survey responses are analysed to investigate student and teacher perceptions of using discussion boards and its potential advantages and disadvantages in the learning/teaching experience.

CHAPTER SIX

TEACHER AND STUDENT PERCEPTIONS OF THE EFFECTIVENESS OF DISCUSSION BOARDS

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TEACHER AND STUDENT PERCEPTIONS OF THE EFFECTIVENESS OF DISCUSSION BOARDS

6.1 INTRODUCTION

This chapter aims at investigating the *Uob*'s teachers' and students' use and perceived effectiveness of discussion boards by examining their questionnaires and interviews responses (*see* Chapter 3). This mixture of quantitative and qualitative research instruments was to ensure the provision of valid and reliable findings (Litwin, 1995).

6.2 TEACHERS' PERCEPTIONS OF USING DISCUSSION BOARDS

Assessing teachers' perceptions of using discussion boards in pedagogical settings is crucial in helping us address hindrance issues, identify success stories and provide guidelines for their most effective use.

As also stated in Chapter Three, a teacher questionnaire(*see* Appendix G) was sent to 100 university teachers who deliver online courses on *WebCT* but only a response rate of 30% (n=30) was attained. Respondents, only 57% of whom were L2 teachers, belonged to different disciplines and academic levels. It is noteworthy that 13% of these teachers were native speakers of English. Semi-structured interviews (*see* Appendix I) with 6 of these teachers (33.5%) were conducted after the administration of the questionnaire to add more validity to the responses and minimise possible social desirability bias (*see*3.5.1.b). The following sections present findings of teachers' perceptions of the effectiveness of using discussion boards.

6.2.1 Teachers' Overall Use

At the beginning of the questionnaire, teachers were asked about the frequency of their use of different *WebCT* functions in their online instruction. Teachers were free to select

more than one function. Among the 30 teachers, 20 (67%) reported that they did not use interactive tools such as discussion boards or chat rooms (*see* Table 6.1 below), but mostly used the *WebCT* to deliver course content, assignments, tests and grades only, as also verified by students' questionnaire and interview responses (*see* Table 6.2 below). This finding suggests that most teachers do not facilitate available tools of interactive communication for their students. It has to be mentioned here that most departments ask their faculty members to refrain from using chat rooms due to the lack of teacher control over the content exchanged. Hence, teachers were not asked if they used them in the questionnaire.

Table 6.1 Most Used Online Functions by Teachers (n=30)

Most Used Online Functions	**No. of Responses**
Delivery of course content (units and course material)	25
Tests and quizzes	15
Student assignments	24
Classroom presentations	10
Email exchanges	11
Discussion boards	10
Course calendar	5
Grades statistics	12

The majority of teachers stated that they use *WebCT* to deliver course content, assignments and quizzes. Teacher interviewees explained that the convenience and flexibility of distributing course-related material to students on the online platform helped them manage their courses better:

- *T1: I use the WebCT for online quizzes and also for submitting assignments and homework... and also for posting hand-outs instead of photocopying them and giving them to everybody...so that they will have to do these activities online.* (Interview)

- *T2: I had a large class of 38 students last semester so it was very helpful for me to be able to email them to tell them of important dates, which was a lifesaver really...* (Interview)

- *T3: What is very important for me is the communication between me and the students using email. WebCT provides me with some sort of flexibility in communicating with the students because we do not need to use email accounts such as Yahoo or Hotmail.* (Interview)

Teachers were also asked to rank the importance of a number of activities including online discussion using a 3-point scale (*very important, moderately important,* and *not important*). Table 6.2 below shows that 17 teachers (57%) did not consider using these discussions important. Instead, they valued more enabling students to learn about and submit assignments (n=21, 70%), and read course content (n=20, 67%).

Table 6.2: Teachers' Perceived Importance of Online Activities (n=30)

How important is it that your students do the following activities in your online course?	**Very important**	**Moderately important**	**Not important**
Reading course content	20	8	2
Doing online tests	17	7	6
Learning about and submit their assignments	21	6	3
Exchanging email with you	16	9	5
Discussing topics with you and their classmates in the discussion board	8	5	17
Downloading course-related material	17	11	2

This finding suggests that teachers valued online courses for practical course management only rather than their interactive features and that the uptake of discussion board by the *UoB* teachers appears to be slow (*see* Chapter 1).

Teachers also mentioned that they do not often facilitate in-class discussion in f2f courses very frequently because of students' low participation rate. A teacher interviewee, who earlier complained that she had large classes of almost 40 students, mentioned that in her previous courses:

- *T2: Discussions was a minor part of the course. A lot of it was lecture-based and we might have had a little bit of conversation towards the end. I would say 5 or 10 minutes max per lecture for all the students.* (Interview)

This rate of in-class discussion was also verified in students' questionnaires and interview responses of both control and experimental groups (*see* Section 6.3.1). This implies that each of these 40 students, if lucky, had almost 25 seconds per lecture to participate in any in-class discussion, or that particular high-achieving students used most of this time while others were passive most of the time.

However, it is noteworthy to re-mention here that among the 10 teachers who used discussion boards, half belonged to the College of Arts and were mostly English language teachers. This might suggest that L2 teachers appreciated the advantage this type of discussion offers to language learners. However, most of these L2 teachers were also among those who perceived using these discussion boards as unimportant. This contradictory finding raises more questions concerning reasons for teachers' low enthusiasm to supplement their online teaching with interactive discussions. In an open space, teachers who mentioned that they did not use discussion boards (n=20) were asked to list these reasons. 30% claimed that the lack of time was the most important reason (*see* Table 6.3 below).

Table 6.3: Reasons for Not Using Online Discussion (n=20)

The most important reason for not using discussion boards	***N***
There is not enough time because of the workload	6
Students often do not participate in online discussion	3
Discussions can damage students' academic writing	3
I do not know how to use the discussion board	3
No administrative support	2
Students' prefer in-class discussion	2
Discussions do not serve the course objectives	1

The lack of time was related to the increased workload the use of these discussion boards would entail:

- *T1: A teacher's workload is the main reason. During this semester, I teach Orientation course and also two other courses and this why somehow I neglected the other courses because I was busy all the time doing communication with the Orientation students.* (Interview)

- *T2: We have heavy schedules, and many courses and we don't meet frequently enough with the students since it is a 3-credit course, so it is hard to get the material done adequately. With the continuous assessment, we have enough there to keep us busy. It's time consuming.* (Interview)

15% of the teachers expressed that the lack of knowledge and proper training on how to use these boards effectively was the main reason for not using discussion boards while another 15% explained that students do not participate in the online discussion especially that there are no grade allocations to their participation. Another reason particularly related to some language teachers was their desire to ensure that students maintain the standards of proper academic writing, which they argued to be at risk in the online discussions:

- *T1: I've noticed that they pick up on colloquial or improper phrases as a result of them being members of Facebook or MySpace. For example, the use of idioms and shortening phrases or using numbers instead of words like 4 or 2 to mean for or to.* (Interview)

- *T2: I find it a little bit disconcerting. I don't like it much because I think it doesn't really allow the students to really use the language and learn the spelling but again it's a different focus. It's a discussion and not an essay! I am also concerned that students use Arabic while interacting with each other instead of English. I hear students do a lot of code-mixing and code-switching in online settings* (Interview)

- *T3: I don't want my students to write incorrectly anywhere, even on these forums. It is writing after all, and can a teacher who has to work full-time, check, correct and explain all language mistakes of every student participating in these discussions? Is it a part of the teacher's workload or additional work with/without pay? ... How simplistic can/will a teacher make his/her writing?* (Interview)

These concerns support the point I made earlier that teachers often stereotype any type of online writing as being *bad, erroneous, fragmented, full of code-switching/mixing occurrences, and similar-to-speech* (*see* Chapter 1 & Chapter 2). The first teacher compared the online discourse on academic discussion boards to that exchanged on social networking platforms such as *Facebook* and *MySpace*. Another teacher was concerned with the negative effects of code-mixing or code-switching in discussion boards on students' English language proficiency. These concerns function as the basis for this study's second main research question investigating the linguistic features of the discourse found in the discussion board (*see* Chapter 7). Other teachers, however, reported other reasons such as students' preference of in-discussion and the lack of administrative support and encouragement (*see* 6.2.2.2d below).

That said, the overall satisfaction level was found to be high among teachers who used discussion boards (n=10). Their advantages and disadvantages of the medium are outlined in the following sections.

6.2.2 Advantages and Disadvantages of Using Discussion Boards

The questionnaire invited teachers to respond to a number of statements about the possible advantages and disadvantages of using discussion boards for student learning and teaching practice (*see* Appendix G., Question 10). However, not all of the 30 teachers provided responses to these statements. Only 10 teachers, who used discussion boards in their courses, responded to these statements. It is possible that the other teachers did not find these statements relevant to their teaching practice, although many of them mentioned that they had used discussion boards before. Hence, I caution here that the sample of responses was small and that some replies were possibly bound to be preferable and biased towards the advantages of using the discussion board in pedagogical settings. Therefore, interviews with some of these teachers were conducted to add more reliability to the responses. Interviews were also carried out with teachers who did not respond to these questions to verify the findings and ensure that the responses were not biased. In fact, many of the questionnaire respondents disagreed with many of the statements, suggesting some objectivity.

Overall, most of these ten teachers reported that they preferred online discussion to in-class discussion (*see* Table 6.4, Statement 10.37=7/10) and that they looked forward to using these boards in their future online courses (Statement 10.40=8/10) for a number of factors they mentioned in the interviews. However, almost 60% of them did not consider online discussion more important than in-class discussion (Statement 10.38=6/10) or that it can replace in-class discussion (Statement 10.37=6/10). Similar findings were found in Wasilik and Bolliger's (2009) survey of teachers' perceptions.

The following tables illustrate teachers' responses to Question 10, which investigated their perceived impact of using discussion boards on a) *student learning* and b) on their *teaching practice*.

Table 6.4: Perceived Effects on Student Learning (n=10)

Statement	Agree	Disagree	Not Sure
1. *Students participate more in the online discussion than in in-class discussion*	7	2	1
2. *I use the discussion board to give extra writing practice to my students*	8	1	1
3. *My students produce less writing in the discussion board than in traditional classroom settings.*	2	6	1
4. *Students read more in the online discussion*	7	3	0
5. *Students interact more with their peers in in-class discussion*	2	7	1
6. *Students interact more with me in the online discussion*	7	2	1
7. *Students use their peers' writing styles in the online discussion*	7	1	2
8. *Students copy their peers' writing errors in the online discussion*	5	3	2
9. *Students plan their in-class writing assignments*	3	6	1
10. *Students plan their online writing contributions*	7	3	0
11. *Students share their opinions more in in-class discussion than in online discussion*	2	6	2
12. *Students use external resources to support their online arguments*	6	1	3
13. *It is important for students to receive my feedback on their online postings*	8	0	2
14. *It is important for students to receive their peers' responses on their online postings*	10	0	0
15. *Online discussion provides students with equal opportunities for participation*	7	2	1
16. *Shy students participate less in the online discussion than in in-class discussions*	0	0	10
17. *Weak students participate more in online discussion than in in-class discussion*	8	1	1
18. *Female students interact more in in-class discussion than in online discussion*	0	10	0
19. *Male and female students interact openly in in-class discussion*	2	8	0
20. *Students discuss more course-related assignments in the discussion board than in-class discussion*	7	0	3

Table 6.5: Perceived Effects on Teaching Practice (n=10)

Statement	Agree	Disagree	Not Sure
21. I provide better feedback on my students' writings in the traditional courses than in the online ones	3	6	1
22. I use students' online discussion transcripts to assess their course performance	6	2	2
23. I get to know my students better in in-class discussion more than in online discussion	2	7	1
24. I identify my students' weaknesses more in the in-class discussion than the online discussion	3	7	0
25. I remove and add topics and posts on the discussion board easily	8	0	2
26. Online discussion saves a lot of class time	7	3	0
27. Online discussion requires less planning than in-class discussion	3	7	0
28. Online discussion is better for managing large classes than in-class discussion	8	1	1
29. Reading and replying to students' online posts is time-consuming	4	5	1
30. I can access students' online discussion at any time	10	0	0
31. It is easier to distribute course material in class than on the discussion boards	1	9	0
32. I use the data retrieved from the discussions for research	5	4	1
33. I received training on how to use discussion boards	3	7	0
34. The University acknowledges our efforts on the discussion board	0	8	2
35. E-Learning Centre's technical support is good	4	4	2
36. My colleagues encourage me to use online discussion	3	6	1
37. I prefer classroom discussion to online discussion	2	7	1
38. Online discussion can replace in-class discussion	3	6	1
39. In-class discussion is more important than online discussion	4	4	2
40. I will use online discussion in my future online courses	8	1	1

Teachers' responses to these questionnaire statements presented a number of advantages and disadvantages of using the discussion board, the most important of which are presented below supported by teachers' interview comments.

6.2.2.1 Advantages of Using Discussion Boards

A number of advantages were found in relation to participation, interactivity, learning experience and written output, and teaching practice.

a) Increased Participation

One of the key advantages reported was students' increased participation in the discussion boards in contrast with in-class discussion (Statement 10.1: 7/10). However, two teachers indicated that students prefer participating in f2f discussion more than in online discussion:

- *T13: Discussions would be more fruitful in person. I made the discussion board available to the students but they prefer to discuss any issue face-to-face or through other ways: phone, in class, after class, office hours, etc.* (Questionnaire)

Discussion boards were also claimed to be suitable for equal participation and for students' individual differences (Statement 10.15: 6/10). Increased participation of shy and weak students was also reported by most teachers (Statement 10.16:10/10; Statement 10.17: 8/10).

- *T6: The discussion board gives every student the chance to be part of the course. Also, it can help the shy students to express their opinion. Online discussions definitely make it easier for shy students to make their views public. Through the reading of the entries of their more able friends, weak students receive additional input and reinforcement. They also become more confident as they can seek their teacher or friends' assistance prior to posting their entries.* (Interview)

These claims were also supported by teachers who did not use discussion boards. More than 73% of the overall 30 teachers (n=22) believed, in the open-ended question, that discussion boards could motivate all students to participate actively in course-related discussion.

- *T24: It helps encourage students to participate and communicate in English, allowing every student a chance to contribute to the discussion and an opportunity to express complicated thoughts, not just common friendly conversations. Students tend to enjoy this activity and appreciate its value on the long run.* (Questionnaire)

They also explained during the interviews that weak and shy students might feel less anxious and have more self-esteem and confidence in the online settings because of peer support and the removal of communication barriers.

- *T1: I think it would be very useful for weak students especially because it will improve their writing skill ... Some students are also shy and they don't want to communicate so I think it will a chance for them to sort of be more free to get in touch with the instructor.* (Interview)

- *T5: They would also feel comfortable asking me questions as the fear of 'losing face' in front of the other students could be reduced.* (Interview)

However, two teachers disagreed with these claims and stated that communicating in the discussion board, which often requires typing speed and computer knowledge, can cause slow and technologically-illiterate students to fall behind and hence, feel anxious. However, it is possible that this concern is overstated since the literature suggests that the time-delayed nature of discussion boards reduces communication apprehension unlike synchronous discussions that require students to be instantaneous, often resulting in high affective filter and increased anxiety (*see* Chapter 2).

Another anxiety-related advantage is the diminished *gender differences* in the discussion board. While the majority of the teachers agreed that male-female interaction is limited in in-class discussion (Statement 10.19: 8/10), all of them claimed that female students interact more in online discussion (Statement 10.18: 10/10). Teacher interviewees supported this claim and explained that because female students are often reluctant to participate in face-to-face discussion for social and sometimes religious constraints (*see*6.3.5), discussion boards serve as a good environment for them to participate. The content analysis of students' exchanges also supports this claim (*see*5.3.3).

- *T5: My students were more willing to express their opinions or personal views in the online discussions than in classroom discussions. In the traditional classroom setting, I would often have students especially females say nothing even if asked directly.* (Interview)

- *T6: After overcoming the initial resentment of doing something new and unfamiliar, my students tended to interact freely with their peers and me. The majority of my female students would not be afraid to talk to the males in the class – something that would be a problem in face-to-face communication in the traditional classroom.* (Interview)

b) Enhanced Interactivity

The questionnaire contained a number of statements assessing students' interaction with peers and teachers on the discussion boards. Most teachers claimed that students interact more with their peers (80%) and share their opinions (70%) in the online discussion than in their in-class discussion (*see* Table 6.4, Statements 5 & 11). All teachers also reported that students consider it more important to receive peer responses on their online contributions than from teacher responses and that online discussion serves as stimuli for students to interact together especially in collaborative projects. Teachers' appreciation of enhanced student-student interaction in discussion boards was also reported in other studies (Hartman & Truman-Davis, 2000; Lim *et. al*, 2009; Wilson & Whitelock, 1997).

Of the 10 teacher respondents, 7 reported that student-teacher interaction is enhanced in discussion boards (Statement 10.6). Most teachers claimed that students appreciate the feedback they receive from their teachers on their online posting (Statement 10.13: 8/10). Similar findings were found in other studies (Hartman, Dziuban& Moskal, 2000; Wasilik & Bolliger, 2009).

- *T6: ... student-teacher interaction was more informal than it would have been in the traditional classroom settings... as my students, probably for the first time in their lives, were asked to figure things out for themselves and ask for assistance only if necessary.* (Interview)

However, three teachers were less satisfied with teacher-student interaction, because of administrative issues such as the lack of time and increased workload (*see* 6.2.2.2 below).

c) *Improved Learning Experience and Written Output*

A number of questions were presented to evaluate how teachers perceived the influence of using discussion boards on students' learning experience and written output. While 60% of the teachers reported that students use external resources to supplement their online arguments (Statement 10.12: 6/10), 70% claimed that their students do more reading and discuss more course-related assignments in the discussion board than in class (Statements 10.4 &10.20).

Correspondingly, almost 60% of all the teachers (n=18/30) acknowledged in the open-ended question that the discussions could improve their students' learning experience:

- *T11: It is important that we use it for students' language development... Imaginative projects can help make those boards very effective in students' learning by collaboration.* (Questionnaire)

A teacher interviewee claimed that students learn better in the online settings because they are more autonomous and involved in their own learning:

- *T3: I believe students become highly involved in their own learning. My courses are related to multimedia and sometimes the applications used do not work when students are not in campus, so they use the discussion board to post their problems and their classmates help them resolve the problem.* (Interview)

Another reported advantage was the positive influence of using the discussion boards on the quality and quantity of students' written output. 70% of the teachers reported that discussion boards encourage students to produce more writing (Statement 10.3). This finding can be attributed to the extra writing practice (Statement 10.2: 8/10), and the influence of peer writing styles in the discussion board (Statement 10.7: 6/10).

- *T6: I think that when students see messages from other students, they pick up and correct their errors. So peer responses definitely help but I still think that they don't spend time editing their postings or emails.* (Interview)

Another reason was associated with students' pre-task planning before the online submission of their writings (Statement 10.10: 7/10) which does not seem to be the case in in-class writings (Statement 10.9: 3/10).

- *T6: By specifying the length of students' entries, you teach them the ability to express their views concisely and precisely. As for quality, students are constantly encouraged to review their entries before posting them for everybody to see, which leads to better quality of their work and increased linguistic awareness.* (Interview)

However, while three teachers pointed out that their students do not plan their writings before submitting them online, one of them considered this behaviour useful because it helped teachers recognise students' actual language use and their main areas of weakness and hence, help them overcome these weaknesses.

It is noteworthy to mention that even teachers who did not use the discussion boards acknowledged in the questionnaire and interviews the positive influence of using these boards on students' writing skill:

- *T8: I guess it might be useful to help students write more and communicate with me and their peers but as I said I don't have the time for it nor do the students.* (Questionnaire)

- *T10: I teach writing courses for journalism, and discussions can help students a lot in the exchange of ideas before writing.* (Questionnaire)

- *T2: I think it will improve students' writing skill ... I tell my students that anything that they get on paper is of value, so it will definitely benefit them.* (Interview)

- *T1: ...if we give them something that is not pre-assigned then this will improve other aspects of their writing skill. They do a lot of communication with their classmates and the instructor, so it will help them in that way because they will have authentic communication. Also, it can enrich their vocabulary as well. I also believe that participating in online discussions can increase students' fluency in writing.* (Interview)

d) Improved Teaching Practice

A number of questions aimed at assessing teachers' opinions on how using discussion boards can improve their teaching practice (i.e. course management, time management and professional development).

- *Course Management*

Most teachers valued the accessibility, convenience in managing large classes, flexibility of posting and removing topics, and ease of distributing course material in the discussion boards (*see* Table 6.5, Statements 30, 28, 25 & 31 respectively). Similar findings were found in a number of other studies (Wasilik & Bolliger, 2009; Wilson & Whitelock, 1997).

70% of the teachers also claimed that using the discussion boards enabled them to know their students better and identify their weaknesses more than conventional teaching settings (Statements 23 & 24). Another advantage particularly important to language teachers was the ability to use students' permanent written contributions for assessment and the provision of better feedback on these contributions (Statements 22 & 21).

However, three teachers argued that students are more attentive to teachers' feedback in face-to-face settings and that they might get embarrassed if teachers publish their corrective feedback in the discussion board.

- *T3: The student will also be demoralised by the number of corrections that he/she gets every time he/she writes in the forum.* (Interview)

Thus, this type of feedback should be sent to students individually using *WebCT*'s email function to avoid possible embarrassments.

- *Time Management*

Many teachers supported enhanced time management in online settings because the use of online discussion saves them a lot of class time (Statement 10.26=7/10). They explained during the interviews that online discussion can function as a replacement of in-class discussion and hence, teachers can use class time for other course-related activities such as presentations and tests. However, this result conflicts with a number of disadvantages reported by the same teachers in association with the time needed for planning and managing online discussions (*see* 6.2.2.2). That said, I believe that a number of frameworks and techniques should be used to ensure adequate time management in online settings. These are discussed in Chapter 8.

- *Professional development*

Half of the teachers claimed that they use students' transcripts to carry out further research (Statement 10.32=5/10). I assume, however, that this advantage has been overstated. To the best of our knowledge, no studies have yet been carried out or published analysing any pedagogical aspect using transcripts of online discussion in the *UoB*.

In summary, most teachers acknowledged to a certain extent some advantages of using discussion boards in instructional settings such as enhanced students' participation, peer and teacher interaction, enhanced written output, and some teaching practices. However, the analysis of questionnaire and interview responses also revealed a number of perceived disadvantages.

6.2.2.2 Disadvantages of Using Discussion Boards

Teachers mentioned four disadvantages of using discussion boards discussed below: time-consumption, low student participation, influence of peers' errors, and lack of institutional support.

a) Time-Consumption

Although 70% of the teachers mentioned that using discussion boards saves them a lot of class time (Statement 10.26), 40% reported that reading and replying to students' online contributions is time-consuming (Statement 10.29), while 70% claimed that online discussion requires more planning than in-class discussion (Statement 10.27). The increased workload and time-consumption of planning and managing the discussions was the main reason why three teachers mentioned that they preferred in-class discussion more (Statement 10.37).

- *T1: Online courses take too much of our time. So what I'm saying is that I would do online communication with students in any course if it was the only I was teaching in a semester because you can't do both.* (Interview)

- *T3: A teacher cannot cope with the course work AND the online discussion at the same time because of time constraints...For example, students send 10-20 contributions per week but I cannot handle them all.* (Interview)

Many teachers explained how overwhelming online discussions can be as students often expect the constant availability of teachers (Statement 12/13=8/10). According to Santilli and Beck (2005), "the majority of faculty time in online courses is spent communicating with students, building and sustaining learning communities" (p.159).A teacher interviewee complained that these discussions could make teachers more accessible to students, which would automatically involve increased work duties. This

particular teacher was also concerned about the negative effects these discussions might have on transforming students into passive teacher-dependent learners, to whom knowledge is "spoon-fed":

- *T4: I believe that the more we make ourselves accessible, the more the students will be dependent on the teacher and also students' expectations become higher in online settings than in traditional settings so the workload doubles. It becomes some sort of "spoon-feeding" as teachers are forced to give more details, instructions and information in the online settings than in face-to-face settings.* (Interview)

This claim, however, was rejected by an L2 teacher interviewee, who argued that traditional teacher-centred classroom settings create passive students, as the teacher is often the sole provider of knowledge and controls classroom discussion. This teacher claimed that teachers' interactive contributions in online discussion could serve as additional language input that could be used by students as models. She also recognised the importance of facilitating teacher-student interactions and provision of constant feedback to students for more encouragement, supervision, and guidance. Most teacher interviewees also stated that planning is very important to ensure that topics presented for discussion are of high interest to the students so that they feel motivated to participate.

b) Low Student Participation

Another disadvantage reported by few teachers was students' low participation in the discussion boards.

- *T6: As a teacher, I can see the value of online discussions; I am not sure, however, that my students are able to see it. For many of them, it is just something that they have to do as part of the course requirement and as it involves a lot of work, they are reluctant to do it. More mature and advanced students can clearly see it as an opportunity to improve their language skills.* (Interview)

Teachers attributed low participation to the lack of incentives and academic rewards such as mark allocation:

- *T3: A discussion board can be used as an exchange forum to teach online, but it does not always work because the involvement of the students is sporadic. They are reluctant to participate when there are no grade allocations.* (Interview)

- *T4: I have noticed that students do not participate unless there is an incentive such as grades or unless there is some kind of knowledge delivery. ... For example, we could assign group work to discuss a project so students could start with generating ideas on the discussion board and then vote for the best ideas ending with decision-making.* (Interview)

Another relevant disadvantage was the possibility of advanced students' dominance over online discussion at the expense of weak students. However, a number of studies (Berge & Collins, 1996; Gilberts & Dabbagh, 2005; Rafaeli & Sudweeks, 1997; Sproull & Kiesler, 1986; Wallace, 1999) have shown that this kind of dominance, which can also be found in in-class discussion, is decreased in online discussion. I have also shown that experimental students' participation in online discussion was much higher than the control students' participation in in-class discussion (*see*5.1.1).

c) Influence of Peers' Errors

Three teacher interviewees also were concerned with how students' academic levels could affect the success of online discussion. A main concern in this regard was the negative influence of peers' errors on students' writing. While 70% of the teachers reported that students use their peers' writing styles in the online discussion (Statement 10.7), almost 50% claimed that students copy their peers' wrong lexical and grammatical structures (Statement 10.8). Instances of such behaviour were also evident in our content analysis of the discussion transcripts (*see*5.3.4.3.b). However, it seems that this kind of online behaviour was marginal and did not affect students' accuracy level as significant gains were shown in one of the accuracy measures used (*see* Chapter 4).

d) Lack of Institutional Support

Many teachers reported another set of disadvantages concerning institutional support in using discussion boards. First, some teachers, one of whom was a department's chairperson, reported their disappointment because their efforts in facilitating online discussion were not rewarded (Statement 10.34=8/10).

- *T3: Instructors don't have the incentives to take the initiatives. I believe that delivering an online course is equivalent to research or publishing a book. However, the latter activity is often rewarded by university administrations while designing and administering an online course is not, which is not fair.* (Interview)

- *T6: Teachers fear the use of technology as they are more used to their traditional methods of teaching. However, no administrative decisions have yet been taken to encourage these teachers to deliver online courses and make use of the technology provided. No incentives or rewards are offered to those who already deliver online courses and activate online discussions and this can be very discouraging.* (Interview)

These teachers also expressed their frustration with the discouragement they often get from their colleagues for using instructional technologies like discussion boards (Statement 10.36=6/16).

- *T5: I also get very frustrated when I have to explain to my colleagues why I want my students to engage in online discussions. Most of them discourage me from using the discussion boards because they think that I am wasting my time over extra work that I am not obliged to do.*(Interview)

Another discouraging administrative issue was related to technical support. Almost 70% of the teachers reported their dissatisfaction with the technical support they receive from the *e-Learning Centre* (Statement 10.35) and the lack of proper training on using discussion boards (Statement 10.33).

- *T5: I hate it when I have to beg for a vacant lab to let my students discuss course-related issues online during their breaks.*(Questionnaire)

- *T1: Not every lecturer is willing to teach online courses and not everyone feels comfortable using it. So if people were selected to teach online courses, they should be given good amount of training because some teachers get lost and spend a lot of time figuring out what to do, which affects their teaching styles and their communication with students.* (Interview)

In sum, teachers' perceptions of the advantages and disadvantages of using discussion boards suggest that while most teachers appreciate the potential pedagogical benefits, they have reservations over the increased workload, reduced participation, effects of peers' errors and inadequate institutional support. However, teaches presented a number of recommendations to overcome these disadvantages.

6.2.3 Teachers' Recommendations

Teachers provided a number of recommendations for an effective pedagogical deployment of discussion boards. As also mentioned earlier, most of the teachers stressed the importance of providing proper technical and instructional training to ensure overall satisfaction (Hartman *et al.*, 2000).

- *T18: Since we do not know how to use it, training sessions are important for students and instructors as well. (Questionnaire)*

- *T4: The E-Learning Centre should organise training sessions and seminars for knowledge transfer of best practices and lessons learned especially in the area of how to use these discussion boards effectively.* (Interview)

- *T3: Some teachers really feel illiterate when it comes to online discussions. The E-Learning Centre needs seriously to encourage instructors in so many ways to take part in online course delivery...So the Centre needs to arrange more seminars and workshops.* (Interview)

Another teacher recommended providing training sessions for students to save teachers' time and effort:

- *T1: Students need at least one or two sessions of training on how to use WebCT because it would be time-consuming for us to teach the students how to.* (Interview)

Provision of constant technical support was also one of the key recommendations teachers made:

- *T3: Voice and video interaction should function and should be fully utilised. We also need capacity to send large files.* (Interview)

- *T4: Technical support should be improved, backup servers installed and outsourcing of technical support considered.* (Interview)

Other teachers were more concerned with class size in online courses and suggested smaller classes of 15-20 students:

- *T1: We need smaller classes. For online courses, I don't think a class of 40 students would succeed. 20 students would be ideal.* (Interview)

A number of teachers also recommended giving more administrative weight to online courses and to using discussion boards by making these courses

compulsory, allocating more course credits to online courses, using online discussions for assessment and providing teachers with more incentives:

- *T4: Blended learning should be uniform for all subjects at all departments by default without the need to fill in application forms to request the delivery of a particular course online. Basic courses can also be delivered fully online.* (Interview)

In summary, teachers claimed that the provision of training, technical and institutional support and incentives for teachers and students could contribute to the effective use of discussion boards in instructional settings. Two teachers, who were advocates of using these boards, urged in the following extracts teachers to recognise the value of these boards in pedagogical settings:

- *T3: I repeat and I fully believe that any faculty member cannot by any means ignore or neglect the concept of online teaching or the effects of using online discussions because he/she is confronted with a new generation of students who are already technologically-advanced. Thus, the instructor needs to have the minimum basics in communicating with them online...So I encourage all the instructors to take the initiative and use the technologies available.* (Interview)

- *T5: Whether they like it or not, instructors have to understand that everything is now online and that they have to cope with the changes. I believe that using discussion boards is very effective and helps students a lot.* (Interview)

To conclude, teachers who did not use discussion boards attributed it to the lack of time and to their fear of encouraging students to produce *bad English* which is more akin to speech and which can damage their writing proficiency. Teachers who used discussion boards regarded this use beneficial in students' learning process but demanded more support. I join these teachers in urging university administration to provide incentives, adequate training and technical support. These recommendations could function as basic guidelines to enhance the use and adoption of discussion boards in the *UoB*'s online courses. In addition to the importance of recognising teachers' perceptions, an investigation of students' perceptions is crucial to have a complete understanding of the merits and perils of the medium in pedagogical contexts.

6.3 STUDENT PERCEPTIONS OF USING DISCUSSION BOARDS

This section investigates experimental students' perceptions of the medium using post-study questionnaire and interview responses, compared to their responses in the pre-study questionnaire and to teachers' responses.

6.3.1 Students' Overall Perceptions and Satisfaction

A number of questions were raised to evaluate students' overall satisfaction with using the discussion board. As Table 6.6 below shows, almost 76% (n=16) expressed that they enjoyed the online discussion, while almost 81% (n=17) mentioned that they preferred online discussion to face-to-face discussion. More than 76% (n=16) also expressed their desire to use discussion boards in future courses (Question 12). Similar results were found in other studies (Davidson-Shivers *et al.*, 2001; Hirata & Hirata 2008; Jung & Suzuki, 2006).

Table 6.6a: Students' Overall Satisfaction (n=21)

Statement	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
17. I enjoyed the online discussion	6	10	2	2	1

Table 6.6b: Students' Overall Satisfaction (n=21)

Questions	No. of Responses
11. Now that the course has finished, which kind of discussion do you prefer?	
a. ***online discussion***	17
b. ***face-to-face discussion***	2
c. ***Not sure***	2
12. Would you like your teacher to use discussion boards in future courses?	
a. ***Yes***	16
b. ***No***	3
c. ***Not sure***	2

While three students reported that they did not enjoy the experience and preferred in-class discussion for reasons that will be highlighted below (*see* 6.3.3), it is also possible to assume that many other students provided positive responses to please the teacher/researcher as influenced by social desirability bias. Thus, student and teacher interview data was used to do some cross-reference with questionnaire responses and hence, reduce possible bias (*see*3.5.1.b). Students were also invited to respond to a number of statements that assessed their perceived advantages and disadvantages of using the medium, as discussed below.

6.3.2 Advantages of Using the Discussion Board

Most students supported a number of advantages of using discussion boards such as learning effectiveness, reduced anxiety and gender differences, increased interaction with peers and teacher, and increased and improved written output. These advantages are discussed below.

a) Learning Effectiveness

The *Sloan*-Consortium, which considers *learning effectiveness* one of the five pillars in online instruction in addition to *student satisfaction, faculty satisfaction, access,* and *institutional cost effectiveness*, explains that learning effectiveness measures whether "learners who complete an online program receive educations that represent the distinctive quality of the institution. The goal is that online learning is at least equivalent to learning through the institution's other delivery modes, in particular through its traditional face-to-face, classroom-based instruction" (Swan, 2003: 13).

A number of questions invited students to assess their perceptions of the learning effectiveness of the medium (*see* Table 6.7 below). The majority (n=14, 67%) felt that the use of the discussion board had a positive influence on their learning process (Question 13.8).

Table 6.7: Students' Responses to Learning Effectiveness

Statement	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
8. I learned better from in-class discussion than online discussion	1	3	3	7	7
10. I understood course tasks and assignments more in in-class discussion than in online discussion	1	2	3	7	8
11. I learnt new vocabulary items from the online discussion	9	8	2	0	1
12. I used external resources (software, websites, books) to support my online arguments	6	8	2	3	2

Students' responses above suggest that students felt the discussion board helped them have a better learning experience. In particular, almost 72% of them (n=15) claimed that online discussion helped them understand course-related tasks and writing assignments more than in-class discussion, while 67% claimed that they used other resources such as certain software and educational websites to support their online arguments (n=14). These advantages were also supported by interview responses and teachers' views (*see* 6.2.2.1).

- *Balqees: It was good that the topics we discussed were related to the course objectives and textbook. We learnt more about these topics because we had to research them and discuss them instead of the teacher presenting them to us.* (Questionnaire)

- *Fatema T.: I used certain programs to translate Arabic words into English and vice versa, so I learnt many new words and my English improved ... Ever since we had ENGL 205 online course, I have been using Google and online dictionaries a lot.* (Interview)

Another student mentioned that these discussions made her change her views about using Arabic public discussion boards and use English ones instead:

- *Fatema A.J.: The experience made me realise that we can use the Internet not only for chatting on IRCs or MS Messenger or participating in public Arabic forums but for enhancing our learning practices. For instance, before submitting anything online, I used to search online for articles related to the topic we were discussing, read them all then summarize them.... I do not participate in any Arabic forums anymore because I think the English ones help me become a better writer and language learner.* (2nd Interview)

That said, a number of students had contrary views. 19% expressed that they did not think that their learning was influenced by the discussion board (n=4), or that it helped them understand tasks better (n=3), while 24% mentioned that they did not use external resources to support their online arguments (n=5). The majority of these students were high-achievers confident of their linguistic and academic competence.

a) Reduced Anxiety

Another perceived advantage was the reduced anxiety in the online discussion. Almost 81% (n=17) felt that the online discussion was less threatening than in-class discussion (*see* Table 6.8 below), and 76% (n=16) believed that these discussions made them less nervous about expressing their opinions publicly. Conversely, analysis of pre-study questionnaire responses of both groups revealed that many students suffered from anxiety in in-class discussion. Table 6.8 below shows that almost 73% of all students felt either anxious or shy when asked to participate in in-class discussion, although about 81% of them stated that they enjoyed communicating with others.

Table 6.8: Students' Anxiety Level in In-Class Discussion (n=41)

When the teacher asks you to participate in an in-class discussion, how do you feel?	
Answer	**Frequency Distribution**
a. Relaxed and comfortable	9
b. Anxious and nervous	16
c. Shy and quiet	14
d. Other (please specify)	2

Anxiety in in-class discussion was found to be common among both low and high achievers:

- *Wafa: I do not like to participate in in-class discussions because I hate standing in front of everyone. I don't often speak in English unless I have to because I feel intimidated although my English is very good as you can hear.* (Interview)

- *Fatema J.: We don't normally have the time to discuss everything in class because time is limited and we'll be wasting it all on the discussions. Other than that, students tend to be shy so it's better if they were in their private places to discuss.* (Interview)

Post-study questionnaire responses, however, showed that while more than 60% (n=13) of experimental students felt nervous at the beginning of the semester while using the discussion board, almost 95% of them claimed that they felt more relaxed. A student commented that *"There is no pressure. Students who are shy can share their opinions out of the comforts of their homes."*

Table 6.9: Students' Responses on Anxiety-Related Issues (n=21)

Statement	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
6. The online discussion is more intimidating than in-class discussion	1	1	2	10	7
7. I felt more anxious in in-class discussion than in online discussion	9	7	4	1	0
27. I communicated well with members of the other sex in in-class discussion	4	2	3	7	5
28. I communicated more with members of the other sex in in-class discussion than in online discussion	2	2	1	8	8

The following interview extracts illustrate students' views in this regard:

- *Fatema A.J.: I find it difficult to express my opinions in class because I can't stand in front of the class and say what I want to say but behind the screen it's better and easier because I don't feel shy or anxious as I do in the normal classroom.* (Interview)

- *Marwa: I am usually a shy student who does not like to participate in the classroom discussions but I was highly active in the online ones. In class, we need proper body language and tone to attract the listeners to what we say, which can lead to anxiety, but we do not have to worry about this in the online settings. I only concentrate on the words and structures I use in the online settings to make my discussions appealing.* (Interview)

- *Fatema T.: I participate in classroom discussion only if I have to because I feel anxious. I prefer it when other students are participating so that I don't have to. However, I always tried to be the first one to reply to the online prompts and to*

my peers' writings and responses. This is because there is no pressure in the online settings and we enjoy the freedom of expressing our views without fearing others' reactions, while in the classroom discussions everyone is attentive to every word I say and every mistake I make. (Interview)

These comments suggest that the use of the discussion board served as an anxiety-free zone or as a "shield from being on-stage" (Bradley & Lomicka, 2000: 362). The literature suggests that anxiety is minimised in asynchronous discussion (Kern, 1995b; Sotillo, 2000), in which students are "isolated from social rules and feel less subject to criticism and control" (Sproull & Kiesler, 1991: 48). Warchauer (1997) states that online communication facilitates equal learner participation more than face-to-face communication because it frees below-average participants from anxiety suffered from advanced students' dominance over in-class discussion, or from the fear of being ridiculed for their mistakes (Patterson, 2001). It seems that students in online discussions acted as social actors (Spears & Lea, 1992) possibly because of the absence of paralinguistic and social indicators such as gender and race unlike traditional classroom settings (Arnold, 2007).

Gender Differences:

A major anxiety-related advantage was the removal of gender-related communication constraints that often hinder communication between male and female students in conservative academic settings such as the *UoB*. While 57% stated that they do not communicate well with members of the other sex in in-class discussion, 76% reported that they did in the online discussion (*see* Table 6.9 above). It is also noteworthy that the majority of the remarks above were made by female students, who generally had positive perceptions of the whole experience. Female interviewees mentioned that they enjoyed the discussions because they provided them with opportunities for gender equality.

- *Isra: I do not normally address any of my male peers in class with a question, say what I think or oppose something they say. As I said, I am a very shy person and I also come from a very conservative cultural background that does not allow me to communicate freely with males even in classroom settings. This is why I found the discussion board a very good place to say what I think even to male students without feeling that I am breaking a cultural rule.* (Interview)

However, the four students who disagreed with this advantage were the male students in the experimental group, who complained that the online discussion gradually became more female-dominated and hence, they felt discouraged from participating (*see* 6.3.5). Classroom observation and content analysis (*see* 6.3.3) also revealed that while male students in the control group dominated in-class discussion, in which females were passive and overt (also *see* 6.2.2.1 for teachers' comments), females dominated most of the online discussion. It seems that males in the experimental group considered this shift in gender roles norm-breaking and intimidating and thus, were de-motivated and posted the least number of contributions. This finding necessitated drawing a number of implications especially in regards to designing tasks and topics for online discussion to ensure providing students with gender-free learning environment (*see* Chapter 8).

d) Increased Interaction

Students reported that the use of the discussion board enhanced their interaction with their peers and teacher more than the face-to-face (f2f) discussion.

i. Enhanced Peer Interaction and Social Presence

Students claimed that peer interaction was one of the key factors behind their increased involvement in the discussion board. About 81% of these students (n=17) asserted that they actively interacted with peers in the discussion (*see* Table 6.10 below), while about 72% (n=15) maintained that they used to comment regularly on peers' posts. The majority also valued the enhanced relationships established with their peers and learning about them, while about 81% indicated that their interactions with their peers made them feel better.

Many students also acknowledged receiving adequate responses from their peers on the online discussions although 6 students claimed they felt frustrated because they did not receive enough peer responses (*see* 6.3.3). A couple of them also reported that they did not appreciate sharing personal information with peers.

Table 6.10: Students' Responses on Peer Interaction (n=21)

Statement	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
1. I had better relationships with my peers in in-class discussion than the online discussion	1	2	2	9	7
2. I learnt more about my peers in the online discussion than in-class discussion	12	4	4	0	1
3. I received sufficient responses from my peers on my online posts	8	6	1	3	3
4. I rarely shared personal information in the discussion board with my peers	3	2	0	8	8
18. I interacted more with my peers in the online discussion than in the in-class discussion	5	12	2	1	1
20. I sent regular responses on my peers' online posts	7	8	1	3	2
21. I liked receiving peer responses on my opinions	8	7	2	2	2
29. I opposed my peer's opinions freely in the online discussion	5	2	1	7	6

That said, most student interviewees revealed that peer interaction was their most enjoyable online activity because they were able to share ideas and experiences and make new friendships with peers.

- *Isra: The relationship we often develop in f2f classrooms with our classmates is usually superficial. ... on WebCT we got to know each other better and know how to deal with each other on individual basis. We had classmates who shared other courses with us but with whom we did not have any kind of relationship before taking ENGL 205 together. Most of these classmates are my friends now....When we were discussing issues and sharing experiences online, we did not feel that we were interacting with strangers but with friends.* (Interview)

- *Marwa: These discussions helped us form real-time friendships that have lasted until now ... I used to like discussing topics with certain girls whom I became friends with like Khadija. I used to feel good when I said something that my friends liked or did not know because I liked impressing them.* (2nd Interview)

Some students also claimed that they changed their opinions because of peer interaction.

- *Wafa: I was eager to know my peers' opposing opinions on a topic and their reasons. Sometimes I even changed my own opinion because I felt the other opinions were more convincing.*(Interview)

It seems that students felt a very strong sense of community membership on these socially mediated discussions. A student reported that socialising on the online discussions compensated for the absence of social ties among students in face-to-face classroom settings:

- *Fatema A.J.: In normal classes, we do not get to know the person sitting next to us on a personal level. ...We do not get the chance to establish any type of relationship with our peers. We sometimes even complete a course without knowing our peers' names.*(Interview)

- *Fatema J.: It was actually interesting ... I love knowing other people's ideas and stuff and knowing other people I have never met ... The discussion rather broke the ice between us.*(Interview)

These comments suggest a positive relationship between students' perceived learning and their sense of community and social presence and support the findings of Chapter Five (*see*5.3.5). Similar results were found by Swan and Shih (2005), who observed that students with high social presence in online discussion had more positive perceptions of their learning than students with low social presence. Originally passive students also expressed that the sense of social presence in a community with peers made them change their online behaviour.

- *Sawsan: We only participate after we ensure that the instructor and the course design are stimulating in in-class discussion. In the ENGL 205, we were hesitant at the beginning because it was something new for us and we wanted to check it out first. However, after a couple of weeks, we started participating heavily and the whole online group became like our own big family.* (Questionnaire)

What I also found noteworthy in students' responses was that 62% reported that they were not critical of their peers' viewpoints. This provides further evidence on the influence of peer interaction on the production of affirmative dialogic responses instead of critical reflective ones. Since online peer interaction was associated with social presence, most students were less confrontational or argumentative and their criticism was mostly mitigated (*see*5.3.4.3). This could be considered disadvantageous of using

the discussion board and hence, teachers must draw their students' attention to the importance of being critical and assertive in argumentative discussions.

In sum, I can conclude, based also on my observations and teachers' comments, that students perceived peer interaction as one of the main advantages of the medium. It is possible that this kind of interaction led to the co-construction of knowledge and understanding or what Mercer (2000) calls '*interthinking*' resulting in 'a culture of dialogic inquiry' (Soter *et al.*, 2008) and open dialogues unlike the ones found in classroom settings (Rossman, 1999).

ii. Enhanced Student-Teacher Interaction

While there were occasional teacher interjections (e.g. posting discussion prompts, giving instructions and technical support, providing academic advice and feedback) in the discussion board (*see* Chapter 3), the majority of the students claimed that they appreciated enhanced interaction with the teacher and hence, felt encouraged to participate more in the online discussion (*see* Table 6.11).

Table 6.11: Student-Teacher Interaction (n=21)

Statement	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
30. We interacted more with the teacher in f2f classes than in the discussion board	1	1	0	10	9
31. I think students participated more online when the teacher was participating	10	9	1	1	0
32. I participated less when the teacher was participating in the online discussion	2	0	2	10	7

Although many students (57%) claimed that there was adequate feedback and comments from the teacher, the majority (81%) requested more student-teacher interaction (Question 8).

- *Eman: We wanted to interact with you more so that we can have an elder person's opinion and to learn from your experiences.* (Questionnaire)
- *Marwa: I think the teacher's input in these discussions was very important in helping the students and motivating them to participate more.* (Questionnaire)
- *Wafa: It would have been better if the teacher shared her ideas with us and commented on ours more so that we know more about her personal life.* (Questionnaire)

They explained that teacher presence was considered a stimulus for enhanced interaction and participation and added a sense of authority and control over the discussion. Similar findings were found by Boyd (2008). The last student above referred to a particular topic she enjoyed discussing with the teacher:

MARYAM: What about you DOC? Do you like shopping? :P
Diana Al. Jahromi: I am an official shopaholic and I shop more whenever I am upset!
MARYAM: Does it work for you ??
HUDA: yes, I love shopping too and I go to shopping when I get upset.
MARYAM: I mean buying stuff when you are upset!
Diana Al. Jahromi: Yes, it does. That is why I try as much as possible not to get upset!
WAFA: Oh..so you have to have a big budget every month for it Dr! LOL!!!

Students also referred to instances where they appreciated the teacher's personal advice, as in the extract below:

Ext.6.1:

Message no. 178 [Branch from no. 177]

Posted by Diana Al Jahromi on Thursday, November 27, 2008 10:57am

Subject: What happened?

I understand what you must have been through but so many things happen in our lives that appear to be bad at the beginning but then turn out to be the best things that have changed our lives forever.

For example, when I first started my studies in the UK, I was so depressed and lonely and I hated every second of it but it later turned out to be the most wonderful experience I have ever had.

This kind of teacher interjection generated many responses from the students:

Ext.6.2:

Message no. 179[Branch from no. 178]
Posted by SAWSAN on Saturday, November 29, 2008 10:54am
Subject: Re: What happened?
Oh you must have suffered a lot doctor :-(Your story encouraged me to study more no matter what!

However, few students mentioned that they preferred face-to-face interaction with the teacher because of the importance of teacher's immediate guidance when things go wrong:

- *Ahmed: I don't like the 100% absence of the teacher because it is better to have the teacher all the time. During this course, whenever we had to submit assignments online and we had questions or problems, we were not able to see you in person although we managed by either emailing you or asking each other.* (Questionnaire)

In sum, students seem to appreciate the enhanced student-teacher relationship in the discussion board. However, although this kind of interaction has been hypothesised to offer students comprehensible input and opportunities for expert scaffolding, which can enhance their attentiveness to linguistic forms resulting in "modified output" (Lee, 2009: 127), no evidence was found in our study that might suggest any significant influence of student-teacher interaction on students' learning experience, possibly because it was not intensive enough to significantly impact students' learning experience.

e) Increased Written Output

Another reported advantage was the increased quantity of written output (*see* Table 6.12 below). Students claimed that they produced more elaborated written output and attributed it to the convenience of time in the online settings, as they had a whole week to discuss each topic, reply to peers and defend standpoints.

Table 6.12: Students' Responses on Writing Quantity (n=21)

Statement	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
5. I wrote at my own pace on the discussion board	9	7	3	1	1
9. I produced more writing in in-class assignments than in the discussion board	1	1	4	9	6
16. I expressed my opinions more openly in in-class discussion than in the discussion board	0	1	2	9	9
19. The extra writing practice on the discussion board was tiring	2	2	1	10	6

As Table 6.12 above demonstrates, almost 76% of the students (n=16) affirmed that they wrote at their own pace. Similar findings were found in other studies (Bullen, 1998; Meyer, 2003; Sit *et al.*, 2005).

- *Fatema J.: ... We do not have enough time to discuss everything in class. Instead of wasting time on discussions, teachers can use it to teach us more grammar or improve our speaking skill. Online discussions saved classroom time and gave us more time to think of our replies.* (Interview)

- *Amina S.: I wasn't used to writing a lot in English but now I am producing longer pieces of writing. I feel language is flowing when I am writing.* (Interview)

It is noteworthy to mention that although the tabulation of the number of words produced at the beginning and end of the semester showed significant differences among the experimental students themselves, the difference between experimental and control group in the fluency measures was not significant (*see* Chapter 4). Four students also claimed that using the discussion board did not help them produce more writing because they faced other problems such as their slow typing speed, lack of technological knowledge and low language proficiency levels:

- *Mohammed: I felt I was lagging behind during the discussions. By the time I was ready to submit my initial post, others were already discussing the next topic!!! There was so much to discuss and I was slow in my responses.* (Questionnaire)

These comments suggest that teachers need to be more aware of similar problems and help students overcome them to ensure successful deployment of the medium.

f) Improved Written Output

Students were invited to respond to different statements that examine their perceptions as to how using the discussion board influenced their writing development (*see* Appendix F, Questions 4, 5, 6, 9, 13.13-13.15, and 13.22-13.25). Table 6.13 shows that 95% believed the online discussion helped them improve their writing, while 72% reported an enhanced confidence in their writing ability.

Table 6.13: Improved Written Output (n=21)

Statement	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
13. I do not think online discussion improved my writing skill	1	0	0	12	8
14. I believe I write better now	7	8	4	1	1
15. I used to notice my mistakes in the discussion board	11	4	3	2	1
22. I used to check my spelling and grammar before submitting my online contributions	9	7	0	3	2
23. I paid little attention to my peers' writing styles in the discussion board	4	2	1	6	8
24. I used to plan my online writing before submitting it	8	9	1	2	1
25. I rarely used my peers' grammatical or lexical structures in my writings	4	4	0	7	6

Students claimed in the following statements that their writing proficiency improved more towards the end of the semester, as compared to the beginning of it:

- *Zahra A.: I think it has improved our writing and we can write about many topics.* (Questionnaire)

- *Ali: The discussion forums improved my skills in writing and expressing my opinion in English.* (Questionnaire)

- *Fatema A.J.: I think I learnt a lot especially in writing as I my writing style changed a lot. I just had my exam in ENGL 250 [a writing course] and I believe that ENGL 205 helped me do well in that exam. Actually, I wrote about one of the topics we discussed online.* (Interview)

As earlier stated, statistical analysis of pre-study and post-study writing tests showed that students' writing proficiency developed significantly in some aspects of accuracy and complexity (*see* Chapter 4). In sum, it seems that most students positively perceived how using the discussion board improved their writing quality. Only two high achievers reflected that they did not think the use of the discussion board improved their writing because their writing competence was already high.

That said, students' overall responses seem to suggest that a number of important variables have influenced students' perceptions about the use of the discussion board in general and about the enhanced quantity and quality of their written outcome in particular. A detailed discussion of these variables is mentioned below.

6.3.2.1 Variables Affecting Students' Positive Perceptions

Most students explained that they felt they learned better because their learning strategies changed such as *functional planning, noticing,* and *self-evaluation* (O'Malley *et al.*, 1985b; *see* Chapter 2) in addition to other variables such as *increased practice* and *the freedom of speech.*

i. Additional Practice

Student interviewees attributed their overall satisfaction to the increased writing practice in the online course unlike traditional language courses.

- *Khadija: I think I am now more used to writing than before.* (Questionnaire)
- *Amina S.A.: It is much easier now to write in English than before because we got used to it.* (Questionnaire)

- *Wafa: I feel I write more now because I produced a lot on a weekly basis... Although we also had a writing course with Dr. X, we felt that this was the writing course instead.* (Questionnaire)

- *Amina S.: In my previous courses, teachers did not use to tell us to submit much writing. In ENGL 112, the doctor told us: "If you want to give me your writings, you can"!! I think we need more practice in writing.*

- *Marwa: I love writing, and the discussion board provided me with the opportunity to do what I love in a stimulating way. I also needed something to help me improve my writing and the board was the best tool to do that...I speak of myself when I say that I gained a lot. The more practice we had, the better I felt my writing became. The more we write, the more we identify and correct our writing errors. Identifying my errors helped me improve my writing quality.* (Interview)

Patterson (2001) confirms the importance of writing practice and argues that "it is impossible to learn to communicate in the target language without practicing it" (p.139). Ortega (2009) uses the term "proceduralization" to refer to exchanging meaningful practice over a period of time, leading to automaticity and consequently to enhanced SLA. She explains that "Prolonged and repeated meaningful practice changes the knowledge representation itself; with repeated access, the stored knowledge becomes more balanced, well specified and analyzed" (p.106). Swain (1985) argues through the *Comprehensible Output Hypothesis* that "producing the target language may be the trigger that forces the learner to pay attention to the means of expression needed in order to successfully convey his or her own intended meaning" (p.249), and that output in interactive settings leads to discourse competence rather than grammatical or sociolinguistic competence. Ellis and Schmidt (1998), accordingly, caution that once practice enables learners to reach optimal performance, its power yields from gaining more improvement. Thus, "practice that focuses on L2 production should help automatize production and practice that focuses on L2 comprehension should help automatize comprehension" (Ortega, 2009: 85).

Students also associated their extra writing practice with the *authenticity* of the online writing tasks, which I assume to have led to what Soter *et al.* (2008) refer to as 'longer indices of student talk' often resulting in elaborated utterances based on reasoning and higher-thinking skills. The influence of student talk or their *verbalisation* on enhancing writing has been well-researched (Anderson & Kanuka., 1997; Applebee, Langer, Nystrand& Gamoran, 2003; Mercer, 2002; Nystrand, Wu, Gamoran, Zeiser & Long, 2003; Schweigert, 1991; Soter *et al.*, 2008). It appears that the use of the discussion board allowed our students to formulate and verbalise their own ideas and respond to

their peers' ideas at the same time (Harasim, 1989). A student mentioned that the authenticity of the tasks made them enjoyable and more useful for their learning and encouraged them to write better:

- *Fatma A.J.: What we enjoyed was the real writing tasks. Everything we discussed was based on our true perceptions and real-life experiences.* (Interview)

ii. Freedom of Speech and Authorial Presence

Students acknowledged the freedom of speech in the discussion board. Tables 6.9 and 6.12 above show that almost 86% (n=18) felt they expressed their viewpoints openly on the discussion board. Many student interviewees confirmed that the freedom of speech encouraged them to participate more in the online discussion than in-class discussion and that they used to feel guilty when they were occasionally lagging behind:

- *Balqees: I enjoyed the freedom to say anything without the fear of intimidating anyone. I did not have to see the reaction on people's face to the things I said.* (Questionnaire)

- *Eman: I feel that online discussion compensated for the lack of speaking opportunities in class and for the lack of language practice we suffer from in f2f settings.* (Questionnaire)

- *Isra: ...there are few students that often dominate classroom discussion because they are more fluent, so we end up having no chance to participate in the discussion because of them. In the online discussion, however, everyone has an equal chance to participate.* (Interview)

- *Fatema J.: In these [face-to-face] courses, we are sometimes asked to say our opinions ... other doctors normally ask us for our opinions but do not really consider listening to them... The time allotted for each student is very limited ... Also, sometimes I have a different view than the teacher but I cannot say it to him face-to-face in class but I can easily do that on the discussion board.... in the online discussion we do that freely and we have a larger space to express our viewpoints fearlessly and openly. Online discussions allowed us to submit our views, no matter how long they were, at our most convenient time.* (Interview)

Students' sense of freedom of speech in asynchronous discussion was also supported by previous studies (Irvine, 2000; Sit *et al.*, 2005; Soter *et al.*, 2008). Soter *et al.* argue that students' sense of control increases "when students hold the floor for extended periods of time" because of "moving from teacher sharing interpretive authority to students having full interpretive authority" (pp.373- 376).

iii. Functional Planning

Most student interviewees claimed that the asynchronicity of the discussion board encouraged them to plan their writings before submission. The advantage of delayed production gave them enough time to plan, draft and re-drafts their postings:

- *Amina S.: I did not use to make a plan before I wrote in my previous courses but now it is different. ...During the course, I typed my text using Ms Word first, organised my ideas and checked my spelling and grammar before posting it.* (Interview)

- *Fatema A.J.: There is no flow of ideas in f2f discussion. I often leave the classroom with a couple of points that I wasn't able to mention because of time constraint. However, we had enough time in the discussion board to brainstorm and arrange ideas, and add other points after reading related articles.* (Interview)

Students in these quotes claim that they did not use to plan or draft their writing in conventional settings, an observation also supported by teachers (*see* 6.2.2.2) and by our initial observations (*see* Chapter 1).

- *Mona: I feel I learnt more and better because I used to research the topic discussed, organise my ideas, arrange my time and present something new.* (Questionnaire)

- *Ali: I was very careful before stating posting my opinion about a topic. I used to organise my thoughts and support my arguments well because I had the feeling that you [the teacher] and my peers could hold me accountable for my viewpoints. That is why I used to ask for help from you or from my peers if I could not understand what I was required to do.* (Interview)

Hyland (2002) affirms that planning is less practised by novice L2 writers, who also seem to struggle with goal setting and text generation. Their concentration on planning, monitoring and reflection is often affected by their undeveloped inter-language and the increased mental load they experience when writing. It seems that the presence of a real audience that read and scritinised their writings in the discussion board motivated students to be more attentive to producing coherent and cohesive pieces of writing.

The existence of a real audience might have also led to more dialogic contributions instead of the isolated monologic pieces of writing produced in traditional writing classes (Boyd, 2008: 239). About 81% of the students claimed appreciating writing to real people who would read their writings and comment on them instantly (*see* Table 6.12). 19% of them (n=4) indicated that they used to check their online writings for

errors online only to impress their teacher and/or peers (Question 6), as also supported by interview responses:

- *Isra: I always thought about the others and what they'll think of me when they read my postings but at the same time I expressed my opinions very freely and I said what I wanted to say.* (Interview)

The presence of authentic audience in the discussion board was also positively perceived in other studies (Anderson, 2008; Boyd, 2008; Collins, 2000; Daley, 2002; Lapadat, 2002; Mauriello, 2000, Petrides, 2002; Wilson & Whitelock, 1997). Petrides' students, for instance, reported that they used to think more deeply when writing their online responses because of the presence of a real audience in addition to their appreciation of the continuous reflections they received on their linguistic output, and the permanency of their postings.

iv. Noticing Peers' Linguistic Choices

Another advantage reported by students was their ability to focus on the textual part by reading and noticing their peers' writing styles (*see* Table 6.13 above). According to Ortega (2009: 63), noticing signifies:

> the brain registering the new material, with some fleeting awareness at the point of encounter that there is something new, even if there is no understanding of how the new element works, and possibly even if there is no reportable memory of the encounter at a later time.

Ortega (2009: 107) also considers noticing crucial in understanding how learning occurs in L2 settings, as "detection plus activation into the focus of attention" is essential for effective SLA. Schmidt's (1995) *Noticing Hypothesis* also claims that learners need to notice the linguistic material the environment offers them to ensure an effective L2 learning. These learners start to notice during interactions the gaps between their writing styles and linguistic choices and those of their peers, resulting in self-initiated output modification (Swain, 1985).

Students explained that while this advantage is not easily attained in the traditional classroom settings, the use of the discussion board enabled them to assess their peers'

writing (67%) and use some of their lexical and grammatical structures (62%). Teachers' responses also supported this advantage (*see* 6.2.2).

- *Ahmed: I realised that there were more knowledgeable students than I was, and I became aware that it was neither wrong nor shameful to learn from them.* (Questionnaire)

- *Eman: We also had a good experience learning from our classmates because we learnt a lot from their use of particular structures and phrases and from their personal experiences.* (Questionnaire)

- *Amina S.: I am not good with linking words, so I thought some expressions that Fadheela used were useful.* (Interview)

- *Fatema T.: I learnt quite a lot from my classmates' postings. When I found a new term that I did not know, I used to translate it and later use it in my postings. I believe that my writing now is better than before and I have learnt so many things in a good way. I learnt from other students' experiences and styles of writing.* (Interview)

- *Fatema J.: I picked up expressions and vocabulary items from my classmates. For example, Sawsan used to have very nice expressions and words, so I loved reading her postings and learning from them. ... Regardless of grammar and use of language, people have unique structures and I noticed that some of the girls used things that I would not have thought about which was interesting.* (Interview)

- *Ali: Although I was not always active, I gradually noticed that my writing style was changing and that I was using new expressions and phrases my peers were using. I liked that although my male peers were sometimes mocking me for writing "like the girls" because of using encouraging comments.* (Interview)

The comments suggest students' awareness of the influence of peer's linguistic choices on their writing and that they were attentive to these choices, as also found by Shaw and Weir (2007).

It is noteworthy that the majority referred to the effect of their peers' choices of lexis more than the grammatical structures. The empirical findings in Chapter 4 support students' viewpoints, as more significant differences in the lexical complexity were found between the experimental and control group than in the grammatical complexity, although the latter was also found to be significant.

- *Fatema A.J.: We had some good experience learning from our classmates as we learnt a lot from their use of particular phrases and from their personal experiences ...I liked learning from my peers' use of different expressions.* (Interview)

Ortega explains that incidental learning of lexis takes place mostly "while reading for pleasure" (p.107). A few students, however, claimed that they did not use any of their peers' lexical or grammatical structures and that peers' writings had a negative impact on their own writing quality (*see* 6.3.3.e):

- *Mona: I think I used to write more formally before using the discussion board. I picked up a number of wrong expressions and started using abbreviations a lot in my writing.* (Interview)

- *Fatema T.: I do not think I learnt anything new from my classmates' posts. We should be careful not to let others influence our writing negatively.* (Interview)

Most of these students, however, were high achievers who claimed that their writing was better than their peers' writing. That said, the content analysis revealed many instances of successive copying of certain structures used by peers especially among average and low achievers (*see* 6.3.4). In her interview, *Wafa* explained that "*During the first discussion, a student used the expression 'shed tears' while I usually used 'cry' instead. I liked it and I started using it in my writings*." This seems to suggest that the discussion board functioned as a rich environment for linguistic input and output. Grabe and Kaplan (1996) explain that scrutinising each other's writing helps students identify "similar problems and weaknesses in their own writing as well as use innovative and creative ideas to which they are exposed…Students [will] develop as writers more effectively as they engage in transactions over their own texts and texts of others" (p.380).

v. Self-Monitoring and Self-Evaluation

Another learning strategy associated with noticing is self-evaluation. Almost 72% of students acknowledged the advantage of being able to identify their own errors (*see* Table 6.13 above). They claimed that they used to check their postings for errors before submitting them because they wanted to improve their writing competence (43%, Question 6). Almost 38% claimed that they wanted to avoid getting embarrassed in front of peers and/or teacher by making mistakes, while only 19% expressed that they aimed at impressing their writing audience, that being their teacher and peers.

- *Eman: I think my English improved especially that reading others writing made me think a lot about my own.* (Questionnaire)

- *Ali: I am a second year English student and it is important that I find my mistakes and correct them to improve my English.* (Questionnaire)

- *Wafa: I tried to make fewer mistakes in my writing because that will improve my language more and more.* (Questionnaire)

- *Ahmed: I wanted to post more mature messages and learn my mistakes to correct them.* (Questionnaire)

- *Semat: I used to check my writing a couple of times because I always have some mistakes. I wanted to improve my language. I wanted it to be a useful course for me especially that I would need English in the future.* (Questionnaire)

- *Isra: I noticed mine [my mistakes] by myself after posting them and reading them again. I thought that some phrases could have been formed in a better way.* (Questionnaire)

- *Balqees: I found students' writings very useful. Some of the students had better writing styles than mine, so I used to edit mine and improve it to their standards.* (Questionnaire)

Student interviewees also mentioned they used to review their postings after submission to identify their mistakes, evaluate their writing style and compare them to their peers' postings:

- *Fatema J.: Regardless of the things we debated, looking at my classmates' language and vocabulary expressions was very useful to learn as well as from your own mistakes because you often don't notice them until someone else makes them or someone tells us about them.*(Interview)

- *Amina S.: We communicated and we realised our problems better especially in writing. I realised that I have problems with vocabulary that I did not notice before. I didn't use to care much about the words I chose and I just wrote whatever was in my mind but now I make sure I use the dictionary before to make sure the words are suitable.* (Interview)

- *Isra: I thought my early postings on WebCT were immature because I do not have a lot of experience that would make do better than that. My life experiences are very simple and limited so I could not write mature discussions with deep thinking.* (Interview)

- *Fatema A.J.: I gave extra attention to my writing style because I did not want them to think about me differently. I did not share some of my viewpoints because I thought they were personal or I was too shy to do so.* (Interview)

- *Wafa: I used to use Ms Word to check my spelling and grammar because I do not like making mistakes in front of others. When I write and make a mistake, I feel bad about myself. Other students' opinions were also very important to me although it upset me that not many of them replied to my postings.* (Interview)

These comments suggest that students acknowledged the opportunity the use of the discussion board offered them to make partial or full modifications to their written output, as a form of corrective feedback (Long, 1996; Sotillo, 2000). It is noteworthy that this type of corrective feedback happens often on the lexical rather than the grammatical level (Lee, 2009). This has been evident in this study, as data analysis has shown more development of students' lexical complexity than their grammatical complexity (*see* Chapter 4).

In summary, it seems that students appreciated the advantages of *sharing opinions with authentic audience, peer interaction, teacher involvement, increased and improved written output,* and *reduced anxiety.*

6.3.3 Disadvantages of Using the Discussion Board

Some students' responses to certain questionnaire statements revealed a number of perceived disadvantages that reflected some frustration with the medium. These were gender dominance, increased pressure, disappointing peer responses, erroneous input from peers, overwhelming writing tasks and some technical problems.

a) Gender-Dominance

It is noteworthy that all male students (n=4) claimed that they did not like to participate much in the discussion board because of the dominance of females over the discussions (*see* 6.3.3):

- *Hussain: Girls made some of the topics boring!* (Questionnaire)
- *Mohammed: When we were discussing general issues, female students tended to direct the discussion towards matters that they cared about like shopping and establishing family. Most of the time I felt that I had nothing to add to these discussions when the girls controlled them. This was also why the other guys did not always participate, although it was not the case all the time.* (Interview)
- *Ali: Although I liked the discussions, I did not find it important to comment regularly on the posts especially that they were mostly posted by the girls. I could see that they enjoyed participating and receiving replies a lot but I just did it for the sake of participating in the debates and not for making friendships like the girls.* (Interview)

Some of these male students, however, appreciated the freedom of male-female interaction facilitated while using the discussion board:

- *Ahmed: It was interesting for me to know my peers more especially the girls since I cannot talk to them openly about personal or sometimes even academic matters.* (Questionnaire)

The fact that males did not enjoy peer interactions because the discussions gradually became female-dominated could be a negative aspect of these discussions (*see* 6.3.3). Recommendations on how to avoid this kind of gender-related hostility are outlined in Chapter Eight.

b) Increased Pressure

A number of students also claimed that the online discussion caused more anxiety than in-class discussion. These students were mostly low-achievers, who mentioned that the presence of a real audience in these discussions pressurised them into producing more accurate writing while their proficiency level was low. Another set of students asserted that their shyness was not reduced in the online settings:

- *Eman: I am a shy person as I said earlier and I really cannot confront people with what I really think so that I do not lose their friendships and I do not intimidate anyone even in the discussion board.* (Interview)

What was also noteworthy was the reference to some levels of anxiety by other students during the interviews. It seems that the permanence of students' written output in the discussion board and the availability of a real audience have pressurised students of different academic levels into producing writing that would leave a good impression on their audience. This observation can be manifested in these students' comments:

- *Fatema A.J.: I gave extra attention to my writing style because I did not want them to think about me differently.* (Interview)

- *Wafa: ...When I write and make a mistake, I feel bad about myself...it upset me that not many of them replied to my postings.* (Interview)

These statements suggest that the discussions placed some pressure on the students to write more accurately, use complex lexical and grammatical structures, notice their peers' writing and use external resources to strengthen their argument. Although one might perceive this pressure negatively, I believe that it is necessary that students have

some intrinsic drives that can force them to pay more attention to their written products and possibly employ different learning strategies unconsciously. This draws our attention to the element of accidental learning versus intentional learning, both of which are important elements in students' learning experience. "Both of these types of learning – intentional or accidental – need more study if we are to realize their role in relationship to Internet-based learning" (Hill *et al.*, 2004: 453).

c) Disappointing Peer Responses

Some students expressed their frustration because of the limited participation of some of their peers (n=6, Question 15) and the low number of peer responses they received:

- *Marwa: Sometimes there were not enough replies on the topics from the student.* (Questionnaire)
- *Eman: The students were mostly busy and late in posting their messages.* (Questionnaire)

A particular discomfort with using the medium was expressed by low-achieving students, who claimed that they felt embarrassed when the advanced peers corrected their mistakes publicly. On the one hand, advanced students enjoyed reading their peers' writings and correcting them using the discussion board's automated direct quotation function. In the extract below, *Fatema J.* uses this function to forward a peer's posting back to her with corrections added and grammatical explanations provided.

Ext.6.3:

Message no. 106[Branch from no. 96]

Posted by FATEMA J. on Tuesday, October 14, 2008 5:28am

Subject: Re: Speak your mind

Hi Zahra,,

True people tend to find it much easier and appealing that newspapers are available online.

I have a few comments about your entry that I hope will be useful =),,,

U used *so* in your article and then inserted a comma " , " it should be before so or without a comma ..

Another thing is, in the ending "All in all" should be followed by a comma because it is a linking word that needs to be followed by one.

Finally, the Internet has no plural as far as I know so it is better to say the internet is such and such =)

Hope you find my comment handy =D

Regards,

FJ

Advanced students expressed that they enjoyed correcting their peers' mistakes:

- *Wafa: It was really fun. I used to spend a lot of time reading students' writing and seeing their mistakes. I even used to print their posts and then correct them just like a teacher.* (Interview)

Weak students, however, found this behaviour intimidating and offensive especially that these instances of error-correction were seen by their teacher and peers.

- *Zahra A.: I did not like it when Fatima J. sent me corrections on my online posting although I know she did not mean any harm. I did not appreciate it and I felt embarrassed in front of all my classmates and you. What was she thinking?* (Questionnaire)

Eventually, these weak students stopped responding to their advanced peers, who ultimately felt some hostility and stopped their error-corrections. The teacher also notified these students that they were not expected to correct their peers' mistakes. In the extracts below, some of these advanced students reported that they feared their corrections caused embarrassment to their peers and affected their relationships with them:

- *Wafa: I saw other students' postings and I thought they had some grammatical and spelling mistakes but I could not tell them. I tried it once with a peer but she told me not to do that again! I enjoyed checking their writings but I just did not send them my corrections because I did not want to lose their friendships.* (Interview)

- *Fatema J.: In the first discussion, there was this girl ... I corrected the whole thing and then sent it to her thinking that she would thank me but she did not reply to me. I think she was offended. I do not think she showed it but if I were she, I would have been offended too.* (Interview)

This finding should not be understood in the sense that discussion boards are only suitable for advanced students as occasional hostility among participants in online discussion is not uncommon, sometimes making the online experience disadvantageous for some students, just as much as in-class discussion might occasionally be(Rourke *et al.*, 1999). Thus, teachers need to pay extra attention to minimise the possibility of hostile behaviour among students. Suggestions on how to minimise this kind of behaviour such as providing students with training on peer response and netiquette are outlined in Chapter 8.

d) Erroneous Input

A number of advanced students complained that they picked up some erroneous words and expressions from their peers, which they continued using until the teacher drew their attention to them. For instance, three students reported that they copied an average student' use of letter layout when posting online contributions. These concerns were also supported by teacher interviewees, and instances of erroneous use of peers' writing styles were found in our content analysis of the transcripts that support this claim (*see* 6.3.4.3). Although not many instances were found, I believe that teachers need to be attentive to this disadvantage by monitoring the discussions, correcting these errors instantly and providing students with explanations.

e) Overwhelming Writing Tasks

An interesting finding was revealed in association with writing quantity. Although most students (86%) claimed that they liked the amount of writing they did on a weekly basis (Question 9), few interview responses suggested that that the amount of writing submitted was overwhelming. For instance, while *Marwa* mentioned that she enjoyed producing more writing, many other students such as *Fatema T.* revealed that some of her peers felt overwhelmed by the amount of writing they did in the discussion board:

> *I know that some of us were busy with other course requirements and didn't always have the time to post their opinions as much as they wanted. The time was not enough and they had other things to do.* (Interview)

It is likely that some students' responses in the questionnaire were affected by social desirability bias and therefore, provided positive responses to please the teacher. This particular student, however, mentioned that these were mostly concerns of low achievers. Four other students expressed that posting online contributions was tiring (*see* Table 6.13 above). They explained that they were unable to keep up with the pace of the discussions because of their slow typing and lack of technological competence:

- *Isra: We don't always have the time to go online and other students can be much faster than us so we feel left behind.* (Questionnaire)
- *Sawsan: It needs time to reply to other students and requires typing speed which we don't all have!!* (Questionnaire)

The following student attributed her discontent with the discussions to his low academic proficiency. He explained that the discussions were complex and required advanced language knowledge that he did not possess.

- *Mohammed: I tried coping with the other students on the discussions at first but it was very difficult for me because I am weak in English and I do not know many words or phrases that I can use to discuss something. At first, I used to reply with simple affirming sentences but then the discussions became more advanced so I started participating less.* (Interview)

Thus, I believe that if teachers are to make participation in the discussion board mandatory, a particular number of postings and words per week must be specified to ensure that students' individual differences are catered for.

f) Technical Problems with WebCT

A few students, who occasionally encountered some technical problems of access, downloading or uploading, reported their dissatisfaction with the discussion board.

- *Afrah: I had few problems in submitting my assignments twice because the system was down. My sister helped me because I am not good at using technology.* (Questionnaire)

- *Mona: I don't like technology and I am good not at it. This is why I found using the board problematic at some points.* (Questionnaire)

Respectively, Hyland (2003) argues that technophobic students find the use of any means of online communication in their L2 learning processes disadvantageous.

A couple of students also expressed their negative perceptions of *WebCT*'s interface:

- *Zahra A.: I think the shape of the WebCT not nice ... it will be very nice if they add colour and some different type of media.* (Questionnaire)

- *Balqees: It was so dull...there were no emoticons that we could have used and to use different fonts and colours was so complicated.* (Questionnaire)

- *Amina: You need to use more colours and allow for emoticons to make it more interesting. Smilies sometimes say things that I can't express in words.* (Questionnaire)

Two other students also criticised their inability to post topics for discussion and hence, suggested using more attractive, flexible and user-friendly learning platforms, as also suggested by teachers.

- *Fatema J.: The topics we discussed were mostly course-related. I wish we were able to discuss more personal issues that mattered to us more as students.*

- *Wafa: There were times that I wished we, as students, could raise a topic for discussion instead of you such as those related to the difficulties we face at the university with our courses and teachers.*

In sum, some students had some negative perceptions about the *increased anxiety and gender dominance, reduced peer responses,* and *increased writing quantity*. To rectify these negative aspects, students provided a number of recommendations for more effective use of the medium.

6.3.4 Students' Recommendations

The questionnaire offered space for students to express concerns and make recommendations for better use of the discussion board. The majority of the responses recommended using it in all *DELL*'s language courses, including literature ones:

- *Wafa: we need to use the discussions in addition to the course writings and assignments.* (Questionnaire)

- *Fatema T.: I believe it would be better if online discussion were used in all the courses across the university. For example, we need to discuss what we learn about the novels and poems in literature courses but we do not have enough time for that during class time, so it would be better if discussion was done online.* (Interview)

- *Isra: I would prefer if using the board were made a uniform in all language courses at the department. We can benefit a lot as students if it was used in the literature courses in particular.* (Interview)

Similar views were given on the importance of providing L2 students with extensive writing practice using the discussion boards available.

- *Marwa: I still believe that online discussions were useful especially for having a lot of writing practice. I even miss this aspect in my current language courses and wish if the other DELL instructors made use of it.* (Interview)

- *Fatema T.: I feel that English major students need more writing practice in their English courses because writing competency is a necessity even in literature courses, so language courses have to serve the literature ones by putting more emphasis on writing... We always ask most of our instructors for more writing practice but in vein. Some instructors even do not give us any feedback on our writing assignments.* (Interview)

- *Fatema A.J.: I believe we need more writing practice and this can happen if they make it mandatory to use the online discussion in every language course. It would be better if one hour were allocated for online discussion and two for lecture time. ... I believe that having both online and classroom discussion is better because some students like online discussions while others prefer f2f ones.* (Interview)

Other students recommended allocating grades for participating in discussion boards to provide students with more incentives to participate effectively. Similar recommendations were provided by the teachers (*see* 6.2.3).

In summary, it seems that most students had positive perceptions of using discussion board in their L2 learning experience with special regards to their writing proficiency enhanced by the various "liberating" advantages and strategies offered by "the written medium" (Coffin *et al.*, 2003: 145). Similar results were found by Vonderwell (2003), whose students reported that the discussions helped them write more carefully, and produce more thoughtful comments. Lapadat (2002) asserts that "...asynchronous conferences create a high premium on good writing, and as participants strive to put their thoughts into writing clearly, they will take their time, reflect, and consider their audience's perspective, and use critical and higher thinking skills" (p.12).

6.4 CONCLUSION

This chapter explored how the *UoB* teachers and experimental students perceived the merits and perils of using discussion boards in pedagogical settings.

In summary, the analysis of teachers' and students' responses revealed a number of important findings:

1. Although the majority of the *UoB* teachers do not utilise the discussion board in their online courses mostly because of increased workload and lack of time and fear of encouraging the production of *bad English*, most of them acknowledge the potential influence the use of the medium might have on enhancing students' productivity, interactivity and participation.

2. The majority of the students had a positive view of using the medium and preferred online discussion to in-class discussion.

3. Student and teacher survey responses suggested possible variables that might have influenced their perception:

    a. The freedom of speech in the discussion board seems to offer anxiety-free learning opportunities and the removal of communication barriers especially those associated with stereotyped gender roles. According to Althaus (1997), online discussions help students improve their learning by being placed in "an intellectual environment that encourages active, thoughtful, and equal participation from all comers" (p.158). It appears that the online settings reduced societal inequality and male dominance in the discussions (*see* 6.3.3). Similar findings were found in a number of studies (Blum, 1998; Davidson-Shivers *et al.*, 2003; Graddol & Swann, 1989; Herring, 2003; Im & Lee, 2003; Kern, 1995a; Rickert & Sacharow, 2000; Warschauer, 1995). However, the change in gender roles was observed to cause some hostility among males, negatively affecting participation. Thus, I can conclude that gender seems to have influenced students' participation, interactivity and sense of social presence manifested in the excessive use of affirmation and mitigated criticism. I find this observation crucial in understanding that the dual effects the use of the discussion board might have on gender roles and in ensuring the provision of gender-free exchanges in the online community, in which they project their personal presence by making their viewpoints heard at all time and for unlimited duration. Similar findings were found by Wang and Woo (2007).

    b. Enhanced interactivity and established relationships with the teacher and peers in the discussion board was considered one of its merits that classroom settings do not allow for. This finding was also reported in other studies (Blum, 1999; Powers & Mitchell, 1997). It seems that the "degree and quality of communication among classmates and with instructors while participating in online activities" (Daugherty & Funke, 1998: 8) encouraged students to engage in interactive reflective exchanges. Peer response facilitated through online interactive

collaboration seems to facilitate L2 students' learning and increase their awareness of the processes and their language scaffolding, as also stated by Hyland (2003), who further argues that during 'networked writing', "Students appear to value peer support while actually composing, rather than receiving comments on written products" (p.151).

Hence, teachers should provide their students with more opportunities to interact effectively with them and with peers. However, we have to be cautious, as certain measures need to be taken to ensure that neither teachers nor students are overwhelmed with the amount of interaction in online settings. Results showed that teachers complained of the extra time and effort they exert to cater for their students' constant demands in online settings. Pedagogical implications and strategies for time management and proper task design are discussed in the final chapter. We also need to be cautious of possible hostile behaviour arousing from reduced or negative peer responses. Students must be equipped with guidelines that control their online behaviour and minimise potential hostility, especially between students of different gender and academic levels.

c. Findings suggest that while L2 instruction in the *UoB* suffers from the low production of sufficient written output or the reception of adequate language input, the discussion board is a suitable environment for exercising and evaluating their linguistic knowledge and for identifying and learning from peers' writing styles and linguistic choices. Students believed that online discussions positively influenced their written output and their writing confidence because of exposure to peers' writings and because of the different learning strategies adopted such as *functional planning, noticing* and *self-evaluation*. Ortega (2009) argues that successful L2 learning necessitates increased linguistic *input* and written *output* in addition to *interaction* and *attitude*. Hence, practitioners should aid their teaching methods with different types of positively perceived interactions that enable their students to receive and produce meaningful discourse leading to constructive learning (Duffy & Cunningham, 1996;

Jonassen, Davidson, Collins, Campbell & Bannan-Haag, 1995). Teachers are urged to "facilitate psycholinguistic and metalinguistic processes of segmenting the input, noticing gaps and holes, parsing messages syntactically, monitoring and hypothesis testing" (Ortega, 2009: 79). That said, we need to be cautious that the input students receive must be as comprehensible as possible to ensure accurate learning and comprehensible output, especially if we accept the claim that accidental learning influences SLA as effectively as intentional learning (Hill *et al.*, 2004).

d. Teachers' and students' claim that the use of the discussion board develops the written quantity and quality seems to support the findings of the previous chapters: significant differences in students' accuracy and grammatical and lexical complexity –but not fluency– were found in Chapter 4 in favour of using the discussion board, and increased participation, interactivity and written output in the discussion board were found in Chapter 5, in which many cases of noticing and copying peers' linguistic choices were presented. It can therefore be concluded that the discussion board is an effective tool in developing L2 students' writing proficiency. The sum of these findings of these three chapters have provided answers to the first research question and seem to suggest that using discussion boards does not negatively affect the discourse produced by students in these settings. The next step then is to verify these findings by carrying out an analysis of the linguistic features of this discourse to decide on its similarity to informal speech or formal writing to answer the second main research question in the following chapter.

e. It appears that technical problems and dissatisfaction with the learning platform could hinder the proper deployment of any instructional technology. Thus, certain measures need to be taken to ensure the provision of effective technical support and technical training sessions for instructors and students.

In sum, it seems that the freedom of speech, reduced anxiety, diminished gender differences, enhanced interactivity with peers and teacher, improved writing quality and quantity, and developed learning strategies were the most significant variables that influenced the overall positive perception of using the discussion board in learning contexts. Similar variables were found by Wu and Hiltz (2004).

However, I should re-mention a number of limitations to these findings. Firstly, one should be cautious when interpreting these findings since they only represent one group of participating teachers (n=30) and two groups of students (n=41) within a particular context (an L2 course at the *UoB*) and reflect on their experience of using the discussion board within a relatively short period (one semester=12 weeks). These findings also remain tentative, as we have to consider variables affecting favourable responses such as possible social desirability bias and possible influence of the novelty factor. However, I have shown in this chapter the measures used to minimise the influence of these variables on participants' responses.

Another restriction is the inability to overgeneralise these findings because online discussions vary "according to the purpose of writing, the subject matter and the relationship between those making the exchange" (Coffin *et al.*, 2003: 141). After all, the discourse exchanged is claimed to be "more adequately understood by the conversants, particularly as they each reciprocally factor the intentions of the other into their interactions" (Nystrand *et al.*, 2003:136). The manners in which students participated and interacted in the online discussions mostly depended on their individual differences and personal backgrounds and motives. Booth and Hulten (2003) similarly argue that "It is the individual and the individual only that develops the capability to experience something in a new way ... the locus of learning is identical with the individual learner" (p.70). Speck (2002) adds that the way "students learn to write in online classrooms, as in other classrooms, is wed to what students write to show that they are learning" (p.16).

To conclude, the findings of the pedagogical part serve as the basis for a number of implications and recommendations presented in the final chapter. However, these findings necessitate also an investigation of the linguistic features of the discourse found in the discussion board to have a full assessment of the possible advantages of

using discussion boards and to address teachers' concerns about the adequacy and comprehensibility of students' input and output in these settings, which is examined in the next chapter.

DISCUSSION OF FINDINGS
PART II

LINGUISTIC ANALYSIS OF THE DISCOURSE OF DISCUSSION BOARDS

CHAPTER SEVEN

LINGUISTIC CHARACTERISTICS OF ONLINE DISCOURSE IN L2 DISCUSSION BOARDS

CHAPTER SEVEN

LINGUISTIC CHARACTERISTICS OF ONLINE DISCOURSE IN L2 DISCUSSION BOARDS

7.1. INTRODUCTION

Differences between online discourse and written and spoken language have provoked much discussion among researchers (*see* Chapter 2, Section I). A number of linguists have investigated the linguistic features of online discourse and positioned it on a continuum with speech and writing at opposite poles (Baron, 1984; Biber, 1988; Davis & Brewer, 1997; Leech, Dechar & Hoogenraad, 2006; Spitzer, 1986). I intend in this chapter to provide a description of the discourse found on the *UoB's WebCT* discussion board and place it on a continuum between speech and writing to answer the second main research question investigating the extent to which discussion board discourse resembles writing and speech. As stated earlier, the aim of this question was to verify though discourse analysis teachers' claims that using discussion boards can negatively influence their L2 students' academic writing resulting in fragmented, erroneous, speech-like discourse full of instances of code-switching and/or code mixing.

The chapter starts with an empirical examination of the frequency of the discoursal features of the discussions. A corpus consisting of 10 threads with a total of 515 messages and 60,000 words was created and studied using *Wordsmith Tools*. The data was coded for particular features that are more likely to occur in spoken and written language (Biber, 1988; Biber, Johansson, Leech, Conrad, & Finegan, 1999; Carter & McCarthy, 2006; Halliday, 1989; Halliday & Hasan, 1976; Power, 2009; Scott & Tribble, 1996). The chapter ends with a discussion of the results and an overview of their implications.

It is noteworthy to mention that unless stated otherwise, this study uses the term *online discourse* in this chapter to refer to the discourse produced by the experimental students in the discussion boards.

7.2. QUANTITATIVE ANALYSIS OF ONLINE DISCOURSE

This section examines the linguistic features of online discourse and presents quantitative findings based on frequency counts and other statistical work, following the guidelines of some key researchers in this field (Biber, 1988; Carter & McCarthy, 2006; Davis & Brewer, 1997; Gillett, 2009; Halliday 1978; Hyland, 2005; Shaw and Liu, 1998).

7.2.1. Analysis of Speech-Like Features in the Online Discourse

The following sections present findings in relation to the frequency of the following speech-like features in the corpus:

a) Speech markers (discourse markers, and politeness markers)
b) Clausal combination (use of conjunctions, phrasal chaining and subordination)
c) Simple grammatical structures (increased use of pronouns and verb phrases, and use of exclamatory and elliptical phrases and contracted forms)
d) Style shift
e) Code-switching/mixing

The rationale behind choosing these features in particular is that they represent the most common speech properties suggested by key researchers in this field (Biber, 1988; Carter & McCarthy, 2006; Crystal, 2001; Halliday, 1978). Other features such as the use of contracted forms, double negation, split infinitives, predicative adjective, humour, and repetition were disregarded because there were no significant frequencies found in the corpus.

In analysing these features, a number of comparisons with other corpora and studies are made.

a. Speech Markers

1. Discourse markers

Discourse markers (e.g. *right, well, so, anyway, okay, you know, I mean*) are "lexical expressions drawn from the syntactic classes of conjunctions, adverbials, and prepositional phrases. With certain exceptions, they signal a relationship between the segment they introduce ... and the prior segment" (Fraser, 1999: 950). In other words, these markers help the speaker understand the anaphoric reference or to show his/her acceptance or acknowledgement (Schiffrin, 1987).

These discourse markers in particular have different functions such as opening up a conversation or closing it down (e.g. *right, so, now, anyway*), marking topic boundaries (e.g. *yeah, okay*), focusing attention (e.g. *hey, look, listen*), diverting a topic (e.g. *oh*), shifting (e.g. *well*), or resuming (e.g. *anyway, oh yeah, so*) (Crystal, 2001). Discourse markers such as *well, now, anyway* and *anyway* are used often to sustain textual coherence (Biber, 1988) and to indicate that the person is considering his/her response to a previous question or topic, and to monitor the flow of information in conversations (Carter & McCarthy, 2006; Chafe, 1985).

As Table 7.1 below indicates, some of the most frequent discourse markers in spoken language suggested by key researchers (Biber *et al.*, 1999; Carter & McCarthy, 2006; Moore, 2009; Power, 2009) were found in our corpus but with a relatively low frequency rate (standard frequency ratio: 1.7:1000). It is noteworthy that the British Academic Spoken English (BASE) corpus had a total standard ratio of 7:1000, while there were no significant occurrences of these markers in the British Academic Written English (BAWE).

Table 7.1: Standard Frequency Ratio per 1,000 words of Discourse Markers in the Online Discourse Corpus and BASE

Features of Speech	Types	Online Discourse Corpus (ratio per 1000 word)	BASE Corpus (ratio per 1000 word)
Discourse Markers	Fillers/ hesitators: ers, erms, em, ums, mmm/amm, hmmm, awwwww, like, wow/woow, oops, duh, hey	0.8 (f=46)	0.4 (f=515)
	Interjections: well, right, now, yeah/yeh/ye, I mean, hah, anyway, anyhow, Ok, oh, you know,	0.9 (f=52)	6.5 (f=8743)
TOTAL		1.7	7

The following corpus extracts illustrate students' use of speech discourse markers such as interjections, hesitators, fillers and attention signals:

- **Well**...that's all I have to say about this topic.
- My dreams would come true :P Million dinars! **Amm** that's a lot of money, well first I would buy an expensive car.
- **Hmmm** mine must be Venice in Italy...
- Must feel like they are in heaven..and it takes a boat to wander around there like.. **wow** what a beautiful way to transfer from a place to another!
- because people in these ages were living in a state of misery, **I mean** the war , injustice , and poverty ...
- I think the earth was one big continent .**anyway** it doesn't matter, all I care about is the time.
- The biggest obstacle between me and Venice must be the lack of cash **duh**!
- **kind of** dances ... i just love watching them ,,,, so you don't know someday , somehow
- That doesn't mean that they cut off from life, **or something**, that they would deny the rights.
- that what i think **hehe** its just an opinion.
- **hey** this is not the point but we all have issues.

Students' underuse of these markers shows that although the online discourse contained features of spontaneity, it was not entirely speech-like (Crystal, 2001). The low ratio signifies that most students rather preferred to write in an academic style especially for the high achievers who found the discussions convenient to demonstrate their linguistic abilities and knowledge. It was mostly the low achievers who used these markers possibly because of the limited linguistic competence and lexical knowledge. Thus, they used these markers to stay interactive in the discussion board with a minimum linguistic competence.

It has to be noted that the majority of these spoken discourse markers occurred in the responses, as shown in Table 7.2, which shows that students' initial postings were mostly formal and followed the writing conventions taught while their responses were interactive and hence, more speech-like.

Table 7.2: Percentage of the Discourse Markers in Initial Postings and Responses

Features of Speech	Types	Initial Postings	Responses
Discourse Markers	Fillers/hesitators	22%	78%
	Interjections	29%	71%

The content analysis also revealed the use of vocatives and direct address either in the form of greetings (e.g. *hi, hello, girls, guys, dear, darling, sweetie*) and addressivity (i.e. the inclusion of the addressee's first name or nickname in an utterance) (Biber *et al.*, 1999; Gillett, 2009; Werry, 1996). There was frequent use of these vocatives in students' responses (n=183, standard frequency ratio: 3:1000), as shown in the following examples:

- Hello ***Zahra***, Although it is too expensive to pay a visit to the United State
- I agree with you ***Amina*** when you said that the radio is important
- In other words it is less expensive. What do you think ***Fatoom***? *(Nick name for Fatima)*
- place Nice choice ***girl*** .. Nothing like having a great time there.
- Where are u ***guys****?!!!*
- ***Guys!!!***!You can go where ever you want when you get married.....HA HA HA!!!!
- ***Hi everyone***. It is beautiful to be mother but it is a difficult responsibility to take care of baby, isn't it?
- I enjoyed to see cooking programs and try my best to cook well..but ***mydear*** i had no website.

The occasional use of these vocatives indicates that students were sometimes using speech-like features and possibly considered the discussions similar to their face-to-face conversations.

2. Politeness markers

Politeness markers are either polite speech-act formulae (Biber *et al.*, 1999) such as *please, thank you, sorry, that's ok, no problem, you're welcome, excuse me* and *good luck* or expletives such as *Oh my God, Thank God, God forbid, etc.* These markers were also frequently identified in students' responses, as shown in the following examples:

- *Balqees*: my story is extremely unreal. ***Sorry*** ..our teacher asked us to use imagination if we had no story**.... *my dear... Thank god*** .. that you eventually feel so satisfied ...
- *Amina S.:* Good Persian girl Sawsan.. Is it difficult or easy? Teach me some words, ***please.... Oh! My god*** (AMAZING) I am now engaged, so it would be a great chance
- *Fatema J.:* ***I am sorry*** to hear about your difficult start but happy to know how brave... =D CUTE! Do show us pictures of the country ***please*** =D! -
- *Zahra A.:* Â ***it's ok*** â now the java was in my computer but i think the net was too slow
- *Fatema T.:* Wish you ***good luck*** my dear. I hope your dreams will come true one day. ***Good luck*** with your dream and I *ask Allah* to make it come true very soon.
- *Maryam:* it bring them closer in some occassion like what ***god forbid*** some problems can ... ***sorry*** about my spelling mistakes but this %^&%$^%$ keyboard is driving me NUTS!!

The use of these formulae implies that the discussions were relatively similar to speech as students were possibly using these discussions to establish social relationships with their classmates by being courteous, and supportive (*see* Chapter 5). Students also were very careful not to offend their addressees when presenting their counter-arguments by using speech hedges and possibility modals. Hedges (e.g. *something like, more or less, almost, maybe, sort of, kind of*) are markers that reflect the lexically-limited but interactive nature of speech and reveal "uncertainty or lack of precision in the presentation of information" (Biber, 1988: 106) in addition to the user's awareness of the limitation in word choice in conversational discourse (Chafe & Danielewicz, 1986), while possibility modals (e.g. *could, can, might)* are more associated with argumentative statements aimed at persuading the addressee without being offensive (Gillett, 2009).

b. Clausal Combination

Students' transcripts were scrutinised for their use of different clausal combination techniques often used in speech such as the increased use of certain conjunctions, phrasal chaining and subordination without complementizers. Examples on each are given in the sections below.

1. Increased Use of Conjunctions

Another feature of spoken language is clause combination using coordinating conjunctions such as *'and'*, *'but'* and *'or'* or subordinating conjunctions with

coordinating implications such as '*because*' and '*so*' (Carter & McCarthy, 2006). These coordinated clauses are particularly used when a person is narrating a personal incident, as indicated in the following extracts:

Ext.7.1:

Message no. 280
Posted by KHADIJA on Saturday, November 29, 2008 4:08pm
Subject: Me & English

One day, when I was in the fourth grade, my English teacher banished me for writing under the English words in Arabic *so* I can read it, *because* it was my first year to take English lessons, *and* I just couldn't stop crying *and* I didn't want to continue taking those lessons *but* I made my mind to learn English *and* to be good at it.

Ext.7.2:

Message no. 191[Branch from no. 189]
Posted by MARYAM E. on Sunday, October 26, 2008 9:49am
Subject: Re: What makes you happy?

heeey uu sorry *i mean* it bring them closer in some occasion like *what god forbid* someone gets sick.. and in need for treatment which requires money the sick person don't have .. *sure* the one with family would help them which may bring them closer... *am not saying* it's the main tool to bring a person close to another but somewhere deep inside that what i think *hehe it's just an opinion*!

The most frequently used conjunction was '*and*' with almost 1700 occurrences (standard frequency ratio: 26:1000) and it was also the most-frequently used word in the wordlist. This is very frequent in spoken language because speakers often connect clauses loosely together, instead of using prepositional phrases or relative clauses to present the information in a specific manner (Biber, 1988). Likewise, the increased use of '*because*' in causative structures is often common in speech to justify personal behaviours or opinions (Biber, 1988; Halliday, 1979).

There were over 2338 instances in the corpus of combined clauses with '*and*', '*but*', '*because*' and '*so*' (standard frequency ratio: 36:1000), 64% of which occurred in the initial postings. This could be attributed to the fact that students' initial postings were more cohesive and well-structured than their responses which consisted mainly of run-on sentences or sentence fragments. This is expected in informal L2 writing when students' main objective is to be communicative so they pay little attention if any to producing coherent sentences.

2. *Phrasal Chaining*

Phrasal chaining (i.e. the sequences of a number of noun or adjective phrases) is another speech-like feature (Carter & McCarthy, 2006; Power, 2009). The content analysis of the transcripts revealed some instances of phrasal chaining, as shown in the following extract:

Ext.7.3:

Message no. 131[Branch from no. 122]
Posted by MONA on Sunday, October 26, 2008 12:20pm
Subject: Re: What makes you happy?

I AGREE with all of you that family and friends are the most important then anything not just money ....
it's a simple fact take this for example imagin yourself sitting in a coffee shop or in a restaurant having your lunch with all your beloved ones surrounding you laughing, making jokes, telling stories anything you would imagin you will only feel the joy, exitment and relaxation .....
That is what is important, in my side i just love having a lot of friends who you know that they will support you during you problems and needed times .
I just love people *or else* i don't think that i would dare to live lonly *i hate being lonely*.

Ext.7.4:

Message no. 136[Branch from no. 127]
Posted by Zahra A.N. on Sunday, October 26, 2008 12:25pm
Subject: Re: What makes you happy?

oh ya the beach *what can i say* i just love everything about it *the view , the smell , people hanging out there and here with their families.*

and yes i totally agree with you i envy emarati women but *you know what* we could do that in lost paradise ...something is better then nothing :)

This feature was only found in the responses exchanged between the students. As also noted above, it seems that students did not give their responses the care they gave to their initial postings, so these responses contained numerous run-on sentences, as shown in Ext.7.3 above.

3. *Subordination without Complementizers*

A feature associated with the elaboration of information is the increased use of subordinating *that*-clause fragments with the omission of the complementizer *that* (e.g.

He said he will come) (Biber *et al.*, 1999), which are relatively typical of unplanned and fragmented real-time discoursal communication. *That*-clauses in this respect are used to signify the affective personal voice of the addresser (Biber, 1988) and are mostly used with personal pronouns and certain verbs such as *think, know, believe, say, etc.*

There were around 250 frequencies in the corpus of *that*-clause fragments which represents another similarity between the asynchronous discourse exchanged and the spoken language but it cannot be claimed that they were frequent.

c. Simple Grammatical Phrases and Structures

Speech is often characterised by simple grammatical phrases and structures. We scrutinised the corpus for students' use of a number of these structures: increased use of pronouns and verb phrases, and short and elliptical phrases.

1. Increased Use of Pronouns

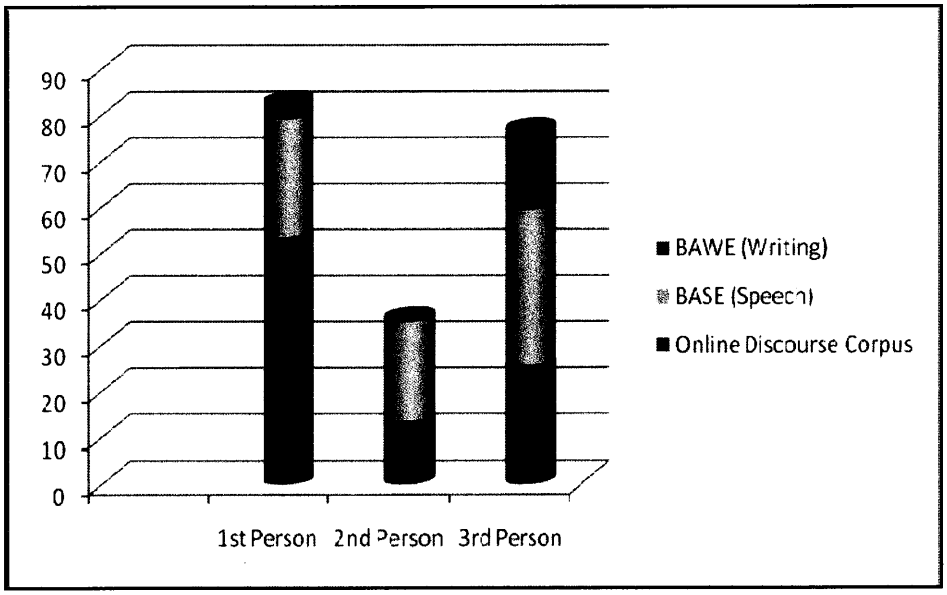
The first speech feature Carter and McCarthy (2006) list is the increased use of pronouns over nouns, which Carter and McCarthy attribute to the intimacy they provide among conversants. Gillett (2009) in particular refers to speakers' extensive use of first person pronouns in addition to some other pronouns such as *it*, *you*, *we* and *they*. These pronouns have different functions: *1st* person pronouns signal a user's involvement with the text and *2nd* person pronouns reflect the interactive nature of addresser-addressee relationships (Biber, 1988), while *3rd* person pronouns "mark reference to intimate, typically human referents apart from the speaker and addressee" (Biber, 1988: 109).

There was frequent use of pronouns in our corpus with a standard frequency ratio of 93:1000 (9%). *1st* person pronouns and *2nd* person pronouns in addition to the 3rd person pronoun *it* were the most frequently used pronouns, as shown in Table 7.3 and Figure 7.1 below. These findings were compared to those from other corpora such as the British Academic Written English (BAWE) and the British Academic Spoken English (BASE). *Sketch Engine* (http://the.sketchengine.co.uk/open) was used to find the frequency of these pronouns in BAWE and BASE, as shown in Table 7.3 below.

Table 7.3: Standard Frequency Ratio per 1,000 words of Pronoun Types in our Corpus, *BAWE* and *BASE*

Pronouns	**Online Discourse Corpus**	**BASE (Speech)**	**BAWE (Writing)**
1st Person	53.5	25.5	3.5
2nd Person	13.5	21.5	0.6
3rd Person	25.5	33.8	17.3

Figure 7.1: Standard Frequency Ratio per 1,000 words of Pronoun Types in our Corpus, *BAWE* and *BASE*

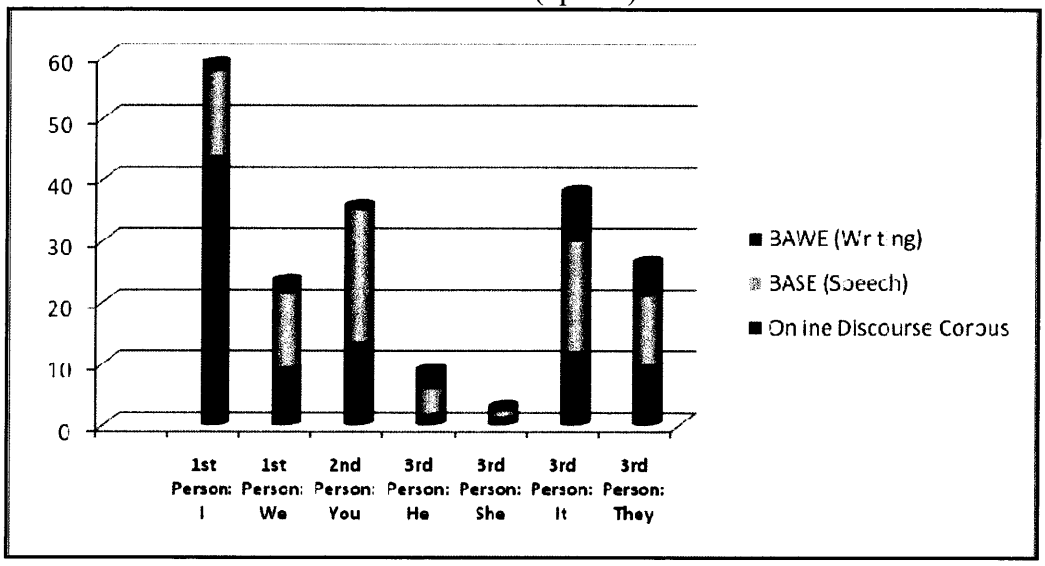


In total, the use of pronouns *I, we, you* and *it* in the corpus made the online discourse more akin to spoken language, as shown in Table 7.4 and Figure 7.2 below. However, the use of 1st person pronoun in our corpus was much higher than in BASE or BAWE. This could be partially attributed to the genre of our corpus as students' contributions were argumentative, so it was natural for students to use these pronouns to refer to their own opinions and express standpoints. Another explanation could be related to students' sense of personal presence within a community in the discussion board (*see* Chapter 5). This sense might have encouraged them to share personal information to impress their peers and establish relationships.

Table 7.4: Standard Frequency Ratio per 1,000 words of Pronouns in our Corpus, *BAWE* (Writing) and *BASE* (Speech)

Pronouns	**Online Discourse Corpus** Ratio per 1000 word	**BASE (Speech)** Ratio per 1000 word	**BAWE (Writing)** Ratio per 1000 word
1st person pronouns:	44 (f=2637)	13.5 (f=16770)	1.5 (f=13322)
I, me, mine, myself			
We, us, our, ours, ourselves	9.5 (f=565)	12 (f=15402)	2 (f=15270)
2nd person pronouns:			
You, your, yours, yourself	13.5 (f=812)	21.5 (f=27114)	0.6 (f=4963)
3rd person pronouns:			
He, him, his, himself	2 (f=131)	4 (f=5379)	3 (f=26960)
She, her, hers, herself	1.5 (f=97)	0.8 (f=1017)	0.8 (f=6612)
It, its, itself	12 (f=731)	18 (f=22142)	8 (f=65061)
They, them, their, theirs, themselves	10 (f=610)	11 (f=13369)	5.5 (f=46568)

Figure 7.2: Pronoun Use in our Online Discourse Corpus, *BAWE* (Writing) and *BASE* (Speech)



As stated earlier, the increased use of *1st person singular* pronouns(standard frequency ratio: 44:1000 compared to 13.5:1000 in BASE and 1.5:1000 in BAWE)may signal students' level of self-reference in the discussions and their way of establishing

relationships with the audience (*see* Chapter 4, Section 5.3.5.2). 2nd person pronouns were the second most used pronouns (standard frequency ratio: 13.5:1000 compared to 21.5:1000 in BASE and 0.6:1000 in BAWE) indicates that students had a high sense of social presence and of their addressees. Also, *it* (standard frequency ratio: 12:1000 compared to 18:1000 in BASE and 8:1000 in BAWE)was mostly used to refer to a previous antecedent or to show prominence, distance, and information focus.

In sum, the frequent use of these pronouns seems to suggest a resemblance of the discourse to speech. This finding supports findings of other studies (Davis & Brewer, 1997) but contradicts those of Yates' (1996), who compared his online *CoSy* corpus with *LOB* written corpus and *London-Lund* spoken corpus and found that the use of pronouns in *CoSy* (64%) was closer to writing (58%) than speech (27%).

Our students' extensive use of pronouns may indicate their understanding and acknowledgement of their presence and the social roles they played as addresser (using *I*) and addressee (using *you* and *we*) in addition to the shared context (using *it*) as discussed earlier (*see* Chapter 5, Section 5.3.5.2).

In addition to the use of personal pronouns, the extensive use of deictic pronouns with locative reference (Biber, 1988) such as *this*, *that* and *here* in the corpus (n=750 occurrences with standard frequency ratio of 12:1000) signals again students' awareness and appreciation of their social presence discussed earlier in Chapter Five. It may also indicate the importance students gave to their addressee's attentiveness to "what, where and to whom an utterance refers" (Moore, 2009: 1).

2. Increased Use of Verb Phrases

The dominance of verb phrases (VPs) over noun phrases (NPs) is reported to be a property of speech in both L1 and L2 (Biber, 1988; Carter & McCarthy, 2006).

The corpus contained a relatively high frequency level of speech-like verb phrases (Biber *et al.*,1999): personal pronoun + lexical VPs (e.g. *I don't know what/I know I, You shouldn't, He's such, It's really, I don't know why, I*

thought that was), pronoun/NP (+auxiliary) + copula *be* (+ complement clause/NP subject predictive) phrases (e.g. *It was in the, It used to be, That's a good idea*) and VPs with active verbs (e.g. *Have a look at, Get rid of, See if you can, Go to the*). Table 7.5 below illustrates the frequencies of these phrases in the corpus.

Table 7.5: Frequencies of Verb Phrases in the Corpus

Verb Phrases	**Frequency**	**%**
1. Personal Pronouns + lexical VP	446	25%
2. Pronoun/NP + be+	1294	73%
3. VP + active verb	29	2%

The table shows structures with pronoun/noun phrase + copula *be* clause fragments were the most frequent structures (=73%). The use of personal pronouns followed by noun phrases with introductory verbs such as *think, mean, want* and *feel* was also very frequent (25%). These verbs were the most frequently used verbs in other studies (Biber, 1988; Davis & Brewer, 1997; Herring, 1996b). The use of these introductory or "private" verbs (Biber, 1988) reflects more verbal than nominal styles and signifies one's expression of private emotions and attitudes. These verbs are "verbs of cognition" often used to refer to cognitive activities (Biber, 1988: 242) and serve as "a politeness strategy and an invitation to other participants to show their own perception" (Davis & Brewer, 1997: 108). According to Biber, a text that increasingly uses these private verbs shows a dimension of a more involved rather than informational construction of text. The fact that our students frequently used these expressions gives evidence to their social involvement and to the resemblance between their exchanged discourse and spoken language.

3. *Use of Short Exclamatory* and *Elliptical Phrases*

Another quality of speech is use of smaller units such as single exclamatory words or short elliptical phrases (Abdulla, 1998; Carter & McCarthy, 2006). The frequent use of these exclamatory structures often indicates the speakers' "'emotionality' or 'excitability'" (Hiatt, 1977: 37).

Firstly, scrutinising the data revealed that there were numerous occurrences of short exclamations (n=65) found in the online discourse, as demonstrated below:

- Amazing hah.!
- =D Nice program !
- hehehe WEIRD!!
- How breath-taking MONA!!
- Very logical ideas!
- Not really childish but full of life!
- Nothing like victory at the end ..!
- Very remarkable stories you've shared with us here!
- Hehehe cool dreams Fatima!

The examples above also mark the use of clausal elliptic exclamations and phrases. Ellipsis involves deliberately omitting elements and is often used when the speaker and the listener intend to communicate economically, so words and phrases are cut off without affecting meaning (Baron, 2005; Carter and McCarthy, 2006; Collot & Belmore, 1996). Students in the above examples used part of sentences as elliptic exclamations to replace full sentences for the sake of being economical or friendlier using a speech-like feature (e.g. instead of saying *I agree with you* a student used removed the subject pronoun and wrote: *Agree with you!*). Raclaw (2006) argues that the use of ellipsis in online communication is used as a discourse marker to substitute for punctuation or missing lexical items or to mark the user's choice of register and style.

d. Style Shift

Perhaps one of the key properties of speech found in our corpus is accommodation to each other's writing styles. It was observed during content analysis that students accommodated to their classmates' writing styles. Such style shift is connected to Giles and Powesland's (1975) *Interpersonal Accommodation Theory* in spoken discourse, which argues that people modify their speaking styles at the level of lexical choices and syntactic structures to the interlocutors' styles. Giles, Coupland and Coupland (1991) confine the term *accommodation* to a person's reciprocal and dynamic association or disassociation from a partner in a face-to-face conversation. However, Davis and Brewer (1997) use the term *emulation* to refer to how their students accommodated to their partners' styles especially in the use of rhetorical questions, direct and indirect address, and titling. They attribute this behaviour to students' desire to "align

themselves with or disaffiliate from the responses in writing of other student writer ...by combining their idiolectal preferences with emulation of syntactic and discourse patterns presented by other writers" (pp.30-31) in a social context.

However, contact is an important element of this linguistic accommodation behaviour. In Davis and Brewer's (1997) study, "students were in contact with each other through language and the creation of text; texts to and from each other were the students' primary reward ...They accommodated each other as they accommodated to each other" (p.33).Crystal (2001) argues that these accommodated styles in asynchronous discussions gradually "develop a shared linguistic character – the equivalent of a local dialect or accent" that has its own syntactic and lexical structure. This might be on account of the competitive nature of these discussions in which students may attempt to "'one up' each other, perhaps by taking one writer's pun and coining others on analogy, as in face-to-face examples of 'ping-pong punning'" (p.147). The formation of a language variety or dialect in online discussion will be discussed shortly in the following section.

Evidence of peer influence on students' writing styles or lexical choices was found in students' interactions. Some students' decisions to use greetings, closing, direct address, and nicknames were found to have influenced a number of following contributions. For example, a high achiever like Fatima J. copied another student, Sawsan, who used salutation, closings and initials at the end of her posts and continued doing that until she realised that it was not necessary since using the discussion board provided enough information on the sender and the recipient(s). In the interview, Fatima J. mentioned that "*When Sawsan used the expression "with regards" I said "Oh, we can use it" and then started doing that later. "*

Ext.7.5:

Message no. 71[Branch from no. 57]
Posted by SAWSAN on Thursday, October 2, 2008 8:15am
Subject: Re: Speak your mind

Hello Zahra,
Although it is too expensive to pay a visit to the United States, I hope you could overcome your obstacles and be there some say in the future.

With regards ,
Sawsan

Ext.7.6:

Message no. 106[Branch from no. 96]
Posted by FATEMA J. on Tuesday, October 14, 2008 5:28am
Subject: Re: Speak your mind

Hi Zahra,,
True people tend to find it much easier and appealing that newspapers are available online.
I have a few comments about your entry that I hope will be useful =),,,
U used so in your article and then inserted a comma " , " it should be before so or without a comma ..
Another thing is, in the ending "All in all" should be followed by a comma because it is a linking word that needs to be followed by one.
Finally, the Internet has no plural as far as I know so it is better to say the internet is such and such =)
Hope you find my comment handy =D

Regards,
FJ

Ext.7.7:

Message no. 73[Branch from no. 61]
Posted by FADHEELA on Thursday, October 2, 2008 8:51am
Subject: Re: Where to travel to?

Hi Amina,
Spain is a wonderful place that worth visitng but don't you think the weather is too hot there just like in Bahrain?
Good luck,
Fadheela

It was also noticed that a single spelling error produced a chain of misspelled words in succeeding responses. In the following extract from a thread, a misspelled *Andalucía* was subsequently used by a number of other students.

Ext.7.8:

Message no. 78
Posted by MARWA on Tuesday, October 1st, 2008 10:55pm
Subject: andalouse is my dream

Al-Andalouse is one of most beautiful countries in the world . And I wish to visit it because I want to remember all our late history when we were lords of the earth,when we flew in the sky of the knowledge , when we left ourselves in the center of islam , breathing it's fragrance ...

Ext.7.9:

Message no. 84[Branch from no. 78]
Posted by FATEMA A.J. on Thursday, October 2, 2008 5:52pm
Subject: Re: andalouse is my dream

Andalouse is very nice choice and every Arabian should visit it in order to remember our glories and follow it which is something that we need it hardly nowadays...

Ext.7.10:

Message no. 105[Branch from no. 78]
Posted by ISRA on Sunday, October 5, 2008 10:23am
Subject: Re: andalouse is my dream

We all proud about our success in Europe in the past, and all the historical structure is a witness for the Islamic culture and religious being in ***andalouse***.

More illustration on students' style shift from questionnaires and interviews' responses have already been provided in Chapter Six when discussing students' perceptions of using the discussion board.

e. Code-Switching and Code-Mixing

Another feature of speech that teacher interviewees dreaded its negative influence on students' writing (*see* 6.2) is students' use of code-switching and/or code-mixing in online settings. Although these two terms are sometimes used interchangeably, there is a distinction between them. Ritchie and Bhatia (2006) state that code-switching refers to *inter-sentential switching* "in the use of various linguistic units (words, phrases, clauses, and sentences) between two participating grammatical systems across sentence boundaries," as in: *I love you and* ϑϦ̈ *L*ɟ*c*ʏ̈*ŭ [miss you a lot]*. On the other hand, code-mixing means the unconscious *intra-sentential* mixing of "various linguistic units (morphemes, words, modifiers, phrases, clauses, and sentences) between two participating grammatical systems within a sentence," as in: *I wanted to come to your* بيت *[house]*.

Although the interplay between students' L1, Arabic, and English was not significantly represented in the corpus, I believe it signified a phenomenon worth-mentioning as students used Romanised Arabic when they code-mixed or code-switched. To better understand this phenomenon, it is necessary first to provide some background

information about Arabic. It is a Semitic language like Hebrew, consisting of 28 letters that correspond with their sounds. Language use of Arabic in the Arabian Gulf, however, is a case of '*diglossia*' (Ferguson, 1972), which Crystal (1997) defines as "a situation where two different varieties of a language co-occur throughout a speech community, each with distinct range of social function" (p.116). Warschauer, El Said and Zohry (2007) define *diglossia* more specifically as "a situation in which one dialect or language is used in formal or written realms and a second dialect or language is used in informal or spoken realms" (p.304). In the Gulf region, Modern Standard Arabic (MSA) is used in formal settings such as TV news, newspapers, and official documents while vernacular Gulf Arabic is used in informal settings such as conversations, TV series and songs.

However, users in text messaging (SMS) and online communication such as IM, chat rooms, discussion boards, and emails type Gulf Arabic using Roman letters to replace Arabic sounds that have no Roman equivalents such as /ʕ/ in Ali, and /ħ/ in Mohammad. These sounds are phonologically simulated using numerals (sometimes preceeded by an apostrophe) resulting in what is known as *Romanised Arabic* (RA) (*see*the illustration I provide in Table 7.6 below). Likewise, Arabic vowels are represented in online communicative settings using a number of Romanised letters, as shown in Figure 7.3 below. Romanised Arabic is currently used in advertisements, commercial names of shops and website addresses such as *3arabtv.com*, *a9eel.com* and *6arab.com*. Warschauer *et al.* (2007) found similar instances of Romanised Egyptian Arabic in their analysis of exchanged emails. Danet and Herring (2007) use the phrase 'ad hoc improvisation' to refer to this use of Roman letters to communicate in online settings. Although L2 practitioners and linguists consider the use of Romanised Arabic a linguistic ruin, many studies have shown it to be a unique hybrid register (Lee, 2002; Tagliamonte & Denis, 2008).

Table 7.6: List of the Consonant Representation used in Online Romanised Arabic

Arabic MSA Consonants	IPA Sound	Example	Romanised Spelling	Romanised Arabic Representation	Romanised Arabic Spelling in CMC
ص	/s'/ emphatic voiceless alveolar fricative	صيف /s'aɪf/	**S**aif (summer)	9	9aif
ض	/d'/ emphatic voiced alveolar plosive	ضرب /d'æræbæ/	**Dh**araba (hit)	´9	´9araba
ط	/t'/ emphatic voiceless dental plosive	طرب /t'æræ**b**/	**T**arab (glee)	6	6arab
ظ	/ð'/ emphatic voiced alveolar fricative	ظرف /ð'ærf/	**Dh**arf (envelope/ situation)	‘6	‘6arf
ع	/ ʕ/ voiced pharyngeal fricative	علي / ʕæli:/	**A**li (name)	3	3li
غ	/ɣ/ voiced velar fricative (French R or guttural R)	غالي /ɣa:li/	**Gh**ali (precious)	‘3	‘3ali
ح	/ħ/ voiceless pharyngeal fricative	محمد /mʊ:hæmæd/	Mo**h**ammad (name)	7	Mo7ammad
خ	/ x/ voiceless velar fricative as in German "*nacht*"	خالد /xɑ:lid/	**Kh**alid (name)	‘7 or 5 (5 is derived from first sound of the Arabic word for number five: khamsa /xamsa/	‘7alid or 5alid
ء	/ʔ/ glottal plosive	ماء /ma:ʔ/	Ma**’a** (water)	2	Maa2
ق	/q/ voiced uvular plosive	قسم /qæsæm/	**Q**asam (oath)	8	8asam

Figure 7.3: Palfreyman and Al Khalil's (2007) List of Arabic Vowels Representation

Sound	Most frequently represented as:	Less frequently represented as:	Occasionally represented as:
</a/>	– e.g. hala (= hello)	—	—
/a:/ (long /a/)	<a> - e.g. <kaif al7al?> (= How is it going?)	<aa> - e.g. <7elwah hay el aflaam?> (= are these films good?)	—
/?/	<e> - e.g. <kent malaaaaanaaaah> (= I was booooooored)	<i> - e.g. <ana kint achoof Angel> (= I was watching *Angel*)	<o>, <u>, <a> - e.g <noba narged> (= I want to sleep)
/ei/ <ai> - e.g. <enzain> (= all right)	<ei> - e.g. <nseit> (=I forgot)	<ee> - e.g. < el7eer> (=goodness)	
/i/	<i> - e.g. <almohim> (= the important thing)	<y> - e.g. enty (=you)	<ee> - e.g. < fee bali> (=onmy mind), <e> - e.g. <fe i qanah?>
/i:/	<ee> - e.g. tadreeb (=drill, exercise)	—	<i>, <e> - e.g. <iman> (= girl's name), <el moderah> (= headmistress)
/u/	<u> - e.g. <shukran> (= thanks)	<o> - e.g. <sho ishtraiti?> (= What did you buy?)	—
/u:/	<oo> - e.g. <kent ashoof> (= I was watching)	—	<ou> - e.g. <you9al> (=delivered, done)
/o/	<o> - e.g. <w 3laikom essalam> (= and peace upon you)	<u> - e.g. <wa 3alaikum essalam> (=and peace upon you)	—
/o:/	<o> - e.g. <a7ar yom> (= last day)	<oo> - e.g. <el yoom> (= today)	<ou> - e.g. <youm> (= day)

The corpus contained a relatively small amount of mostly code-mixing and sometimes code-switching cases using either Arabic letters or Romanised Arabic. The following extract from the discussions is a case of *intra-sentential switching* to Arabic using Arabic letters:

Ext.7.10:

Message no. 176[Branch from no. 174]
Posted by AMINA S. on Sunday, November 23, 2008 4:59pm
Subject: Re: Will you get employed?

hi fatema>>>you got soo excited
I really meant what I said….we have no control on our future and we do not know what is hidden for us…..i do my best right now in focusing on my studies and I leave the rest on god, as we say in arabic خلي الباقي على الله *[leave the rest to Allah].*

The following examplesfrom the corpus, however, show *intra-sentential switching* to Arabic using Romanised Arabic. It can be noted that these were mostly cases of passing prayers and supportive sympathetic phrases to peers. It is possible that that these phrases were used because students felt that they were more appropriate to use than the English phrases especially when offering support or sympathy:

- *2esmilla 3laich* [May God protect you]!
- *5aleha 3ala Allah* [Rely on Allah] and *inshalla* [God willing] you'll be ok! *2ntaynag9aem7atah*! [You (female pronoun) have enough things to worry about!]
- Just *towakele 3alaAllah* [count on God] in your steps and be strong.
- Oh you have become famous. *Testahleen* [You deserve it].
- *Shitsaween*!! [What can you do?!!] You have to work hard *3ashan* [so that] you enjoy your weekend! We can meet later at 5 and go for lunch *aw* [or] coffee for a change.
- *Ma9adig*! [I can't believe it]. I don't know why *e9eedichhaloon* [things like this happen to you]!
- *Ma9adig* [I can't believe it]! *Allah e3eenich* [May God help you]!
- *Ashwa* [Better]! Glad you passed the exam with a good mark.

It was also observed that students code-mixed when inserting certain grammatical items as alternatives to the English ones possibly because they are shorter and more economical or to make the discussion more informal and social. Students in Palfreyman and Al Khalil's (2007) study mentioned that RA makes words sound more Arabic and hence, more authentic. The code-mixed grammatical items in our corpus included:

a. Arabic prepositions (e.g. *min*=from/since, *3ala*=on, *le*=until, *fee*=in),
b. pronouns (e.g. *2entay*=[female] you, *2entow*= plural you, *ina*=that),
c. conjunctions (e.g. *fa*=so, *3ashan*= so that, *le2ana*=because, *bas*=but, *ba3ad*=also), and
d. certain adjectives and adverbs (e.g. *9ij*=really, *min a7een*=already, *7ada*=very/totally, *3ady*=normal, *zain*=good, *5afeef*=little, mesakeen=poor, *3ad*=then, *2a7een*=now, *bacher*=tomorrow, *itha*=if, *killish*=totally, *akeed*=definitely, *a5eeran*=finally), as shown in the transcripts' extracts below:

- It feels good *min a7een* [already]!
- Take some medicine *itha* [if] you don't feel better!
- That site *fee* [there are] also good exercises. I took it *min* [from] the doctor.
- I did! *fee* [there is] in Manama *bas* [but] I'm having second thoughts. I'm not sure and I need to start studying *ba3ad* [too].
- I think you have done your best to study without the old notes *bas* [but] *mafee* [there is no] *fayda* [use]!
- We should study hard *le* [until] we graduate!
- I carried them up *le2ana* [because] the lifts were not working!
- Believe me! *9ij* [really] *kan* [there was] no one there!
- *Masakeen* [poor] women before! They couldn't work or study.
- Done!! *A5eeran* [Finally]! Is everyone convinced with what we say here?
- *3ady* [No worries/Normal]... anytime! *2entay* [you (female pronoun) are] my raw model!

In the following examples, students replaced the definite article 'the' with its Gulf Arabic equivalent /ال/ using the corresponding Roman letters '*el*' as a prefix attached to

English nouns and not as a separate morpheme as expected. This is because the Arabic definite article is always a prefix.

- *Kilish* [Totally] *el*headache [the + headache] was *5afeef* [little]! I just need to check in case *fee* [there is] any reaction.
- Yeah *el*guys [the guys] helped me understand *el*exercise [the exercise].
- No *akeed* [definitely] the fight is between *el* [the]media types!

It is noteworthy that all code-mixing instances appeared in the responses and follow-ups. There are a number of speculations that could have possibly influenced students' choice to code-mix and code-switch using Romanised Arabic. First of all, it is possible that students wanted to make these responses more speech-like and more social and friendly by inserting Arabic words every now and then. It could also signify that students understood "the structure of their own language" and were familiar with the writing system of their L1 and L2 (Palfreyman & Al Khalil, 2007: 46). It is possible that learners were being consciously playful in using the target language efficiently to communicate in both codes. Also, student interviewees mentioned that it is often easier for them to type the Arabic words in English because the keyboard layout is in English and because Arabic script lacks technical support.

It is also possible that the use of Romanised Arabic is a societal reaction to the dominance of English as a lingua franca in cyberspace (Crystal, 2001). Warschauer *et al.* (2007) propose that this could have caused a sociological conflict between users' 'local identities' and 'globalisation'. Hence, Romanised Arabic could have emerged because Arab users felt that their ethnic solidarity and social identity were threatened by the global networks in which English is the most prevailing language, and therefore created an online register that combines English and Arabic. By doing so, they preserve their mutual identities with other Arabs regardless of the orthographic system used. It is thus possible that the use of RA in the discussions was a reflection of students' sense of social presence and multi-dimensional persona (Myers-Scotton, 2006) (*see* 5.3.5). Some of our students also mentioned that they felt that the use of RA was something unique to their young generation and community. In other words, students combined codes to mark a unique identity. Likewise, the majority of Palfreyman and Al Khalil's (2007) students explained that they preferred using RA because of its "social connotation" (p.59).

In conclusion, it seems that students code-switched/mixed using RA to show their linguistic knowledge of the writing system of L1 and L2, to claim group prestige and social presence. However and as stated earlier, there occurrence of code-switched/mixed sentences in the corpus was relatively minimal.

In summary, it has been observed that the online discourse has some basic similarities to spoken discourse such as the increased use of simple grammatical structures (pronouns, verb phrases), clausal combination, speech markers, and exclamatory and elliptical structures in addition to style shift and code switching/mixing. These findings might imply that the online discussions were more similar to speech. However, this assumption needs to be checked by analysing occurrences of writing-like features in the online discourse in the following section.

7.2.2. Analysis of Writing-Like Features in the Online Discourse

The following features have been identified by researchers as being typical of standard writing (Biber, 1988; Carter & McCarthy, 2006; Crystal, 2001; Halliday, 1978), and have therefore been investigated for occurrences in our corpus:

a) Textual metadiscourse markers
b) Academic hedging
c) Complex grammatical structures
d) Lexical variation

Examples of each feature are given in the sections below. Other features such as nominalisation and use of affixes to show lexical complexity were disregarded because there were not frequent at all in the corpus.

a) Textual Metadiscourse Markers

Metadiscourse markers are often associated with writing and are divided into textual and interpersonal metadiscourse markers. Textual metadiscourse markers such as text markers and interpretive markers are "used for logical and ethical appeals" while interpersonal metadiscourse markers such as hedges, modals and certainty markers are

"used for emotional and ethical appeals" (Crismore, Markkanen & Steffensen, 1993: 47). Text markers "help readers recognize how texts are organised, and how different parts of the text are connected to each other functionally or semantically" (Hyland, 2005: 32, quoting Vande Kopple's (1985) classification system for metadiscourse). On the other hand, interpretive markers include code glosses which "help readers grasp the writer's intended meaning" (Hyland, 2005: 32) (e.g. *such as, for example, or, what you are saying is, my point is, to be clear*), speech act markers (e.g. *I hope, I wish, I suggest, I am sorry, I thank,*) and announcements (e.g. *My next point is, I also want to add another point*).

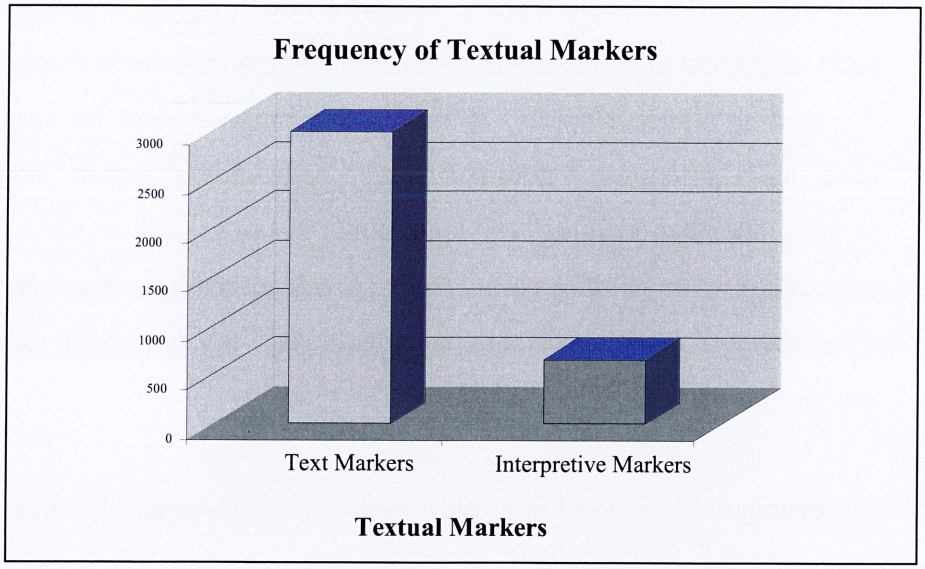
According to Shaw and Liu (1998), writing is characterised by the use of explicit textual metadiscourse markers such as sequencers (e.g. *first, firstly, second, secondly, next, before, after*), reminders (e.g. *as I mentioned, as you said*), topicalisers (e.g. *as for, about, to talk about, as far as*) and logical connectives (e.g. *in addition, moreover, furthermore, and, besides, also, therefore, so, because, although, nevertheless*). Textual metadiscourse markers are therefore a focus of our investigation. Table 7.7 and Figure 7.4 below provide the frequency of all the textual metadiscourse markers in our corpus.

Table 7.7: Frequencies of Textual Metadiscourse Markers in the Corpus

Textual Metadiscourse Markers	**Types**	**Frequency**
A. Text Markers	*Sequencers*	151
	Reminders	30
	Topicalisers	11
	logical connectives	2799
TOTAL		**2991**
B. Interpretive Markers	*Code glosses*	303
	Speech act Markers	352
	Announcements	6
TOTAL		**661**

As the table above shows, analysis of the discussions revealed that there were 2991 (standard frequency ratio: 46:1000) instances of text markers in the corpus, 93% of which were logical connectives, and only 661 instances of interpretive markers (standard frequency ratio: 10:1000). Figure 7.4 below shows the difference between the use of text markers and interpretive markers.

Figure 7.4: Use of Textual Markers in the Online Discourse



Students seem to be careful when composing online messages and used text markers explicitly to establish some cohesion in their contributions. The high frequency of text markers could also be attributed to the teaching practices which often encourage L2 students to use markers to produce coherent and cohesive pieces of writing.

b) ***Academic Hedging***

Academic hedging, which is often used to protect "the writer's position" and build "writer-reader relations" (Hyland, 1994: 241) is another property of writing marked by the use of introductory verbs (e.g. *seem* and *appear*) (Biber, 1988; Quirk, Greenbaum, Leech & Svartvik, 1985), adverbs of frequency, and modal adverbs (e.g. *possibly* and *perhaps*). As Table 7.8 below shows, students used hedging quite frequently (with standard frequency ratio=12:1000). Modal verbs and introductory verbs were more frequently used by students than other academic hedging techniques.

The ratio of introductory verbs seems even much higher in our corpus than in BAWE. This could be attributed to the influence of style shift to peers' writing choices, as the content analysis of the transcripts revealed that weak students copied advanced students' use of hedging to make their writings more academic.

Table 7.8: Frequency of Academic Hedging Types

Types of Academic Hedging	Online Discourse Corpus Ratio per 1000 word	BAWE Corpus Ratio per 1000 word
1. introductory verbs: *seem, think, believe*	3.1	1.1
2. certain lexical verbs: *assume, suggest*	0.8	0.8
3. certain modal verbs: *will, must, should, have to*	6	4
4. adverbs of frequency: *often, sometimes, usually, always*	1.0	0.8
5. modal adverbs: *certainly, definitely, clearly, possibly, perhaps*	0.4	0.5
6. modal nouns: *certain, definite, clear, possible*	0.2	0.8
TOTAL	11.5	8.0

It was noted these were more frequent in the initial postings (62% of all the introductory verbs) than in the responses. The high frequency of the use of academic hedging in the discussions signifies that the online discourse exhibited another writing-like feature. Likewise, Yates (1995) observed that the use of modality in *CoSy* online discussion corpus was higher than the ones in *LOB* writing corpus and *London-Lund* speech corpus.

c) ***Complex Grammatical Structures***

Increased structural and informational complexity (*i.e.* use of subordination, increased use of noun, prepositional and adverbial phrases, complement clauses *(that*-clauses, *to*-clauses and *of-ing* clauses), participles and passive voice) is a recognized quality of written language (Biber, 1988; Biber *et al.*, 1999; Chafe, 1982; Collot & Belmore, 1996; Crystal, 2001; Gillett, 2009; Herring, 2007; Hyland, 2002; Schafer, 1981). The frequency of these features was calculated using *Wordsmith Tools* (*see* Appendix J), as shown in Table 7.9 below.

Table 7.9: Frequencies of Complex Structures in our Corpus

Written Complexity Features	Examples	Frequency (ALL)	Ratio per 1000 Word	% (Initial Postings)	% (Responses)
Subordinate clauses/embedded subordinate clauses	*which, that, after, when, since, as, whenever, while, until, since, because, if, although, unless, who, which, that, whose, whereas, as*	692	*	39%	61%
Complement clauses	*that*-clauses: *I believe that*	341	*	51%	49%
	to-clauses:	905	*	52%	48%
	of+ing-clauses:	68	*	71%	29%
Participles	*-ed*:	824	13.7	70%	30%
	-ing	1154	19.2	70%	30%
Passive verbs		232	3.8	49%	51%
Academic Hedging		1180	19.6	56%	44%

*Cannot be calculated per word because they are clauses

These structures are often used in writing to perform certain functions. First of all, the use of subordinate clauses or embedded subordinate clauses marks the user's mastery over the production of complex structures (Gillett, 2009). As Table 7.9 indicates, there was a frequent use of subordinate clauses in the corpus, notably during the second half of the semester. There was a high frequency level particularly in the use of subordinate clauses with *which* and *that*, a finding corresponding with that of Sotillo (2000) in his analysis of synchronous discussions.

Another property of written language is the increased use of complement clauses such as *to*-clauses, *of+ing*-clauses and *that*-clauses. The use of *to*-clauses as complements constituted almost 77% of the overall complement clauses mostly used in the initial postings (66%). 23% of these complement clauses were *that*-clauses, distributed equally between the initial postings and responses. More than 70% (n=68) of the *of-ing*-clauses were used in the initial postings although they were not very frequent.

Another writing-like feature found was the increased use of *that*-clause fragments preceded by verb phrases (e.g. *it does not mean that, I believe that*) or the use of "those comprising only the *that*-clause" (e.g. **that there is a, that it is not*) (Biber *et al.*, 1999: 1021). This structure was, by and large, very frequently used by the students as there were almost 400 occurrences of *that*-clause fragments in the corpus and *that* formed a high percentage of the words in the wordlist (1.08%). This suggests that students used relatively complex structures in their online discussions. The use of participles was also relatively high as there were more than 2000 instances of *–ed* and *–ing* participles (standard frequency ratio=31:1000, 70% of which occurred in the initial postings).

Another characteristic of writing is the increased use of noun phrases, prepositional phrases and adverbial phrases because writing is often more packed with information than speech (Biber *et al.,* 1999; Halliday, 1989; Scott & Tribble, 1996). Analysis of the corpus revealed a frequent use of these phrases. Among the most frequent noun phrases students used were those associated with *of*-complements (n=753) (e.g. *part of the, one of the most, the nature of the, etc.*). Less frequent, though, were prepositional clauses with embedded *of*-phrase fragments (n=58) listed by Biber *et al.* (1999) (e.g. *as a result of, at the beginning of, in the case of, for the right of, in a state of, etc.*). Other noun phrases such as phrases with post-modifier clause fragments (e.g. *the fact that*) and prepositional phrase fragments (e.g. *an important role in*) were also used in the discussions.

These findings suggest that students also used relatively complex structures, which might be considered to be more typical of written discourse.

d) Lexical Variation

Lexical variation is another feature that distinguishes speech and writing. In general, written discourse tends to use more nouns than verbs and hence, has a higher lexical variation than speech (Biber *et al.*, 1999; Ure, 1971). Halliday (1989; 1996) explains that when the discourse is factually-oriented, it is similar to writing while if it is more interactive it is more likely to be spoken. Chafe and Danielewicz (1987: 88) attribute this to the fact that:

> 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.

One common measure of lexical variation is the type/token ratio (TTR) which divides the number of different words by the number of total words. Low type/token ratios are generally more characteristic of spoken language while high ratios are more typical of written language (Yates, 1996). However, the use of type-token ratio has been criticised for being sensitive to text size or length and thus, a more reliable measure would be the use of standardised type-token ratio (STTR) which is computed for every 1,000 running words of the corpus. Thus, the computed average type/token ratio is based on the averages of successive 1,000-word chunks of data.

As shown in Table 7.10 below, the standardised type-token ratio STTR in the data was not high (32%) and students did not use a wide range of vocabulary, which suggests that their output was repetitive and more similar to speech.

Table 7.10: Standardised Type/Token Ratio of our Corpus

Lexical Variation	Ratio	Initial Postings	Responses
STTR	32.26	34.36	29.43
STTR Std.Dev.	67.36	63.09	66.39

To better understand these findings, I compared them with those of Yates (1993), who found that the type/token ratio for his *CoSy* corpus was 59%, compared to 63% in the *LOB* writing corpus and almost 40% in the *London-Lund* speech corpus. Hence, the type-token ratio of our corpus makes the discourse more akin to the speech corpus. It is, however, possible that the low STTR was due to the low lexical competence of L2 students and not to their tendency to use spoken features. Unfortunately, comparable L2 corpora for Arabic speakers were not found to draw comparisons and understand our findings better.

In sum, it can be concluded that although the online discourse did not show high lexical variation, it contained some complex syntactic structures such as subordination and complement clauses as well as increased use of academic hedging techniques and metadiscourse markers, all of which are more typical of written discourse. However, findings also revealed many similarities between the online discourse and other spoken structures such as increased use of discourse markers, pronouns and verb phrases, clausal combination, exclamatory and elliptical phrases, style shift, and relatively code-switching/mixing. That said, I also found that these structures were used differently by students based on a number of different variables (i.e. types of contributions, academic level and time of contribution). A more detailed description of what structures were used depending on these variables is provided in the following section.

7.3. FACTORS INFLUENCING THE WRITTEN OR SPOKEN QUALITIES OF ONLINE DISCOURSE

Analysis of the transcripts suggested that the degree to which the discourse exchanged in the discussions was more akin to speech or writing was influenced by a number of factors. First of all, some significant difference was found between students' initial postings and responses, as shown in Tables 7.11 and 7.12 below.

Table 7.11: Distribution of Spoken Features between Initial Postings and Responses

Features of Spoken Language	Initial Postings	Responses
Discourse markers	23 (36%)	41 (64%)
More use of pronouns	1097 (52%)	1012 (48%)
More first person reference	1723 (63%)	1023 (37%)
Use of deictic pronouns	275 (37%)	475 (63%)
Direct address	6 (4%)	157 (96%)
Simple grammatical structures	3519 (67%)	1727 (33%)

Table 7.12: Distribution of Written Features between Initial Postings and Responses

Features of Written Language	Initial Postings	Responses
Use of (embedded) subordinate clauses	272 (39%)	420 (61%)
Complement clauses:		
1. *that*-clauses	172 (51%)	169 (49%)
2.*to*-clauses	473 (52%)	432 (48%)
3.*of*+*ing*-clauses	48 (71%)	20 (29%)
Participles: *-ed* participle	572 (70%)	252 (30%)
***-ing* participle**	812 (70%)	342 (30%)
Passive verbs	104 (49%)	128 (51%)
Academic Hedging	659 (56%)	521 (44%)

It seems that students used more writing-features in their initial postings while their responses were more comparable to speech. While initial postings contained more frequent use of complex written structures (*see* Section 7.2.2.c), responses contained a higher frequency of interjections, fillers, punctuations marks to express emotions, contracted forms, and direct addresses to the speakers.

Another writing–like property was found in the lengthy contributions in the initial postings with an average number of words of 3,608 per student, while the responses were relatively short with an average of 2,000 words per student. Crystal (2001) attributes this to students' desire to articulate their viewpoints clearly and thoroughly to impress their peers and instructors in their initial postings while their main goal behind their responses was to be social and interactive.

It was also noticed that the ratio of lexical variation was slightly higher in the initial postings (34%) than in the responses (29%) (*see* Table 7.10 above). Crystal (2001) argues that the ratio of lexical variation in asynchronous discussions varies according to the purpose of their use. He posits that when these discussions are more academic, they are more likely to be factual and hence more writing-like, while they are more akin to speech if they are social in nature. Davis and Brewer (1997) support this claim and associate it with Biber's (1988: 43) concept of *integration,* which he defines as "the way a large amount of information is packed into relatively few words." Davis and Brewer argue that although asynchronous writing is "extemporaneous", its *integration* makes it

more similar to writing (p.5). However, although there was a difference in the lexical variation in our corpus between initial postings and responses, the difference was minimal.

The analysis of these features mentioned, however, is not totally absolute to one type of contribution over another. Responses included features of writing and initial postings also contained properties of speech. For example, more than 60% of all subordinate clauses which are often associated with writing were found in the responses. Conversely, the initial postings contained higher use of some of the characteristics of speech such as first person pronouns (63%), active verbs (70%) and coordinators (64%).

Another possible factor influencing the discourse was students' L2 proficiency levels. It was observed that the high-achievers tended to use less speech-like features in their postings unlike their low-achieving peers who were sometimes writing as if speaking. This is possibly because high achievers found the discussion board a convenient platform to exhibit their linguistic and grammatical competence, while low achievers found it a good venue for interactive social dialogues. The following extracts show a high-achieving student mostly using more standard written English:

Ext.7.11:

Message no. 150[Branch from no. 148]
Posted by FATEMA J. on Thursday, October 30, 2008 10:37am
Subject: Re: What makes you happy?

I also want to add another point related to happiness and myths. A lot of traditional myths state that one shall not attain good luck and happiness if an owl for example is seen or even lands on the tops of his house, he is cursed! This to me is mere superstition and absurdity and I wish that today we realise that not all that is passed to us true in order not to be badly affected by it and that the truth lies in questioning and the search for truth. I am happy as long as I can see rightly and seek such rightfully.

Ext.7.12:

Message no. 262[Branch from no. 249]
Posted by FATEMA J. on Friday, January 2, 2009 1:32am
Subject: Re: What do you think?

I strongly disagree with you Afrah because women are not the negative of life nor are they to compliment men. It is a common saying that women are the whole society, they raise half of it and they are the rest of it, therefore that are society! We do different tasks as assigned to us by nature yet that doesn't mean that we are to be considered unimportant. By nature, we are not weaker but are designed to do different things which makes us important just as men are and not less important by what society has judged us for years.

On the other hand, the excerpts below illustrate how a relatively low-achiever uses speech-like features such as exclamations, short sentences with verb phrases, pronouns and conjunctions throughout the semester. This particular student, *Amina S.*, also had a low average type-token ratio of 50, while the high-achiever *Fatima J.* had an average ratio of 63.

Ext.7.13:

Message no. 215[Branch from no. 210]
Posted by AMINA S. on Sunday, November 26, 2008 12:45pm
Subject: Re: What would you do?

It is very beautiful because of amazing nature around it, dosen't it?
I totally agree with you about growing fortune is better than spending because money is limited and will finish...

Ext.7.14:

Message no. 282[Branch from no. 236]
Posted by AMINA S. on Friday, January 9, 2009 1:31am
Subject: Re: Where have you been to?

Actualy, i do not like to travel alot, because i feel that i be bored after two weeks outside Bahrain.

Another variable affecting the discourse of the contributions is the time of the discussions. Tables 7.13 and 7.14 below show that while more spoken features such as increased 1st-person pronouns and deictic pronouns were used during Week Two of the discussions, more writing-like features such as complement clauses, passive voice and academic hedges were used during Week Ten . It is noteworthy that the online discourse was more similar to speech during the first four weeks of the experiment but gradually evolved into a more writing-like discourse towards the end. I speculate that students first considered the discussions a good environment to communicate with their peers but then started using critical thinking skills to support their viewpoints which eventually made their postings more planned and structured and hence, more akin to written discourse. Other factors could be the influence of peer response and review, planning and editing before submission, and self-monitoring and evaluation (*see* Chapters 5 and 6). It is also possible that low-achieving students started gradually imitating their high-achieving peers in their writing styles until these styles became sustained, as discussed earlier in Section 7.2.1. More discussion was provided in Chapter Five when presenting the possible factors influencing students' participation in the online discussions such as

enhanced interactivity and peer response, gender equality and superiority and reduced communication apprehension.

Table 7.13: Frequency of Spoken Features in Week 2 and Week 10 of the Discussions

Features of Spoken Language	**Week 2**	**Week 10**
Discourse markers	11	2
More use of pronouns	175	223
More first person reference	258	83
Use of deictic pronouns	123	75
Direct address	19	11
TOTAL	**590**	**394**

Table 7.14: Frequency of Written Features in Week 2 and Week 10 of the Discussions

Features of Written Language	**Week 2**	**Week 10**
Use of (embedded) subordinate clauses	40	42
Complement clauses:		
1. *that*-clauses	39	56
2.*to*-clauses	58	111
3.*of*+*ing*-clauses	5	6
Participles: *-ed* participle	27	104
***-ing* participle**	60	95
Passive verbs	4	55
Academic Hedging	52	69
TOTAL	**285**	**538**

The analysis of the lexical variation of Week Two and Week Ten discussions also revealed the type-token ratio of Week Two was 15, while it was 34 in Week Ten. This signifies that the discussions became more lexically varied and hence, more writing-like as the discussions developed towards the end of the semester. This could be attributed to the style shift discussed earlier on students' lexical complexity, which was discussed more thoroughly in Chapter Four. It could also be attributed to students' exposure to significant linguistic input in the online discussions that seem possibly to have enriched students' lexical richness.

In sum, it seems that the online discourse contained features of both written and spoken modes of language and that the frequency of these features may be influenced by some variables such as students' L2 proficiency level, type of contribution, or time of contribution.

7.4. DISCUSSION OF THE RESULTS

A number of conclusions can be drawn about the discourse exchanged in the discussions. First of all, I can argue that the discourse is not a variety of speech for a number of reasons. While speech is typically unplanned in real time (Carter & McCarthy, 2006), asynchronous communication often has the advantage of time-convenience which allows for planning, drafting and drafting. The fact that students contrived, revised, and edited their contributions for spelling mistakes and typing errors made the asynchronously-produced discourse different from speech. During the interviews, students valued the flexibility of reflecting on their contributions and reshaping them to their personal and audience satisfaction, which Hammond (1998) refers to as the 'plasticity' of the medium. The following interview extracts show students' acknowledgement of the advantage of time-convenience in the online discussions:

- *Amina: I realised while writing that I have problems with vocabulary that I didn't care about before. I started caring about them and checking. I didn't care before about the words I chose and I just wrote whatever was in my mind but now I'm checking it by using the dictionary before.*

- *Wafa: I used to write using Ms Word and check my spelling and grammar and then post it.*

- *Fatema A.J.: It helped me to know my weaknesses and most common mistakes in writing because when I write for example, I do that first on Ms Word and then re-read it to find my mistakes and check my vocabulary to ensure it's ok and then post it.*

Another property that distinguishes online discourse from speech is the fact that interactions are much slower in asynchronous settings than in face-to-face conversations. Responses are sometimes posted days or months after a stimulus has been posted. In our study, some students posted their contributions to some of the earliest threads towards the end of the semester for different academic, technological and social reasons. This lag dramatically slows the rhythm of interactions associated

with speech found in face-to-face or telephone conversations and often causes frustration on behalf of the interlocutors especially if the time delay is high (Crystal, 2000). The example below marks a student's frustration due to delayed responses to her comments although her initial post was submitted a day earlier:

Ext.7.15:

Message no. 247[Branch from no. 244]
Posted by FADHEELA on Monday, December 29, 2008 12:07pm
Subject: Re: What do you think?

Where are you guys??

Another difference between speech and online communication is the absence of adjacency-pairs (*see* Section 2.2.2; Davis & Brewer, 1997; Hammond, 1998; Yates, 2001). It was observed that replies to a particular comment appeared after a number of other replies to other comments. They appeared in a linear order depending on the time and sequence in which they were submitted (Crystal, 2001). Non-adjacent turns were visible in the transcripts, as shown in the following extract from a thread on unemployment:

Ext.7.16:

Message no. 242
Posted by SUMAT on Monday, November 17, 2008 4:39pm
Subject: In my case...

In my case, I am sure that I will stay at home after I graduated.
Because I am studying BA in sociology and there is no need for it in Bahrain. They even do not know what its mean or specialized at.
Therefore, I tried to take minor in English to improve my language, to have some skills, and I hope take master from prickly university in united state.
If I could not travel, I will try to work in job that I like to do like, photographer or designer.

Ext.7.17:

Message no. 243[Branch from no. 241]
Posted by FATEMA T. on Tuesday, November 18, 2008 1:31am
Subject: Re: Will you be employed?

Ooh, Very interesting topic.
Nowadays, getting a job became one of the most difficult things, especially for universities students who are supposed to get a job very easily, but the circumstances refuse otherwise.
For me I feel that translation doesn't has a limited kind of work that I can work anywhere, but if I didn't get a job it wouldn't be difficult for me to earn some money just by using my artistic skills. .....

Ext.7.18:

Message no. 244[Branch from no. 242] ***(In reply to the first response by Sumat)***
Posted by EMAN on Tuesday, November 18, 2008 12:49pm
Subject: Re: In my case...
I agree with you Sumat because sociology, history and others subject not need it in Bahrain and there are a lot of people graduated from them . also I think photographer or designer are good chooses. ^_^

Ext.7.19:

Message no. 245[Branch from no. 243] ***(In reply to the second response by Fatima)***
Posted by EMAN on Tuesday, November 18, 2008 12:58pm
Subject: Re: Will you be employed?

It's nice idea Fatima to have your own store but I think it's not Justice after all these years of studying we don't get jobs . do you agree with me ??

Ext.7.20:

Message no. 246[Branch from no. 241]
Posted by ALI on Tuesday, November 18, 2008 2:24pm
Subject: Re: Will you be employed?

I agree with you , getting a job here in Bahrain had become very difficult , and many university graduated have become much more accepting to work in jobs do not suit their qualifications and potentials. But to be fair , some fields are developing fastly , and they are creating good opportunities for the job seekers .

Ext.7.21:

Message no. 249[Branch from no. 243] ***(In reply to the second response by Fatima)***
Posted by ISRA on Wednesday, November 19, 2008 10:10am
Subject: Re: Will you be employed?

It's a nice idea to create your own business to be the headmistress of the work, you decide what suppose to do and make a suitable times to open and end the place.

These overlapped turns and non-sequential adjacency-pairs (e.g. Ext. 7.16 & Ext.7.21; Ext.7.17 & Ext. 7.20) often cause confusion with thematic/topic shifts, so students often use conversational strategies to compensate for this absence. For instance, students in our study used direct address to their peers utilising their name, as shown below, or used anaphoric reference to a particular response.

Ext.7.22:

Message no. 251[Branch from no. 248]
Posted by FATEMA T. on Wednesday, November 19, 2008 7:11pm
Subject: Re: *will never stop working hard until I reach my target...*

Zahra, your major is just like mine and I totally agree with you in all what you said; your plan is almost like mine.
So, keep it up all along.

Another difference between online discourse and speech is the focus, relevance and consistency of the subject-matter in the discussions as compared to face-to-face conversations, which is often characterised by unpredictable topic shifts (Crystal, 2001). I mentioned earlier that almost all the contributions were on-topic with minor departures or deviations.

In summary, the absence of the basic properties of speech such as time-pressure, adjacency pairs, and topic shift suggests that the discourse of the discussions is not a form of spoken communication.

On the other hand, there are a number of other features that distinguish discussion board postings from traditional written language. First of all, interactivity between participating *writers* in asynchronous discussion is absent in traditional writing settings. I showed in Chapter Five that students were highly interactive with an average of 29 participatory posts produced per student over one semester (10 weeks), a figure that cannot easily be obtained in conventional writing classes.

Another characteristic of academic written language not frequent in the online discourse is impersonality, a feature that exhibits the writer's focus on the exchange of information and the statement of arguments rather than on the writer as an individual (Gillett, 2009; Levinson, 1988; Poster, 1990). Impersonality, achieved by avoiding the use of first and second person pronouns, was not found in students' postings as there were high frequencies of personal pronouns (*see* Section 2.3.3). However, it is equally possible that first person pronouns are used in academic writing for purposes such as positioning the writer, guiding the writer and drawing conclusions (Elbow, 1991; Shaw & Liu, 1998). According to Fowler and Kress (1979: 201), the use of personal pronouns can also be confined to certain genres:

> Removal of the pronoun associated with personal speech is felt to be appropriate to the impersonal, generalising tone of newspapers, textbooks, scientific articles.

Another indicator of impersonality is the avoidance of stance phrases such as *I think, I believe,* and *in my opinion.* However, impersonality was not established in the discussions as numerous instances of these phrases and textual metadiscourse markers were found in the corpus, which could be regarded as an overuse of a certain writing features. Over-use and under-use of particular features of written language is highly common in L2 settings as a result of as a result of teaching practices that emphasise form, and is supported by many researchers (Altenberg, 1995; Granger & Petch-Tyson, 1996; Milton & Tsang, 1993; Shaw & Liu, 1998).

In summary, it can be argued that a combination of features of both written and spoken modes of communication was found in the online discourse, as also found in Davis and Brewer's (1997) study. While students used highly complex clausal structures of writing such as subordinate clauses, complement clauses and participles, they also used discourse markers, personal pronouns, style shift and code-switching/mixing more associated with everyday conversations. Also, there were frequent instances of structures that can be equally used in spoken and written language such as *to*-clauses (Biber *et al.*, 1999), of which more than 500 instances were found in our corpus. Thus, the online discourse appears to be a hybrid of both literate and oral language. According to Davis and Brewer (1997), asynchronous discourse is "writing that very often reads as if it were being spoken – that is, as if the sender were writing talking" (p.2).

This discourse can also be a mixture of "spoken monologue and dialogue" (Crystal, 2001: 148). Since monologic interactions mostly resemble writing while dialogic ones resemble speech (Power, 2009), I could argue that students' online contributions were partly monologic -in the initial postings- and partly dialogic -in the responses- and hence, they were a mixture of spoken and written language.

Thus, the online discourse can be placed on a continuum that has writing at one pole and speech at the other pole and online discourse in the middle of it with monologic initial postings closer to writing and dialogic responses and follow-ups closer to speech in the following order: *writing* > *monologic online discourse* > *dialogic online discourse* > *speech.* Online writers move to different position on this continuum depending on their individual, academic and social needs according to the context in which language production takes place.

I could also, however, join Davis and Brewer (1997), Yates (2001) and North (2007) in proposing that online discourse on discussion boards is a distinct register which has its own "norms, and turns, progressive acculturation and enculturation" (Davis & Brewer, 1997: 35) and which can at the same time be more speech-like or writing-like or somewhere in the middle of the continuum depending on the individual needs of the interlocutors. Varied situational factors, participants' needs and community requirements shape asynchronous discourse and place it in different positions on the continuum accordingly. When interlocutors need to be more factual and present their first initial viewpoints, they choose to use writing conventions but when speech acts are required to agree, disagree, thank or persuade, the discoursal mechanisms they employ are more characteristic of speech in the responses. Davis and Brewer (1997: 19) state that:

> Writing in the electronic universe, people adapt conventions of oral and written discourse to their own, individual communication ends, as when they draw on modality or develop interactive strategies.

Yates (2001: 109) also explains that:

> There are styles -genres- of CMC that are themselves between the oral and the literate. In fact these genres are often used by experienced users who have developed their own 'CMC' practices (in contrast to oral and literate practices) and their use is very dependent on social context.

Davis and Brewer (1997) studied online discourse in association with the contexts it occurs in. They explain that "what the individual participants do with language in order to discuss issues and create a community is the basis for understanding the various levels of electronic discourse … The fabric of electronic discourse is language; the weavers of that fabric are the individual participants" (p.8), who Johnstone (1996) calls '*linguistic individuals'*. Hence, it seems appropriate to conclude that the individual needs and the linguistic and social aspects of the users in online settings are the main determinants of the type of discourse exchanged and whether it becomes closer to the literate or oral mode of language.

7.5. CONCLUSION

The findings in this chapter show that the discourse exchanged in the discussion board between the *UoB*'s L2 students varied between being more similar to standard written language or more similar to speech depending on these students' objectives and individual preferences. This finding is expected to rectify the misconceptions the *UoB* teachers have about the nature of the discourse which is claimed by most of them to be erroneous, fragmented, and incoherently similar to speech (*see* Chapter 6). These findings may help these teachers embrace the medium and utilise it effectively. Pedagogical implications drawn from the findings of this chapter and all the previous results chapters and recommendations for practitioners and researchers are discussed in the next chapter.

CHAPTER EIGHT

CONCLUSION

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CONCLUSION

8.1INTRODUCTION

The aim of this study was to investigate the impact of using discussion boards on L2 writing development at the University of Bahrain (*UoB*). Although the use of these and other instructional technologies has recently become popular in the Middle East and more particularly in Bahrain, where e-learning modes and virtual learning platforms are made available, these technologies have not been effectively utilised to improve limitations of L2 writing instruction despite students' demands for less teacher-centred instruction and more student-centred learning processes (*see* Chapter 6). Swain (2000) states that it is common in L2 instruction to find that "the mediating role of dialogue is less well understood" (p.110).

This final chapter examines first how the overall findings of the study could contribute to an effective use of discussion boards followed by a re-statement of the limitations. Then, I present a number of pedagogical and administrative implications and suggest areas for future research.

8.2 SUMMARY OF THE FINDINGS

The following discussion is a summary of the findings in light of the main research questions and sub-questions presented below:

1. *Does the use of the discussion board help to improve students' writing in terms of fluency, accuracy and complexity?*

   Related to this main question, I also investigate the following sub-questions:

   a. *What levels of student participation are found in the discussion board and what variables affect their participation?*
   b. *What are the perceptions of the UoB's teachers and L2 students of the effectiveness of using discussion boards?*

2. *To what extent does student discussion board discourse resemble typical written or spoken language?*

   Related to this question, I also investigate the frequency and purpose of possible code-switching and/or code-mixing between Arabic and English in the discussion boards.

I have to re-mention here that the aim of the second main research question is to complement the first to provide a holistic account of how students' L2 learning and to their discourse after the use of the discussion board. Being an L2 teacher and a linguist, I understood the *UoB's* L2 teachers concerns about the appropriacy of the linguistic input in the online settings and the effects the use of networked CMC tools such as the discussion board might have on the quality of their students' academic output. Hence, I intended to analyse the linguistic features of the online discourse in addition to examining the pedagogical effects of using the medium to encourage these teachers to use the available technology and to provide them with suitable recommendations and practical implications.

That said, the following discussion presents the main research findings:

8.2.1Discussion Boards can have Positive Effects on L2 Writing Development

The possible influence of discussion boards on students' L2 writing development was assessed by empirically measuring experimental and control students' pre- and post-study fluency, accuracy, and grammatical and lexical complexity. The following is a synopsis of the measures used and their findings.

a) Development of Fluency:

The *t*-tests of the ratio of the total number of words per clause (W/C) and the total number of words per error-free clause (W/EFC) showed no significant differences between the experimental and control groups. It appears that using the discussion board did not significantly influence students' writing fluency although highly significant differences were found (p=0.000) in the within-group comparison of experimental

students' pre- and post-writing tests using paired sample *t*-tests. Also, similar significant differences were found in all the measures used between Week 2 and Week 10 of the discussions, suggesting that students produced more writing towards the end of the experiment. These significant differences, however, seem to be attributed to other factors than to the use of discussion boards like the trade-off between the three aspects as students seem to have regarded the post-test as a real test, hence their attention might have been directed to producing more accurate and complex structures rather than producing more words(*see*4.3).

b) Development of Accuracy:

Although there were no significant differences found in the error-free clause ratio (EFC/C) between both groups, a significant difference was found in the ratio of the number of errors to the total number of words (errors/words) (p=0.042). This suggests that there was a moderate effect of using the discussion board on students' accuracy development. It is possible that more significant results in both measures could have been attained if the experiment lasted longer (*see*8.3 below for study limitations) since tangible development of accuracy often requires lengthier use of the independent variable (*see* Chapter 4).

c) Development of Grammatical Complexity:

The *t*-test calculating the dependent clause ratio (DC/C), considered by Wolfe-Quintero *et al.* (1998) as one of the best measures used, showed that there was a highly significant difference found between both groups in their grammatical complexity (p=0.007*). Rationales behind the increase in students' grammatical complexity are mentioned below after discussing the results of the lexical complexity (also *see* 4.3.c).

d) Development of Lexical Complexity:

Measures of lexical variation, density and richness were used to examine the development of students' lexical complexity. Lexical variation was measured by calculating the type/token ratio (TTR) but relatively significant differences were found in the *t*-test between both groups (p=0.049). This was followed by an analysis of lexical

density using the ratio of lexical words to the total number of words (L/W),which was found to be highly significant in the *t*-test between both groups (p=0.001 for L/W).

Another lexical complexity measure used was calculating the lexical richness using *P_Lex* (Meara & Bell, 2001). While the Lambda for both groups was the same at the pre-test (Lambda=0.99), the experimental group had an increased Lambda of 1.7 in the post-test in comparison to a Lambda of 1.1 for the control group.

Why did students' writing complexity, and more particularly lexical complexity, develop more significantly than their accuracy and fluency after using the discussion board? One possible factor is the influence of interactive peer responses which provided students with greater language exposure to increased linguistic input and hence, to lexical and grammatical structures. It appears that students' involvement in interactive discussions probably fostered the co-construction of lexical knowledge in particular through the process of negotiation of meaning among peers. Similarly, Wei (2000) found that learners controlled the mechanisms of speech and writing and explained that "These learners were operating at the lexical-conceptual structural level, which conflates universally available semantic and pragmatic information" (pp. 109-114). Peers' use of sophisticated lexical words and expressions because of using online resources (e.g. Wikipedia, online dictionaries and thesauruses, etc.) might have also led to identifiable advancement in students' overall lexical complexity.

Another factor could be related to the delayed nature of the linguistic output in the asynchronous discussions. Experimental students, influenced by factors such as audience expectations (*i.e.* peers and teacher) and presence, had enough time to use external sources to support their arguments, plan and organise their responses, and read their peers' writings and copy their peers' writing styles and lexical items before finally submitting their posts. Hence, time convenience in discussion boards has an added value in L2 writing settings not afforded in synchronous or in-class discussion.

Another reason could be the trade-off effects between students' accuracy and complexity. It may be that students did not pay much attention to the grammatical accuracy of their writings because they were more attentive to producing complex sentences. This signifies the complexity of L2 writing instruction and the traditional

pedagogical practices that often separate between the different language skills and instruct learners to focus on a particular skill at the expense of another one (Sotillo, 2000).

In sum, these findings suggest that the L2 students appear to have paid more attention to lexical items than grammatical structures when interacting meaningfully, as also found by many other studies (Blake, 2000; Pellettieri, 2000). Students' overall complexity development also reflects their risk-taking behaviour in using complex structures such as explicit or embedded subordinate clauses in addition to advanced lexical forms and expressions (Foster & Skehan, 1993).

8.2.2 Online Discussions can Enhance Student Participation and Involvement

Analysis of students' participation in the discussions revealed that the participation rate was relatively high (*see* Chapter 5), signifying students' high involvement in these discussions. A number of contributing factors that might have influenced their participation were reported. These factors, listed below, were based on the content analysis of the discussions (*see* Chapter 5) and on questionnaire and interview responses (*see* Chapter 6):

a) Enhanced Peer Response and Student Presence:

Students considered peer response one of the most important factors that affected their online participation. Students who received more positive peer responses were more motivated to participate in the discussions than those who did not receive enough responses and hence, felt discouraged to participate (Arnold, 2007; Ware & O'Dowd, 2008).

Another finding was students' use of agreement and mitigated criticism, which signifies the importance students placed on establishing social relationships with their peers in the discussions and on building a community of close ties. This was evident in the results which showed more dialogic responses with a strong sense of social presence than monologic or reflective responses. Content analysis also suggested that it was equally important for students to exploit the freedom of speech afforded by the medium

to project their identity and authorial presence but in non-intimidating manners (Powers & Mitchell, 1997). Blake (2008) supports this finding and argues that a student in online discussions goes through a "journey towards self-definition and identity as a multilingual/multicultural speaker" (p.22). However, the use of mitigated criticism was considered a negative aspect of using discussion boards since the genre of the discussions was supposed to be argumentative and students were expected to use their critical thinking skills. Section 8.4 below provides some pedagogical implications to be considered in this regard.

That said, the increased sense of authorial and social presence among students engaged in the online discussions urges us, as researchers and practitioners, to bring presence onto "the agenda for writing pedagogy" (Ivanic & Camps, 2001: 32) and find ways that would help our 'voiceless' students use their existing schemata of their L1 presence to acquire more easily the most suitable academic sense of presence (Grabe & Kaplan, 1996) and to shift between multiple voices depending on the rhetorical situation (Elbow, 1994). Cummins (1994) explains that this involves "continually creating, changing, and understanding the internal and external identities that cast us as writers, within the confines of language, discourse, and culture" (p.49). Our findings support Hyland's (2002) argument that online technologies such as the discussion board have influenced "the ways we write, the genres we create, the authorial identities we assume, the forms our finished products take, and the ways we engage with readers" (p.73). That said, however, one must be careful not to allow students to convert the discussion board into a mere social milieu in which criticism is mitigated and agreement is the most used functional move, as also found by Coffin *et al.* (2012). Conversely, students must be instructed to be more challenging and critical of their peer's views while being courteous with the social community at the same time.

b) Facilitated Gender Equality or Superiority:

Findings of Chapter Five revealed that female students participated more actively in the online discussions than their male peers. Female interviewees attributed their enhanced participation to their appreciation of the freedom of speech and self-publish, decreased male-dominance that often inhibits them from participating in classroom discussion, and reduced cultural and social constraints often discouraging females from participating in

classroom discussions in conservative societies such as the Middle East, where females are often submissive and quiet in the presence of males. Herring (2003) argues that online discussions are "inherently democratic, levelling traditional distinctions of social status, and creating opportunities for less powerful individuals and groups to participate on a par with members of more powerful groups" (p.202).

c) Reduced Anxiety:

Findings suggested that among the most active online participants were shy and introverted students who mentioned in their interviews that while they often participated in in-class discussion only if they *had to* (*see* Chapter 6), they participated willingly and effectively in the discussion board because of the anxiety-free environment it provided in which communication barriers such as academic competence, gender, rank, etc. were diminished.

d) Authenticity and Audience:

Many students reported that they participated actively in the online discussions because of the authenticity of these discussions which provided them with a real audience who read and responded to their posts.

e) Other Factors:

The choice of discussion topics and students' levels of academic performance and computer literacy seem to have influenced students' participation in the discussions. Firstly, personalised topics directly related to students' life experiences encouraged them to participate more than general topics. Similar findings were also reported by Coffin *et al.* (2012). Students who were also more academically advanced were more active than their less-advantageous peers, and students who had average or good computer skills had higher participation rates than those with lower computer skills.

8.2.3 Positive Perceptions of Teachers and Students of the Effectiveness of Discussion Boards

Questionnaire and interview analysis revealed that teachers who were using discussion boards in their online courses had positive perceptions of the effectiveness of the medium in learning settings. In particular, the majority of these teachers acknowledged the enhanced interactivity among learners, reduced anxiety and gender differences, and increased and improved written output because of increased practice, planning, noticing, self-evaluation and sense of presence as the main advantages of using discussion boards. Correspondingly, teachers who delivered online courses but did not use discussion boards as part of their instruction also had positive expectations of the benefits of the medium in enhancing students' communicative and learning skills. That said, these teachers provided a number of reasons for not using discussion boards in their courses such as the lack of time, incentives and proper training in addition to their concerns about the quality and appropriacy of students' input and output in online communication.

The majority of students also had positive perceptions of how using the discussion board affected their L2 writing and learning experience. They valued the medium from both pedagogical and social perspectives and expressed their appreciation of the enhanced student-student interactions and presentation of their authorial and social presence in the online discussions which most of them regarded as the most enjoyable activity they were involved in and requested to have in future courses. Most student interviewees believed the online discussion helped them improve their writing skill and learning strategies, and become more critical, vocal and active.

In general, the content analysis of the discussions and teachers' and students' questionnaire and interview responses revealed a number of factors that might have affected the positive perceptions of discussion boards:

- *Peer response*: Enhanced peer interaction and response was a key factor in influencing students' perceptions in general. Students claimed they paid extra attention to producing proper discussions by planning, drafting and editing their

texts before submission just because their audiences were their peers. Another claim, supported by the content analysis of the discussions, was the influence of peers' grammatical and lexical expressions on the development of their overall writing skill. Students' positive perceptions could also be influenced by their involvement in socio-emotional interactions directed towards establishing relationships with peers more than in task-driven interactions often controlled by the teacher (Lapadat, 2002). Students argued that these discussions compensated for the absence of student-student and student-teacher interactions in face-to-face L2 settings. This argument supports our initial claim that current pedagogical practices in L2 courses at the *UoB* are mostly teacher-centred and hence, fail to engage the students in meaningful dialogic discussions.

- *Increased input and enhanced output*: Learners suggested receiving considerable amount of peer texts to read and producing a significant amount of comprehensible output to actively participate in the online discussions. Hyland (2003) relates this factor to *language scaffolding*(Simpson, 2005), which helps students understand texts and build the linguistic competence necessary to create texts through the provision of input, audience, and supportive but challenging instruction that generates output and cognitively- and interactionally-demanding learning situations.

- *Practi*ce: The frequent use of the discussion board seems to have provided students with the opportunity to practice using the language more extensively. The experimental group wrote as much as five times more than the control group (ratio= 26:5). Similar findings were found by Kern (1995b). Hence, the more students produce the target language the better their L2 learning becomes.

- *Reduced anxiety and gender differences*: The reduction of communication barriers such as language competence, shyness and gender seem to have encouraged students to engage actively in the online discussions and to outperform their counterparts. Females and most low-achievers found the online discussions anxiety-free zones in which they were able to conveniently express their opinions and interact with pees more than in in-class discussions.

- *Presence*: Most students participated actively in the discussion board because they considered it an excellent milieu to express their individual opinions while being members of an interactive online community. They expressed that the sense of presence, whether authorial or social, helped them establish close relationships with peers and encouraged them to contribute more.

The sum of all contributing factors presented here and earlier suggest that the use of discussion boards facilitates most of the components and strategies presented in the developmental models of writing by Flower and Hayes (1980) and more specifically by Bereiter and Scardmalia (1987), who stress on the importance of the *knowledge telling strategy* and the *knowledge transforming strategy* (*see* Figure 2.7 and Figure 2.8). These factors also represent most of the L2 writing tenets of Raimes (1983) and Hyland's (2003) *Process Model of Writing Instruction* (*see* Chapter 2). They also show that using the discussion board promotes the use of metacognitive learning strategies such as planning, noticing, self-monitoring and self-evaluation.

That said, however, teachers and students had the following negative perceptions about discussion boards:

- *Time consumption*: While teachers considered reading and replying to students' initial postings and responses time-consuming and increasing their workload a main disadvantage, students complained of the overwhelming amount of writing they had to do per week although there was no grade allocation for their online participation.

- *Gender dominance*: All male students criticized females' dominance in the discussion board which negatively influenced their participation because of being discouraged to discuss "feminine" issues.

- *Some anxiety*: Few low-achieving students reported that they were afraid to participate in the discussion board because of their low academic level. They reported that they felt pressurized to ensure that their contributions were accurate to avoid being embarrassed or ridiculed by peers since these contributions were public and permanent. Although students considered this

pressure a disadvantage, I consider it a motive that helped these students write better and more.

- *Limited number of responses*: Another discouraging disadvantage reported by some students was the limited responses they received from some of their peers. It was observed that while advanced students sent the majority of responses especially to their weak peers, they received the least from them. It seems that advanced students wanted to encourage their peers to participate more while the weak students did not have the language competence and confidence to reply back to them. This unbalanced interplay was found disappointing by some of these advanced students.

- *Technical problems*: While teachers complained about the lack of constant technical support, students reported their dissatisfaction with the interface of the *WebCT*'s discussion board.

- *'Bad English'*: Some teachers who did not use the discussion board reported their concerns about the negative influence of using discussion boards and other online communication tools on students' writing proficiency, possibly resulting in fragmented, erroneous, speech-like writing that is full of code-switching and code-mixing instances.

8.2.4The Discourse of Online Discussion is not Erroneous/Fragmented but is a Hybrid of Speech and Writing

To verify teachers' claims about the inappropriateness of the online discourse and its resemblance to speech, I examined the linguistic features of the discourse exchanged in the discussion board among experimental students and placed on a continuum between speech and writing after analysing the most frequent grammatical and lexical structures in the corpus and comparing the findings to existing corpora such as British Academic Written English (*BAWE*) and British Academic Spoken English (*BASE*)(*see* Chapter 7).

Results showed that while students used some complex syntactic and lexical structures more akin to written language (*e.g.* clausal subordinating structures and participles), they also used structures often used in speech (*e.g.* active voice and fillers). Hence, the discourse was considered a hybrid of both spoken and written modes of language, as suggested by many other researchers (Grabe & Kaplan, 1996; Hinkel, 2003; Hyland, 2002; Ishikawa, 1995). Herring (1996, 2001) refers to online discourse as 'textual conversation' while Ferrera, Brunner and Whittemore (1991) consider it an 'interactive written discourse' (*see* Chapter 7). I also found no significant instances of code-switching or code-mixing between Arabic and English, suggesting that students used only academic English in their written exchanges.

It is noteworthy, however, that students' use of writing- or speech-like features seemed to be mainly influenced by the type of their online contributions. Students' initial postings, in which they were expected to voice their opinions in response to a discussion prompt, were *monologic*, formal, and structurally complex like written language, while their responses to their peers were *dialogic*, informal, and more akin to spoken language. This directs our attention to the fact that students were conscious of their linguistic choices and made decisions on what form of language was more convenient in each type of their online contribution. Hence, I place the online discourse on a continuum between speech and writing according to the user's individual needs and the purpose and type of contributions, as shown below:

Writing ⇨ Monologic Online Discourse ⇨⇨ Dialogic Online Discourse ⇨ Speech

This finding is supported by Davis and Brewer (1997: 165), who found that their students "presented their own individual performances, replicating their own stylistic preferences with discourse signatures keyed to their individual repetition and variation". They argue that online discourse "like any other use of language performed by interaction for the purpose of making or sharing meaning, is replete…It is as complex, as varied, and as individual as the people who engage in its exchange" (p.165). It is also possible that students considered the type of audience when writing their contributions. It can be assumed that students used writing-like features in their initial postings thinking that these were viewed by the teacher, whom they needed to impress, while they used speech-like features in their responses because their audience was their peers,

whom they needed to establish social bonds with. In all cases, the discourse seems to be influenced by students' different drives.

Thus, I believe that L2 writing teachers need to consider these findings instead of associating discussion boards with non-standard erroneous English. Some distinctions between non-standard English and the discourse exchanged on the discussion boards depending on students' motives ought to be realised by these teachers. When students need to be informative, they use standard and accurate English while when the aim is to be communicative and interactive, a target often neglected in L2 settings (*see* Chapter 1), their discourse becomes informal but not fragmented or erroneous (*see* Chapter 7).

I also believe that the degree to which students' discourse resembles writing or speech depends on the objectives set by the teacher. If the objective is to enhance students' communicative competence and language production, students can be allowed to exchange language freely without paying extra attention to accuracy. If the objective is to engage students in tasks that can help them produce accurate comprehensible output, then the teacher should instruct them to conform to the correct grammatical and lexical forms especially if formal assessment of written products is part of course requirement.

8.3 LIMITATIONS OF THE STUDY

It is inevitable to find limitations in any study especially if it has a broad scope like ours analysing different aspects of using a variable in a quasi-experimental manner. This study has a number of limitations. First of all, an important limitation is related to the number of participants in this study. For administrative reasons beyond our control such as registration, drop-outs and withdrawals, it was only possibly to have 41 students only as study subjects. I believe that studies with larger numbers of participants could present more valid findings.

Another limitation is that the short period of the study (one semester= 12 weeks) cannot provide a full understanding of the effect of discussion boards in the *UoB*'s L2 settings. However, it was not possible to extend the period of the experiment to more than a semester because the *UoB* Council's approval to conduct the study in its academic settings was limited to one semester only. I propose that more persuasive outcomes

especially at the level of writing development aspects could have been attained in a one-year study (Boyd, 2008; Wang & Woo, 2007). Zhu (2006) argues that "it may take longer and require online experience before students demonstrate measurable improvements in appropriate use of genre" (p.363). A longer timeframe for online discussions is necessary to ensure a two-way communication and to enable participants to read, post, wait for responses, and reply to these responses without strict time constraints (Abrams, 2003; Wang & Woo, 2007).

The study is also limited in its examination of the effect of discussion boards only. It is perhaps useful to examine the influence of both synchronous and asynchronous communication tools on L2 writing development in the same settings or analyse the discoursal features found in both types.

The final limitation is the possibility of bias. Firstly, students' responses could have been influenced by the social desirability bias. It is possible that students expressed their positive attitudes towards the use of the discussion board only because of their desire to please the teacher/researcher (*see* Section 6.4). Thus, teachers' responses were also gathered to verify students' responses especially in regards to their participation in in-class discussion. Students were also notified from the outset of the experiment that participation in the discussions was optional and that there was no grade allocation for their participation (*see* Appendix D). Also, both pre- and post-study questionnaires were administered online without the presence of the teacher so that students do not feel monitored and hence, provide positive responses. Only *WebCT* administrators at the *E-Learning Centre* had access to the questionnaires and their statistics. Post-study questionnaires and interviews, as mentioned earlier, were administered and conducted after the submission of the final grades so that students did not have to feel pressurised to please me with affirmative responses.

Secondly, it is possible that the novelty of using the discussion board may have influenced students' positive responses. However, the pre-study questionnaire revealed that the majority of the students had some experience with submitting assignments and communicating with teachers via email on *WebCT*.

Last but not least, bias could have been caused by the use of the researcher as the main data-gathering tool. It is possible that I as the researcher *and* the teacher could have influenced the findings by directing course design and pedagogical practices in favour of the research design and tools. Thus and in order to overcome this limitation, I used a mixture of quantitative and qualitative data collection measures (e.g. pre/post-study writing tests, questionnaires, interviews) and multiple analysis tools (e.g. descriptive analysis, discourse analysis using a corpus, content analysis, etc.) (*see* Chapter 3). I also ensured that both control and experimental groups received the same teaching materials and assessment tools. Analysis of different types of data was also verified by the additional rater, Mr. M.M.

8.4IMPLICATIONS AND RECOMMENDATIONS

The findings have important pedagogical and administrative implications for the use of discussion boards in L2 writing contexts. Sit *et al.* (2005) argues that "As the online learning marketplace expands, there is a timely need for evaluating its outcomes and effects on teaching and learning" (p.141). The following discussion presents these implications in details.

a. Pedagogy of Online Discussion:

i. *Proper Online Discussion Tasks Design:*

Certain steps have to be taken when designing discussion tasks to facilitate ultimate educational gains. First of all, the syllabus, course outline and objectives have to be prepared before the beginning of the course. The outline should state the explicit purposes of the online discussion assignments and a clear connection should be made explicit between these assignments and the course content. Although it is difficult to predict the actual outcome of a certain discussion task, teachers should plan and execute the task according to the desired outcomes (Meunier, 1998). For instance, if the objective is to promote students' use of argumentation or certain discourse functions, then the task should include open-ended questions that would generate different arguments (Abrams, 2003). Also, using a mixture of argumentative and descriptive prompts would be useful in encouraging the production of interactive discussions.

Teachers should also use clear and specific questions to save time, minimise confusion and increase participation, and they should avoid confusing questions might impede students' communication and progress because they need further clarifications.

It is also fundamental to present motivating, challenging, and experience-based topics to promote interaction, negotiation of meaning and critical thinking skills through collaborative tasks that show more student control and less teacher domination (Lapadat, 2002). Students should be able to contribute to the discussions based on their personal experience using their language styles (Elola & Oskoz, 2010). Also, students' cultural reluctance to criticize and judge their peers (Hyland, 2003) needs to be addressed and the production of mitigated criticism should not be encouraged.

Gender-free topics should be carefully prepared to reduce possible hostility caused by the dominance of a particular gender over the discussions. Teachers need to monitor the discussions constantly to ensure balanced and equal participation of all students. If dominance was observed, immediate action needs to be taken to remove any source of antagonism in the discussions and ensure full participation.

Low-achievers also should equally be encouraged to participate in the discussions. This could be achieved through grades allocated to participation rates instead of language competence. Another solution is to design collaborative tasks in which every student, weak or advanced, is assigned a role in the discussions and is obliged to participate actively. Once these weak students participate, they will benefit from the input and support they receive from their peers/audience (i.e. *language scaffolding*) (Donato, 1994; Simpson, 2005) and from the increased amount of the linguistic output they will produce (Sotillo, 2000).

ii. *Student Preparation:*

Teachers should be aware of the following guidelines related to preparing students to use discussion boards:

- It is important that students are prepared for the discussion task and are aware of its objectives (Salaberry, 1996). Teachers should also explain how the use of

discussion boards can enhance students' learning progress and reduce communication barriers such as age, gender or class. Once students value their exchanges, they start developing their orientation from being social towards being more academic and thus, their contributions become more focused and less spontaneous (Coffin *et al.*, 2003) (*see* Chapter 7).

- Students also need to be encouraged to think critically and prepare careful responses to the prompts. Hence, their lexical knowledge should be enhanced by equipping them with basic argumentative expressions necessary for effective presentations of their viewpoints (Kern, 1995a).

- They should also receive effective technical training to solve possible technical problems that might arise and hence, reduce computer anxiety (Boyd, 2008).

- Teachers should also consider students' opinions in the evaluation of the course design and tasks and use of discussion boards (Boyd, 2008). The encouragement of meta-commentary and feedback about the design helps motivate students to participate more actively in the discussions (Anderson *et al.*, 2001).

- It is also useful to make students aware of the significance of their role in the discussions and that every contribution they post in the discussion board is as equally important as the other contributions. Students' appreciation of their online roles could develop their sense of individual accountability and interdependence (*i.e.* understanding that each student's effort in the discussions helps) (De Laat & Lally, 2004).

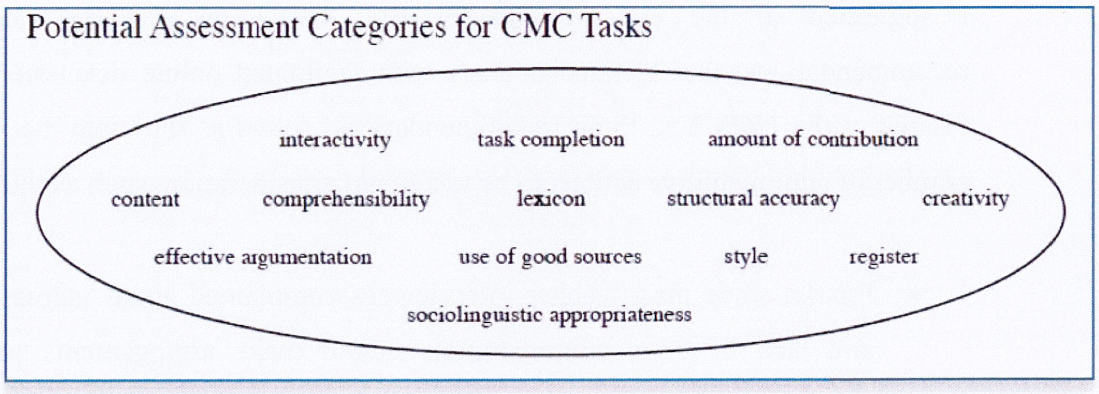
- Teachers should also provide their students with guidelines on proper time management, 'netiquette' or proper online behaviour, and expected senses of established communities with peers (Song *et al.*, 2004).

iii. *Task Assessment:*

Whether and how students' performance or participation in the online discussions is assessed should be made clear from the outset of any course. If assessment is chosen, the type of assessment (i.e. self-assessment, peer assessment, or portfolio assessment)

and the type of scoring, whether analytical or holistic, should be clearly stated (Abrams, 2006). Assessment sheets should be provided so that students understand their teacher's expectations of their participatory roles and whether their contributions are to be assessed on their communicative skills or grammatical and lexical accuracy of their writing. In this regard, up-to-date assessment models such as Abrams' (2006) model (*see* Figure 8.1) can be used to assess tasks on discussion boards.

Figure 8.1: Abrams' (2006) Model for Assessing Online Tasks



iv. Teacher Involvement:

Although teacher involvement in discussion boards does not seem to necessarily influence students' participation (Beauvois, 1998; Chun, 1994; Kern, 1995a), this does not imply that teachers should remain passive in these settings. Mallinen (2001) argues that it is "important to consider the teacher's role as the designer and manager of new learning environments. Although learning is a students' individual growth process, there is evidence that teachers can make a difference" (p.148). Teacher involvement can provide a sense of teacher-student connectedness (Wu & Hiltz, 2004) and help monitor students' performance and assess the completion of tasks and the achievement of objectives (Mallinen, 2001).

Teachers need to be responsive and provide constant course-related or technical feedback to guarantee that students do not go through a frustrating loop of being lost in cyber-world, which could be detrimental to the learning process (DiGiovanni & Nagaswami, 2001; Ware, 2005). The teacher should therefore function as an "apprenticeship model" representing "the expert of more skilled peers who scaffolds a

novice's learning" by "interjecting comments, referring students to information resources, and organizing activities that allow the students to construct the content in their own minds and personal contexts" (Anderson *et al.*, 2001: 8-9).

That said, these pedagogical implications need to be supported with a number of administrative guidelines discussed in the following section.

b. Administrative Procedures:

I suggested at the end of Chapter Six, based on teachers' and students' recommendations, that blended courses with facilitated online discussions should be offered at the *UoB*. Yet, these recommendations, sound as they may be, necessitate a number of administrative actions to be taken into consideration, such as the following:

- Firstly, since most teacher interviewees complained about increased workload and lack of time, administrators should make arrangements to reduce the workload for teachers who actively use discussion board or other means of online communication in their instruction by possibly assigning more credit hours to the courses they offer. Increasing a particular course's credit hours has happened before for online courses delivered by the *English Language Centre* to orientation students only. Hence, I see no reason why the *English Language and Literature Department* cannot do likewise for all its blended courses.

- Administrators should also acknowledge the efforts exerted in providing online courses with discussion boards by offering incentives such as bonuses or professional grades. Academic incentives such as grades could also be offered to students who actively participate in these courses.

- It is also important for administrators to alter the negative perceptions faculty members may have about the use of asynchronous or synchronous communication tools in their online courses through seminars and workshops that demonstrate the possible educational effectiveness of these tools

- Proper training should be provided to teachers and students on the use of instructional technologies like discussion boards and their different functions through seminars, workshops and guiding manuals.

- More computer labs and better technical support should be provided to help teachers overcome problems of over-booked or unavailable labs. This is also manageable as the university has lately increased its support to online instruction and allocated a big budget for the *E-Learning Centre* and its courses.

- More interactive open-source learning platforms like *Moodle,* which can be tailored to specific student preferences, should be used instead of *WebCT*, which students and teachers complained of its rigidity and unattractive interface (*see* Chapter 6).

In sum, I believe that the pedagogical and administrative guidelines presented above should encourage the effective facilitation of discussion boards in the *UoB*'s L2 writing settings. In the following section, I suggest possible areas for future research in the field of instructional technology and the use of discussion boards.

8.5 AREAS FOR FUTURE RESEARCH

The study suggests a number of areas for future research and assumes that the best use of instructional technologies like discussion boards are yet to be further explored. Overall, it appears that there is a need for more empirical research capable of providing conceptual pedagogical frameworks. In this regard, I suggest the following:

i. First of all, studies on instructional technologies such as discussion boards can examine a much larger set of data, preferably from different disciplines and involving larger numbers of participants from different age and ethnic backgrounds and then possibly compare the findings to other studies carried out in the same geographical region or to those conducted in other L2 settings in order to understand the effects of context on the perceived

cognitive and interpersonal benefits of the use of a particular online medium in L2 instruction.

ii. It is also desirable to compare in a comparative longitudinal study the impact of synchronous and asynchronous types of networked CMC on the development of L2 writing and other skills and to examine learners' perceptions and preferences of both modes.

iii. In future research studies, Bahrain-based researchers can address a number of questions that have not yet been raised or that need to be investigated more thoroughly:

1. What are the obstacles that hinder students from participating in in-class discussion? How can these obstacles be overcome?
2. How do course type, content and teachers' technological expertise and involvement affect students' participation in online settings?
3. What effect does students' sense of authorial and/or social presence have on their perceptions of the effectiveness of a particular online communicative tool?

iv. Future research should also seek to further examine the linguistic diversity and multilingualism in online discussions. For instance, Romanised versions of the local dialects in online communication should be further examined to understand their linguistic features and the sociolinguistic variables behind their use. A thorough analysis of linguistic diversity might prove crucial in identifying the sub-dialects, registers and genres found in online discussions.

v. Researchers can also address in greater depth the affective requirements of online L2 learners. In particular, the removal of gender-related communication barriers in online discussions especially in conservative settings such as the Middle East needs to be further tackled. Certain questions in this regard could be raised such as the following:

1. Does interactive communication using discussion boards solve social problems associated with gender differences in classroom participation?
2. Are asynchronous communication tools more effective in ensuring gender equality in the freedom of expression for Arab female participants than the synchronous ones?
3. How can a balanced gender-free interactive L2 environment be attained in in-class discussions?

vi. Future studies can also further examine peers' effects on students' writing development. Grammatical and lexical errors, for instance, can be classified to understand what aspects of accuracy develop more than others. I also believe that more in-depth studies on peer feedback and teacher corrective feedback may encourage more effective use of interactive instructional technologies.

8.6CONCLUSION

This study's findings point to a major advantage of using discussion boards in conventional teacher-centred L2 instruction as it can offer greater possibilities for student-centred interaction and enhanced participation in the writing class, and this, in turn, may promote L2 writing development especially in regards to accuracy and complexity. In this respect, the findings are consistent with those of other researchers (*see* e.g. Blake, 2000; Berge, 1997; Boyd, 2008; Elola & Oskoz, 2010; Ortega, 2007; Sotillo, 2000; Warschauer, 1996c). In short, discussion boards can be an efficient instructional adjunct in providing interactive learning opportunities in an anxiety-reduced setting where academic and gender differences become less salient and writing development takes place influenced by a number of cognitive and pedagogical factors.

I do not suggest that discussion boards should replace in-class instruction or discussion but rather that they complement class work and compensate for the limited in-class discussion, which is a major limitation of current L2 writing instruction. As Warschauer (1995) points out, online discussion is "a powerful new tool that can help teachers implement good pedagogy; not a magic wand that, once waved, replaces previous

pedagogy" (p.65). Lapadat (2002) also point out that discussion boards "create a high premium on good writing, and as participants strive to put their thoughts into writing clearly, they will take their time, reflect, and consider their audience's perspective, and use critical and higher order thinking skills" (p.12). Boyd (2008) takes this point further and states that written exchanges on discussion boards "provide students with a high opportunity to craft their thinking within dialogic exchanges rather than in isolation, which help students better envision an audience for whom they are writing" (p.239).

Turning to more practical matters, I recommend that the *UoB* administrators and L2 teachers should acknowledge the shortcomings of current methods of L2 writing instruction and accept that learning is not optimal when students are passive recipients of knowledge and teachers remain the sole providers of knowledge. Writing development takes place when students discuss their ideas, notice and exchange comprehensible input, and produce comprehensible output for a real audience. In other words, learning is not only governed by the individual efforts in any given educational setting, but also by the surrounding environment and its interactive members and tools. I argue, therefore, that administrators and teachers should be encouraged to allow and facilitate discussion boards in L2 writing milieus.

REFERENCES

REFERENCES

Abdullah, M.H. (1998). *Electronic discourse: Evolving conventions in online academic environments.* Bloomington, ERIC Clearinghouse on Reading, English, and Communication. [ED422593].

Abdul Majeed, M.Y. (1995). *Motivational and socio-cultural contexts of learning English as an international foreign language.* (Unpublished PhD thesis, University of Wales).

Abrams, Z.I. (2003). The effect of synchronous and asynchronous CMC on oral performance in German. *Modern Language Journal*, 87 (2), 157–167.

Abrams, Z.I. (2006). From theory to practice: Intracultural CMC in the L2 classroom. In L. Ducate & N. Arnold *(Eds.), Calling to CALL: From theory and research to new directions in foreign language teaching (pp. 181–209). San Marcos, TX: Computer Assisted Language Instruction Consortium.* Retrieved February 7, 2009, from http://www.personal.psu.edu/slt13/589_s2007/Abrams_CMCIntraclass06.pdf

Ahmad, R. (1999). *Effectiveness of web-based virtual learning environments in business education: Focusing on basic skills training for information technology.* (Unpublished PhD thesis, Louisiana State University and Agricultural and Mechanical College).

Al Ansari, S. (1985). *Environmental factors influencing students' achievement in English as a foreign language: a case study of third secondary school students in Bahrain.* (Unpublished PhD thesis, University of Wales).

Al Jahromi, D., Al Wadi, H., & Al Majdoob, S. (2003). A survey of students' attitudes towards English language learning and curriculum. *Paper presented at the English language curriculum development symposium: Towards a New Curriculum for the New Millennium*, Bahrain, 18th-20th January 2003.

Al Raffai, A.A. (1995). *Improving reading English in Bahrain secondary schools through learner training.* (Unpublished MED thesis, University of Nottingham).

Altenberg, B. (1995). English discourse connectiveness in a Swedish perspective. Symposium on *Exploiting Computer Learner Corpora: Grammar, Lexis and Discourse.* Louvain-la-Nueve, Belgium.

Althaus, S.L. (1997). Computer-mediated communication in the university classroom: An experiment with on-line discussions. *Communication Education, 46* (3), 158-174.

Anderson, T, Rourke, L., Garrison, D.R., & Archer, W. (2001). Assessing teaching presence in a computer conferencing context. *Journal of Asynchronous Learning Networks*, 5(2), 1-17.

Anderson, T. (2004). Student services in a networked world. In J. Brindley, C. Walti & O. Zawacki-Ritcher (Eds.), *Learner support in open, distance online learning environments.* Oldenburg, Germany.

Anderson, T. (2008).*Theory and practice of online learning.* Edmonton, AB: AU Press.

Anderson, T., & Kanuka, H. (1997). On-line forums: New platforms for professional development and group collaboration. (ERIC Document Reproduction Service No. ED 418693).

Angeli, C., Bonk C., & Hara, N. (1998). Content analysis of online discussion in an applied educational psychology course. *CRLT Technical Report No. 2-98.*Retrieved September 29, 2008, from http://crlt.indiana.edu/publications/crlt98-2.pdf

Angeli, C., Valanides, N., & Bonk, C. J. (2003). Communication in a web-based conferencing system: The quality of computer-mediated interactions. *British Journal of Educational Technology*, 34(1), 31-43.

Applebee, A.N., Langer, J.A., Nystrand, M., & Gamoran, A. (2003). Discussion-based approaches to developing understanding: Classroom instruction and student performance in middle and high school English. *American Educational Research Journal*, 40(3), 685-730.

Arbaugh, J., & Hiltz, S.R. (2005). Improving quantitative research on ALN effectiveness. In S.R. Hiltz & R. Goldman (Eds.), *Learning together online: research on asynchronous learning networks* (pp.81-102). Mahwah, NJ: Lawrence Erlbaum.

Arnold, N. (2007). Reducing foreign language communication apprehension with a computer-mediated communication: A preliminary study. *System*, 35, 469-486.

Astika, G. (1993). Analytical assessment of foreign student's writing. *RELC Journal*, 24, 61-72.

Ayoun, D. (1995). Write from the start! Email for beginning French students. In M. Warschauer, (Ed.), *Virtual connections: Online activities and projects for networking language learners* (pp.41-43). Honolulu, HI: University of Hawai'i, Second Language Teaching and Curriculum Centre.

Bailey, S. M. (1996). Shortcoming girls and boys. *Educational Leadership*, 53(8).

Baker, P. (2006). *Using corpora in discourse analysis*. London: Continuum.

Bakhtin, M.M. (1981). *The dialogic imagination*. Austin, TX: University of Texas Press.

Bakhtin, M.M. (1984). *Rabelais and his world*. Bloomington: Indiana University Press.

Bardovi-Harlig, K., & Bofman, T. (1989). Attainment of syntactic and morphological accuracy by advanced language learners. *Studies in Second Language Acquisition*, 11, 17–34.

Baron, N.S. (1984). Computer mediated communication as a force in language change. *Visible Language*, 18, 118-141.

Baron, N.S. (1998). Letters by phone or speech by other means: The linguistics of email. *Language and Communication*, 18, 133-170.

Baron, N.S. (2000). *Alphabet to email: How written English evolved and where it's heading*. London: Routledge.

Barrett, M.D. (1981). The communicative functions of early child language. *Linguistics*, 19, 273-305.

Beatty, K. (2003). *Teaching and researching computer-assisted language learning*. Essex: Pearson Education.

Beaudin, L., & Grigg, L. (2001). Integration of computer technology in the social studies classroom: An argument for a focus on teaching methods. *Canada's National Social Studies Journal*, *35*(2).

Beauvois, M.H. (1998). E-talk: Computer-assisted classroom discussion – attitudes and motivation. In J. Swaffer, S. Romano, P. Markely, & K. Arens (Eds.), *Language learning online: Theory and practice in the ESL and L2 computer classroom* (pp.99-120). Austin, TX: Labyrinth Publications.

Becker, H.J., Ravitz, J.L., & Wong, Y. (1999). Teacher and teacher-directed student use of computers and software. Report #3, *Teaching, Learning, and Computing: 1998 National Survey*. Center for Research on Information Technology and Organizations, University of California, Irvine, Calif. (Sept. 1999).

Belcher, D.D. (1999). Authentic interaction in a virtual classroom: Levelling the playing field in a graduate seminar. *Computers and Composition*, 16(2), 253-267.

Bell, H. (2003). *Using frequency lists to assess L2 texts*. (Unpublished PhD thesis, University of Wales Swansea).

Belz, J.A. (2001). Institutional and individual dimensions of transatlantic group work in network-based language teaching. *ReCALL*, 13(2), 213-231.

Belz, J.A. (2002). Social dimensions of telecollaborative foreign language study. *Language Learning and Technology*, 6(1), 60-81.

Belz, J.A. (2003). Linguistic perspectives on the development of intercultural competence in telecollaboration. *Language Learning and Technology*, 7(2), 68-117.

Belz, J.A., & Müller-Hartmann, A. (2003). Teachers as intercultural learners: Negotiating German-American telecollaboration along the institutional fault line. *Modern Language Journal,* 87(1), 71–89.

Benbunan-Fich, R. (1997). *Effects of computer-mediated communication system on learning, performance and satisfaction: A comparison of groups and individuals solving ethical scenarios.* (Unpublished PhD thesis, Rutgers University, Newark).

Benbunan-Fich, R., Hiltz, S.R., & Turoff, M. (2002).A comparative content analysis of face-to-face vs. asynchronous group decision making. *Decision Support System*, 34, 457-469.

Berge, Z.L. (1997). Characteristics of online teaching in post-secondary, formal education. *Educational Technology,* 37(3), 35-47.

Berge, Z.L., & Collins, M.P. (1993). Computer conferencing and online education. *The Arachnet Electronic Journal on Virtual Culture,* 1(3). Retrieved January 28, 2008, from http://www.infomotions.com/serials/aejv/aejvcv1n03-berge-computer.txt

Berge, Z.L., & Collins, M.P. (Eds.) (1996). *Computer mediated communication and the online classroom.* Cresskill, NJ: Hampton Press.

Berieter, C., & Scardamalia, M. (1987). *The psychology of written composition.* Hillsdale, NJ: L. Erlbaum.

Bhattacharaya, M. (1999). A study of asynchronous and synchronous discussion on cognitive maps in a distributed learning environment. *WebNet 99 World Conference on the World Wide Web and Internet Proceedings*, Honolulu, HI.

Biber, D. (1988). *Variation across speech and writing.* Cambridge: Cambridge University Press.

Biber, D., Connor, U., & Upton, T.A. (2007). *Discourse on the move: using corpus analysis to describe discourse structure.* Amsterdam: John Benjamins Publishing.

Biber, D., Johansson, S., Leech, G., Conrad, S., & Finegan, E. (1999). *Longman grammar of spoken and written English.* Harlow: Longman.

Biesenbach-Lucas, S.,& Wiesenforth, D. (2001). E-mail and word processing in the ESL classroom: How the medium affects the message. *Language Learning and Technology*, 5(1), 135-165.

Black, A. (2005). The use of asynchronous discussion: Creating a text of talk. *Contemporary Issues in Technology and Teacher Education*, 5(1), 5-24.

Blair, K.L. (1996). Microethnographies of electronic discourse communities: Establishing exigency for e-mail in the professional writing classroom. *Computers and Composition*, 13(1), 85-91.

Blake, R. (2000). Computer Mediated Communication: A window on L2 Spanish interlanguage. *Language Learning and Technology*, 4(1), May 2000, 120-136.

Blanchette, J. (1999). Register choice: Linguistic variation in an online classroom. *International Journal of Educational Telecommunication*, 5(2), 127-142.

Blum, K.D. (1999). Gender differences in asynchronous learning in higher education: Learning styles, participation barriers and communication patterns. *JALN*, 3(1), 46-66.

Bolliger, D.U., & Wasilik, O. (2009). Factors influencing faculty satisfaction with online teaching and learning in higher education. *Distance Education*, 30(1), 103-116.

Bonk, C., & Cunningham, D. (1998). Searching for learner-centered, constructivist, and sociocultural components of collaborative educational learning tools. In C. Bonk & K. King (Eds.), *Electronic collaborators* (pp.25-50). Mahwah, NJ: Lawrence Erlbaum.

Bonk, C., Hansen, E., Grabner-Hagen, M., Lazar, S.,& Mirabelli, C. (1998). Time to "connect": Synchronous and asynchronous case-based dialogue among preservice teachers. In C. Bonk & K. King (Eds.), *Electronic collaborators* (pp.289-314). London and New Jersey: Lawrence Erlbaum Associates.

Bonk, C., Hara, N., Dennen, V., Malikowski, S.,& Supplee, L. (2000). We're in TITLE to dream: Envisioning a community of practice, "The interplanetary teacher learning exchange." *CyberPsychology & Behavior*, 3(1), 25-39.

Booth, S., & Hulten, M. (2003). Opening dimensions of variation: An empirical study of learning in a Web-based discussion. *Instructional Science,* 31, 65–86.

Boyd, D. (2008). None of this is real. In J. Karaganis (Ed.), *Structures of participation in digital culture* (pp.132-157). New York: Social Science Research Council.

Bradley, T., & Lomicka, L. (2000). A case study of learner interaction in technology-enhanced language learning environment. *Journal of Educational Computing Research*, 22(3), 247–368.

Brown, H. D. (1987). *Principles of language learning and teaching.* Englewood Cliffs, New Jersey: Prentice Hall.

Brumfit, C. (1984). *Communicative methodology in language teaching: The roles of fluency and accuracy.* Cambridge: Cambridge University Press.

Bullen, M. (1998). Participation and critical thinking in online university distance education. *Journal of Distance Education,* 13(2), 1-32.

Bygate, M. (1999).Task as context for the framing, re-framing and un-framing of language. *System,* 27, 33–48.

Carlisle, R.S. (1989). The writing of Anglo and Hispanic elementary school students in bilingual, submersion, and regular programs. *Studies in Second Language Acquisition*, 11, 257-280.

Carter, R.A., & McCarthy, M.J. (2006).*Cambridge grammar of English: A comprehensive guide to spoken and written grammar and usage.* Cambridge: Cambridge University Press.

Casanave, C. (1994). Language development in students' journals. *Journal of Second Language Writing*, 3, 179–201.

Castner, J. (2000). The asynchronous online writing session: A two-way stab in the dark? In J. A. Inman & D. N. Sewell (Eds.), *Taking flight with OWLs: Examining electronic writing center work* (pp. 119-128). Mahwah, NJ: Erlbaum.

Celce-Murcia, M., & Olshtain, E. (2000). *Discourse and context in language teaching: A guide for teachers*. Cambridge: Cambridge University Press.

Chafe, W.L. (1982). Integration and involvement in speaking, writing, and oral literature. In D. Tannen (Ed.), *Spoken and Written Language: exploring orality and literacy* (pp.35-54). Norwood, N.J.: Ablex.

Chafe, W.L., & Danielewicz, J. (1987). Properties of spoken and written language. In R. Horowitz & S. J. Samuels (Eds.), *Comprehending oral and written language (pp.* 83-113). New York: Academic Press.

Chandler, J. (2003). The efficacy of various kinds of error feedback for improvement in the accuracy and fluency of L2 student writing. *Journal of Second Language Writing*, 12,267–296.

Chapelle, C.A. (1997). CALL in the year 2000: Still in search of research paradigms? *Language Learning and Technology,* 2(1), 22-34.

Chapelle, C.A. (1998). Multimedia CALL: Lessons to be learned from research on instructed SLA. *Language Learning and Technology,* 2 (1), 22-34.

Chapelle, C.A. (2000). Is network-based learning CALL? In M. Warschauer & R.G. Kern (Eds.), *Network-based language teaching: concepts and practice* (pp.204-228). Cambridge: Cambridge University press.

Chapelle, C.A. (2001). *Computer applications in second language acquisition: Foundations for teaching, testing and research.* Cambridge: Cambridge University Press.

Chapelle, C.A. (2005). Interactive SLA theory in CALL research. In J. Egbert & G.M. Petrie (Eds.), *CALL Research Perspectives* (pp.53-64). Mahwah, NJ: Lawrence Erlbaum Associates.

Chastain, K. (1990). Characteristics of graded and ungraded compositions. *The Modern Language Journal,* 74(1), 10-14.

Chen, C. F. (2005). Experience-based language learning through asynchronous discussion. Paper presented at the 22nd International Conference on *English Teaching and Learning in the Republic of China*, Taipei.

Chenoweth, N.A., & Hayes, J.R. (2001). Fluency in writing: Generating text in L1 and L2. *Written Communication*, 18(1), 80-98.

Cherny, L. (1999). *Conversation and community: Chat in a virtual world.* Stanford, CA: CSLI Publications.

Chester, A & Gwynne, G. (1998). Online teaching: Encouraging collaboration through anonymity. *Journal of Computer Mediated Communication*, 4(2).

Chong, S. (1998). Models of asynchronous computer conferencing for collaborative learning in large college classes. In C. Bonk & K. King (Eds.), *Electronic collaborators: Learner-centered technologies for literacy, apprenticeship, and discourse* (pp.157-182). Mahwah, NJ: Erlbaum.

Chun, D.M. (1994). Using computer networking to facilitate the acquisition of interactive competence. *System*, 22(1), 17-31.

Chun, D.M., & Plass, J. L. (1996). Effects of multimedia annotations on vocabulary acquisition. *Modern Language Journal*, 80, 183-198.

Coffin, C. (2006). Learning the language of school history: The role of linguistics in mapping the writing demands of the secondary school curriculum. *Journal of Curriculum Studies*, 38(4), 413–429.

Coffin, C., Curry, M.J., Goodman, S., Hewings, A., Lillis, T.M., & Swann, J. (2003). *Teaching academic writing: A toolkit for higher education.* London: Routledge.

Coffin, C., North, S., & Martin, D. (2009). Exchanging and countering points of view: A linguistic perspective on school students' use of electronic conferencing. *Journal of Computer Assisted Learning*, 25(1), 85-98.

Coffin, C., Hewings, A., & North, S. (2012). Arguing as an academic purpose: The role of asynchronous conferencing in supporting argumentative dialogue in school and university. *Journal of English for Academic Purposes.* Retrieved January 20, 2012, from http://www.sciencedirect.com/science/article/pii/S1475158511000804

Collins, J.A. (2000). *Intersections of writers' intended readers with peer responders during asynchronous forms in first-year composition.* (Unpublished PhD thesis, Arizona State University).

Collins, M.A., & Berge, Z.L. (1996). Introduction: Computer mediated communication and the online classroom in higher education. In Z. L. Berge &M.A. Collins(Eds.),*Computer mediated communication and the online classroom* (pp.1-10). Cresskill, NJ: Hampton Press.

Collison, G., Elbaum, B., Haavind, S., & Tinker, R. (2000).*Facilitating online learning: Effective strategies for moderators.* Madison, WI: Atwood.

Collot, M., & Belmore, N. (1996). Electronic language: A new variety. In S. C. Herring (Ed.), *Computer-mediated communication - linguistic, social and cross-cultural perspectives* (pp.13-28). Amsterdam: John Benjamins.

Consolo, D.A. (2006). Classroom oral interaction in foreign language lessons and implications for teacher development. *Linguagem & Ensino*, 9(2), 33-55.

Cooper, L. W. (2001). A comparison of online and traditional computer application classes. *T.H.E. (Technological Horizons in Education) Journal*, 28(8), 52-58.

Cozens, P., Al-Kaabi, H., & Al-Ali, K. (2005). Discussion boards: Tools for refflection and learning. *Proceeding of the 10th TESOL Arabia Conferece: Standards in English language teaching and assessment*, (Vol. 9). Dubai: TESOL Arabia.

Craig, A., Goold, A., Coldwell, J., & Mustard, J. (2008). Perceptions of roles and responsibilities in online learning: A case study. *Interdisciplinary Journal of E-Learning and Learning Objects*, 4, 205-223.

Crismore, A., Makkanen, R. & Steffensen, M.S. (1993). Metadiscourse in persuasive writing: A study of texts written by American and Finnish university students. *Written Communication*, 10(1), 39-71.

Crookes, G. (1989). Planning and interlanguage variation. *Studies in Second Language*, 11, 367-383.

Crystal, D. (1997). *A dictionary of Linguistics and Phonetics*. Oxford: Blackwell.

Crystal, D. (2001). *Language and the Internet.* Cambridge: Cambridge University Press.

Crystal, D. (2004). *The Language revolution.* Cambridge: Polity.

Cumming, A. (1990). Metalinguistic and ideational thinking in second language composing. *Written Communication,*7,482–511.

Cumming, A., Kantor, R., Baba, K., Erdosy, U. Eouanzoui, K., & James, M. (2005). Differences in written discourse in independent and integrated prototype tasks for next generation TOEFL. *Assessing Writing*, 10(1), 5-43.

Cummins, J., & Sayers, D. (1995).*Brave new schools: Challenging cultural illiteracy.* New York: St. Martin's Press.

Cunningham, U., & Andersson, S. (1999). *Teachers, pupils and the Internet.* Cheltenham U.K.: Stanley Thornes Ltd.

Curtis, D. D., &Lawson, M.J. (2001).Exploring collaborative online learning. *Journal of Asynchronous Learning Networks*, 5(1).

Daley, B. (2002). An exploration of electronic discussion as an adult learning strategy. *PAACE Journal of Lifelong Learning*, 11, 53-66.

Danet, B. (1998). Text as mask: Gender and identity on the Internet. In S. Jones (Ed.), *Cybersociety 2.0* (pp.129-158). Thousand Oaks, CA: Sage.

Danet, B., &Herring, S. C. (2007).*The multilingual Internet: Language, culture, and communication online.* Oxford: Oxford University Press.

Daugherty, M., & Funke, B.L. (1998). University faculty and student perceptions of web-based instruction. *Journal of Distance Education*, 13(1). Retrieved September 9, 2008, from http://cade.athabascau.ca/vol13.1/daugherty.html

Davidson-Shivers, G., Ellis, H., & Amarasing, P. (2010). How do female students participate in online debates? *International Journal on E-Learning*, 9(2), 169.

Davidson-Shivers, G., Morris, S. & Sriwongkol, T. (2003). Gender differences: Are they diminished in on-line discussions? *International Journal on E-Learning*, 2(1), 29-36.

Davidson-Shivers, G., Muilenburg, L., &Tanner, E. (2001). How do students participate in synchronous and asynchronous online discussions? *Journal of Educational Computing Research*, 24(4), 351-366.

Davidson-Shivers, G., Tanner, E., & Muilenburg, L. (2000). Online discussion: How do students participate? *Paper presented at the annual meeting of the American Educational Research Association,* New Orleans, LA.

Davis, B., & Brewer, J. P. (1997). *Electronic discourse: Linguistic individuals in virtual space*. Albany, NY: State University of New York Press.

Davis, B., & Thiede, R. (2000). Writing into change: Style shifting in asynchronous electronic discourse. In M. Warschauer & R. Kern (Eds.), *Network-based language teaching: Concepts and practices* (pp.87-120). Cambridge: Cambridge University Press.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319-340.

De Laat, M., & Lally, V. (2004). It's not easy: Researching the complexity of emergent participant roles and awareness in asynchronous networked learning discussions. *Journal of Computer Assisted Leaning*, 20, 165-171.

DiGiovanni, E., & Nagaswami, G. (2001). Online peer review: An alternative to face-to-face?*ELT Journal*, 53, 263–272.

Donato, R. (1994). Collective scaffolding in second language learning. In J. P. Lantolf & G. Appel (Eds.), *Vygotskyan Approaches to Second Language Research*. Norwood NJ: Ablex Publishing Corporation.

Dornyei, Z. (2007). *Research methods in applied linguistics: quantitative, qualitative, and mixed methodologies*. Oxford: Oxford University Press.

Doucette, D. (1994). Transforming teaching and learning using information technology: A report from the field. *Community College Journal*, 65, 18-24.

Driver, M. (2002). Exploring student perceptions of group interaction and class satisfaction in the web-enhanced classroom. *The Internet and Higher Education*, 5(1), 35-45.

Duffy, K.A. (2000). *A descriptive analysis of the role of the internet, information and communications technology and related issues in the context of teaching English as a second language.*(MED thesis, University of Sheffield).

Duffy, T., & Cunningham, D. (1996). Constructivism: Implications for the design and delivery of instruction. In D. H. Jonassen (Ed.), *Handbook of research for*

educational communications and technology (pp.170-198). New York: Simon and Schuster Macmillian.

Egbert, J., & Hanson-Smith, E. (Eds.) (1999). *CALL environments: Research, practice, and critical issues*. Alexandria, VA: Teachers of English to Speakers of Other Languages.

Elbow, P. (1991). Reflections on academic discourse: How it relates to freshmen and colleagues. *College English*, 53(2), 135-155.

Ellis, R. (1997). *SLA research and language teaching*. Oxford: Oxford University Press.

Ellis, R., & Barkhuizen, G. (2005).*Analysing learner language*. Oxford: Oxford University Press.

Ellis, R., & Fotos, S. (1999). *Learning a second language through interaction*. USA: John Benjamins.

Ellis, R., & Schmidt, R. (1998).Rules or associations in the acquisition of morphology? The frequency by regularity interaction in human and PDP learning of morphosyntax. *Language and Cognitive Processes*, 13(2-3).

Elola, I., & Oskoz, A. (2010). Collaborative writing: Fostering foreign language and writing conventions development. *Language Learning & Technology*, 14(3), 51-71.

Engber, C.A. (1995). The relationship of lexical proficiency to the quality of ESL compositions. *Journal of Second Language Writing*, 4(2), 139-55.

Espinosa, S.M. (2005). Can P_Lex accurately measure lexical richness in the written production of young learners of EFL? *Porta Linguarum*, 4, 7-22.

Fahy, P., Crawford, G., Ally, M., Cookson, P., Kellar, V., & Prosser, F.(1999). *The development and testing of a computer conferencing transcript analysis tool.*(Unpublished Manuscript).

Faigley, L. (1992). *Fragments of rationality: Postmodernity and the subject of composition.* Pittsburgh, PA: University of Pittsburgh Press.

Fairclough, N. *(*1995*). Critical discourse analysis: The critical study of language. Harlow: Longman.*

Fairclough, N. (2003). *Analysing discourse: Textual analysis for social research*. New York: Routledge.

Farhady, H. (1982). Measures of language proficiency from the learners' perspective. *TESOL Quarterly*, 16(1), 43-59.

Feenberg, A. (1999). *Questioning technology*. London: Routledge.

Feenberg, A. (2001). The changing debate over online education. *AFT On Campus*, p. 12.

Felix, U. (2005). What do meta-analyses tell us about CALL effectiveness? *ReCALL*, 17(2), 269-288.

Ferguson, C. (1972). *Language structure and language use*. Stanford, CA: Stanford University Press.

Ferguson, C. (1994). Dialect, register, and genre: Working assumptions about conventionalization. In D. Biber & E. Finegan (Eds.), *Sociolinguistic perspectives on register* (pp. 15–30). Oxford: Oxford University Press.

Ferrara, K., Brunner, H. & Whittemore, G. (1991). Interactive written discourse as an emergent register. *Written Communication,* 8, 8-34.

Ferris, D. R. (2003).*Response to student writing: Implications for second language students*. Mahwah, NJ: Lawrence Erlbaum Associates.

Ferris, P. (1997). Writing in cyberspace. *Computer Mediated Communication Magazine*, 4(6).

Field, J. (2004). *Psycholinguistics: The key concepts*. London: Routledge.

Field, J. (2005). Second language writing: A language problem or a writing problem? *Paper presented at IATEFL Research SIG 'Writing Revisited' conference*, Cambridge, 25-27 February 2005.

Fishman, B.J. (1999). Characteristics of students related to computer-mediated communication activity. *Journal of Research on Computing in Education*, 32, 73-97.

Fitze, M. (2006). Discourse and participation in ESL face-to-face and written electronic discussions. *Language Learning and Technology*, 10(1), 67-87

Fjermestad, J., Hiltz, S. R., & Y. Zhang (2005). Effectiveness for students: comparisons of "in-seat" and ALN courses. In S. R. Hiltz & R. Goldman (Eds.), *Learning together online: Research on asynchronous learning networks* (pp.39-80). Mahwah, NJ: Erlbaum.

Flottum, K., Dahl, T.G., & Kinn, T. (2006). *Academic voices: across languages and disciplines*. Amsterdam: John Benjamins Publishing.

Flower, L., & Hayes, J. (1980). The cognition of discovery: Defining a rhetorical problem. *College Composition and Communication*, 31, 21-32.

Flynn, T., & Polin, L. (2003). *Making sense of online learning: Frames, rubrics, tools and coding systems for analyzing asynchronous online discourse*. Paper presented at

AERA, Chicago, April, 2003. Retrieved December 29, 2008, from http://lrs.ed.uiuc.edu/aera/03/communities/Making-Sense-of-Online-Lear.pdf

Foster, P., & Skehan, P. (1996). The influence of planning time and task type on second language performance. *Studies in Second Language Acquisition*, 18, 299–323.

Foster, P., Tonkin, A., & Wigglesworth, G. (2000). Measuring spoken language: A unit for all reasons. *Applied Linguistics*, 21, 354–375.

Fowler, R., &Kress, G. (1979). Rules and regulations. In R. Fowler, B. Hodge, G. Kress, & T. Trew (Eds.), *Language and Control*. London: Routledge and Kegan.

Fox, B.A. (1987). *Discourse structures and anaphora: Written and conversational English*. Cambridge: Cambridge University Press.

Frantzen, D. (1995). The effects of grammar supplementation on written accuracy in an intermediate Spanish content course. *Modern Language Journal*, **79,** 329–344.

Fraser, B. (1999). What are discourse markers? *Journal of Pragmatics*, 31,931-952.

Fulford, C.P., & Zhang, S. (1993). Perceptions of interaction: the critical predictor in distance education. *American Journal of Distance Education,* 7(3), 8–21.

Gaddis, B., Napierkowski, H. Guzman, N., & Muth, R. (2000). A comparison of collaborative learning and audience awareness on two computer-mediated writing environments. *Annual proceedings of selected research and development papers presented at the 23rd National Convention of the Association for Educational Communications and Technology* (Vol. 1-2), Denver, CO. (ERIC Document Reproduction Service No. ED455771).

Gaies, S.J. (1980). T-unit analysis in second language research: Applications, problems and limitations. *TESOL Quarterly*, 14, 53–60.

Gains, J. (1999). Electronic mail: A new style of communication or just a new medium? An investigation into the text features of E-mail. *English for Specific Purposes*, 18(1), 81-101.

Garcia-Carbonell, A., Gotor, A., Montero, B., Rising, B., & Watts, F. (2001a). Oral presentation assessment of simulation portfolios. In E. Musci (Ed.), *On the edge of the Millennium: A new foundation for gaming simulation* (pp.23-30). Bari: B.A. Graphics.

Garcia-Carbonell, A., Rising, B., Montero, B., & Watts, F. (2001b). Simulation/gaming and the acquisition of communicative competence in another language. *Simulation and Gaming: An Interdisciplinary Journal of Theory, Practice and Research*, 4, 481-491.

Garton, A., & Pratt, C. (1998).*Learning to be literate: The development of spoken and written language*. Malden, MA: Blackwell Publishing.

Gilbert, P., &Dabbagh, N. (2005). How to structure online discussions for meaningful discourse: A case study. *British Journal of Educational Technology*, 36 (1), 5-18.

Giles, H., & Powesland, P.F. (1975). *Speech style and social evaluation*. London and New York: Academic Press.

Giles, H., Coupland, J., & Coupland, C. (1991). *Contexts of accommodation: developments in applied sociolinguistics*. Cambridge: Cambridge University Press.

Gillett, A. (2009). *Using English for Academic Purposes*. Retrieved April 3, 2008, from http://www.uefap.com

Gilligan, C. (1993). *In a different voice: Psychological theory and women's development*. MA: Harvard University Press.

Gonzalez-Bueno, M. (1998). The effects of electronic mail on Spanish L2 discourse. *Language Learning and Technology,* 1(2), 55-70.

Grabe, W. (2001). Notes towards a theory of second language writing. In Ti. Silva & P. Matsuda (Eds.), *On second language writing* (pp.39-57). Mahwah, NJ: Laurence Erlbaum Associates.

Grabe, W., & Kaplan, R. (1996). *Theory and practice of writing: An Applied Linguistic perspective.* New York: Longman.

Graddol, D., &Swann, J. (1989). *Gender voices*. London: Basil Blackwell.

Granger, S., & Petch-Tyson, S. (1996). Connector usage in the English essay writing of native and non-native EFL speakers of English. *World Englishes,* 15(1), 17–27.

Gunawardena, C., & Zittle, R. (1997). Social presence as a predictor of satisfaction within a computer-mediated conferencing environment. *American Journal of Distance Education*, 11(3), 8-26.

Halliday, M.A.K. (1978). *Language as social semiotic: The social interpretation of language and meaning*. Baltimore, EUA: University Park. Retrieved July 25, 2009, from http://148.201.96.14/dc/ver.aspx?ns=000118840

Halliday, M.A.K. (1985). *An introduction to functional grammar*. London: Edward Arnold.

Halliday, M.A.K. (1989). *Spoken and written language*. Oxford: Oxford University Press.

Halliday, M.A.K. (1992). Language as system and language as instance: The corpus as a theoretical construct. In J. Svartvik (Ed.), *Proceedings of Nobel Symposium 82 on*

Directions in corpus linguistics, Stokholm, 4–8 August 1991, (pp. 61–77). Berlin: Mouton de Gruyter.

Halliday, M.A.K., & Hasan, R. (1976). *Cohesion in English*. London: Longman.

Hammond, M. (1998). Learning through on-line discussion: what are the opportunities for professional development and what are the characteristics of on-line writing. *Journal of Information Technology for Teacher Education*, 7(3), 331-348.

Hammond, M. (2000). Communication within on-line forums: The opportunities, the constraints and value of communicative approach. *Computers and Education*, 25, 251-262.

Hamp-Lyons, L., & Henning, G. (1991). Communicative writing profiles: An investigation of the transferability of a multiple-trait scoring instrument across ESL writing assessment contexts. *Language Learning,* 41, 337–373.

Hara, N., & Kling, R. (2000). Students' distress with a web-based distance education course: An ethnographic study of participants' experiences. *Information, Communication and Society*, 3(4), 557-579.

Harasim, L. (1987). Computer-mediated cooperation in education: Group learning networks. *Proceedings of the Second Guelph Symposium on Computer Conferencing.* Guelph, Ontario: University of Guelph.

Harasim, L. (1990*). On-line education: Perspectives on a new environment*. New York: Praeger.

Harasim, L. (2000). Shift happens: Online education as a new paradigm for learning. *Internet and Higher Education*, 3(1-2), 41-61.

Harrington, H., & Hathaway, R. (1998). Computer conferencing, critical reflection, and teacher development. *Teaching and Teacher Education,* 10(5), 543-554.

Hartman, J., & Truman-Davis, B. (2000). Factors relating to the satisfaction of faculty teaching online courses at UCF. *Proceedings of the Workshop 2000 on Asynchronous Learning Networks*. Retrieved April 16, 2009 from http://www.scole.olin-babson.org

Hartman, J., Dziuban, C., & Moskal, P. (2000). Faculty satisfaction in ALNs: A dependent or independent variable. *Journal of Asynchronous Learning Networks*, 4(3), 151-172.

Hawisher, G.E., & Moran, C. (1993). Electronic mail and the writing instructor. *College English*, 55(6), 627-643.

Hayes J.R. (1996). A new framework for understanding cognition and affect in writing. In C.M. Levy & S. Ransdell (Eds.), *The science of writing: Theories, methods, individual differences and applications* (pp.3-27). Hillsdale, NJ, England: Lawrence Erlbaum Associates, Inc.

Healey, D. (1999). Theory and research: Autonomy in language learning. In J. Egbert & E. Hanson-Smith (Eds.), *CALL environments: Research, practice, and critical issues* (pp.391-402). Arlington, VA: TESOL Inc.

Henri, R. (1992). Computer conferencing and content analysis. In A.R. Kaye (Ed.), *Collaborative learning through computer conferencing* (pp.117-136). Berlin, Germany: Springer-Verlag.

Henry, K. (1996). Early L2 writing development: A study of autobiographical essays by university-level students of Russian. *The Modern Language Journal*, 80, 309–326.

Herring, S.C. (1992).*Gender and participation in computer-mediated linguistic discourse.* ERIC Document Reproduction Service No. ED 345553.

Herring, S.C. (Ed.). (1996). *Computer mediated communication: Linguistic, social and cross-cultural perspectives.* Amsterdam: John Benjamins.

Herring, S.C. (1999). Interactional coherence in CMC. *Journal of Computer-Mediated Communication*, 4(4).

Herring, S.C. (2001). Computer-mediated discourse. In D. Schiffrin, D. Tannen, & H. Hamilton (Eds.), *The handbook of discourse analysis* (pp. 612-634). Oxford: Blackwell.

Herring, S.C. (2003). Gender and power in on-line communication. In J. Holmes & M. Meyerhoff, (Eds.), *The handbook of language and gender* (pp. 202-228). Oxford: Blackwell.

Herring, S.C. (2007). A faceted classification scheme for computer-mediated discourse. *Language@Internet.* Retrieved November 11, 2008, from http://www.languageatinternet.de/articles/761

Hewings, A., & Coffin, C. (2006). Formative interaction in electronic written exchanges: Fostering feedback dialogue. In K. Hyland & F. Hyland (Eds.), *Feedback in second language writing: Contexts and issues* (pp. 225-245). Cambridge: Cambridge University Press.

Hewitt, J. (2000). Sustaining online interactions in a knowledge forum classroom. *Paper presented at the annual meeting of the American Educational Research Association,* New Orleans.

Hiatt, M. (1977). *The way women write. New York: Teachers College Press.*

Hill, J.R., Wiley, D., Nelson, L.M., & Han, S. (2004). Exploring research on internet-based learning: from infrastructure to interactions. In D.H. Jonassen (Ed.). *Handbook of research on educational communications and technology* (pp.433-460). Mahwah, NJ: Erlbaum.

Hiltz, S.R. (1988). Productivity enhancement from computer-mediated communication: a systems contingency approach. *Communications of the ACM,* 31, 1438-1454.

Hiltz, S.R. (1994). *The virtual classroom: Learning without limits via computer networks.* Norwood, NJ: Ablex Publishing Corporation.

Hiltz, S.R. (1997). Impacts of college-level courses via asynchronous learning networks: Some Preliminary results. *Journal of Asynchronous Learning Networks,* 1(2).Retrieved January 15, 2009, from http://www.aln.org/alnweb

Hiltz, S.R. (1998). Collaborative learning in asynchronous learning environments: Building learning communities. *Paper presented at the WebNet 98 World Conference of the WWW, Internet and Intranet Proceedings, Orlando, Florida.*

Hiltz, S.R., & Goldman, R. (Eds.) (2005). Learning together online: research on asynchronous learning networks. Mahwah, NJ: Lawrence Erlbaum.

Hiltz, S.R., & Turoff, M. (1978). *The network nation: Human communication via computer.* Norwood, NJ: Ablex.

Hiltz, S.R. & Wellman, B. (1997). Asynchronous learning networks as a virtual classroom. *Communications of the ACM,* 40(9), 44-49.

Hiltz, S.R., Johnson, K., & Turoff, M. (1986). Experiments in group decision making: communication process and outcome in face-to-face versus computerized conferences. *Human Communication Research,* 13, 225-252.

Hiltz, S.R., Zhang, Y., & Turoff, M. (2002). Studies of effectiveness of learning networks. *Elements of Quality Online Education, Sloan-C™ Series,* 3. Needham, MA: SCOLE.

Hinkel, W. (2003). Simplicity without elegance: Features of sentences in L1 and L2 academic texts. *TESOL Quarterly,* 37(2), 275-301.

Hirano, K. (1991). The effect of audience on the efficacy of objective measures of EFL proficiency in Japanese university students. *Annual Review of English Language Education in Japan,* 2, 21–30.

Hirata, Y., & Hirata, Y. (2008). Japanese students' attitudes towards hybrid learning. *Hybrid learning and education, Lecture Notes in Computer Science,* 5169, 439-449.

Hoey, M. (2001). *Textual interaction: An introduction to written discourse analysis*. London: Routledge.

Holliday, L. (1999).Theory and research: Input, interaction, and CALL. In J. Egbert & E. Hanson-Smith (Eds.), *CALL environments: Research, practice, and critical issues* (pp. 181-188). Arlington, VA: TESOL Inc.

Horwitz, E.K., & Young D.J. (1991). *Language anxiety: from theory and research to classroom implications*. Englewood Cliffs, NJ: Prentice Hall.

Huang, N., & Lee, D. (2004). A discourse analysis of asynchronous discussion board on students' critical thinking. In G. Richards (Ed.), *Proceedings of World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education 2004* (pp. 708-713). Chesapeake, VA: AACE.

Hunt, K. W. (1965). *Grammatical structures written at three grade levels (Research Report No. 3)*. Urbana, IL: National Council of Teachers of English.

Hyland, K. (1994). Hedging in academic writing and EAP textbooks. *English for Specific Purposes*, 13, 239–256.

Hyland, K. (2001). Humble servants of the discipline? Self-mention in research articles. *English for Specific Purposes*, 20(3), 207-226.

Hyland, K. (2002). *Teaching and researching writing*. London: Pearson Education.

Hyland, K. (2003). *Second language writing*. Cambridge University Press, Cambridge.

Hyland, K. (2005). *Metadiscourse*. London: Continuum.

Im, Y., & Lee, O. (2003). Pedagogical implications of online discussions for preservice teacher training. *Journal of Research on Technology in Education*, 36(2), 155-170.

Irvine, S.E. (2000). *What are we talking about? The impact of computer-mediated communication on student learning*. In D. Willis *et al.* (Eds.), *Proceedings of Society for Information Technology & Teacher Education International Conference 2000* (pp.354-358). Chesapeake, VA: AACE.

Irvine, S.E., Hein, T.L., & Laughlin, D. (1999). Different degrees of distance: The impact of the technology-based instructional environment on student learning. *Paper presented at 29th Annual Frontiers in Education Conference, 1999 (San Juan, Puerto Rico)*, 3, 13C3/7-13C311.

Ishikawa, S. (1995). Objective measurement of low-proficiency EFL narrative writing. *Journal of Second Language Writing*, 4, 51–69.

Ivanič, R. (1998). *Writing and identity: The discoursal construction of identity in academic writing*. Amsterdam: Benjamins.

Ivanič, R., & Camps, D. (2001). I am how I sound: Voice as self-representation in L2 writing. *Journal of Second Language Writing,* 10, 3–33.

Jafee, D. (1997). Asynchronous learning: Technology and pedagogical strategy in a distance learning course. *Teaching Sociology*, 25(4), 262-277.

Jeong, A. (2007). The effects of intellectual openness and gender on critical thinking processes in computer-mediated collaborative argumentation. *Journal of Distance Education*, 22(1), 1-18.

Johnson, G. (2007). Restricted versus unrestricted learning: Synthesis of recent meta-analyses. *AACE Journal*, 15(3), 267-278.

Johnson, G. (2008). The relative learning benefits of synchronous and asynchronous text-based discussion. *British Journal of Educational Technology*, 39(1), 166-169.

Johnston, B. (1999a). Theory and research: Audience, language use, and language learning. In J. Egbert & E. Hanson-Smith (Eds.), *CALL environments: Research, practice, and critical issues* (pp.55-64). Arlington, VA: TESOL Inc.

Johnston, B. (1999b). Theory and research: Classroom atmosphere. In J. Egbert & E. Hanson-Smith (Eds.), *CALL environments: Research, practice, and critical issues* (pp.331-345). Arlington, VA: TESOL Inc.

Johnstone, B. (1996). *The linguistic individual: Self-expression in language and linguistics*. Oxford: Oxford University Press.

Jonassen, D. (1994). *Operationalizing mental models: Strategies for assessing mental models to support meaningful learning and design – supportive learning environments*. Retrieved December 7, 2009, from http://www-csc195.indiana.edu/csc195/jonassen.html

Jonassen, D., Davidson, M., Collins, A., Campbell, J., & Bannan-Haag, B. (1995). Constructivism and computer-mediated communication in distance education. *The American Journal of Distance Education*, 9(2), 7-26.

Jones, C. S., & Tetro, J. (1987). Composing in a second language. In A. Matsuhashi (Ed.), *Writing in real time: Modelling the production processes* (pp.34–57). Norwood, New Jersey: ABLEX.

Jor, G. (1995). Web Newsletter '95: A Collaborative learning project for technical writing instruction. In Warschauer, M. (Ed.), *Virtual connections: Online activities and projects for networking language learners* (pp.368-373). Honolulu, HI: University of Hawai'i, Second Language Teaching and Curriculum Centre.

Jung, I., & Suzuki, K. (2006). Blended learning in Japan and its application in liberal arts education. In C. Bonk & C. Graham (Eds.), *The handbook of blended learning*, (pp.267-280). San Francisco: John Wiley and Pfeiffer.

Kameen, P.T. (1979). Syntactic skill and ESL writing quality. In K. Perkins, & J. Schachter (Eds.), *On TESOL 79: The Learner in Focus,* (pp. 343–350). *Washington, D.C.: TESOL.*

Kamhi-Stein, L.D. (2000a). Adapting US-based TESOL education to meet the needs of nonnative English speakers. *TESOL Journal*, 9(3), 10-14.

Kamhi-Stein, L.D. (2000b). Looking to the future of TESOL teacher education: Web-based bulletin board discussions in a methods course. *TESOL Quarterly*, 34(3), 423-455.

Kantor, K.J., & Rubin, D.L. (1981). Between speaking and writing: Processes of differentiation. In B.M. Kroll& R.J. Vann (Eds.), *Exploring speaking- writing relationships*. Urbana, IL: National Council of Teachers of English.

Kasper, L. (2000). New technologies, new literacies: Focus discipline research and ESL learning communities. *Language Learning and Technology Journal*, 4(2), 105-128.

Kay, P. (1977). Language evaluation and speech style. In B.G. Blount & M. Sanches (Eds.), *Sociocultural dimensions of language change* (pp.21-33). New York: Academic Press.

Kaye, A. (1989). Computer-mediated communication and distance education. In R. Mason, & A. Kaye (Eds.), *Mindweave: Communication, computers, and distance education* (pp.3-21). Oxford: Pergamon Press.

Kelm, O. (1992). The use of synchronous computer networks in second language instruction: A preliminary report. *Foreign Language Annuals,* 25(5), 441-454.

Kepner, C.G. (1991). An experiment in the relationship of types of written feedback to the development of second-language writing skills. *The Modern Language Journal*, 75: 305–313.

Kern, R. (1995a). Decouvrir Berkeley: Students' representations of their world on the World Wide Web. In M. Warschauer (Ed.), *Virtual connections: Online activities and projects for networking language learners* (pp.355-356). Honolulu, HI: University of Hawai'i, Second Language Teaching and Curriculum Centre.

Kern, R. (1995b). Restructuring classroom interaction with networked computers: Effects on quantity and characteristics of language production. *The Modern Language Journal,* 79(iv), 457-476.

Kern, R. (2000). *Literacy and language teaching.* Oxford: Oxford University Press.

Kern, R., & Warschauer, M. (2000). Theory and practice of network-based language teaching. In M. Warschauer & R. Kern (Eds.),*Network-based language teaching: Concepts and practice* (pp.1-19).Cambridge: Cambridge University Press.

Key, M.R. (1975). *Male/female language.* Metuchen, New Jersey: The Scarecrow Press.

Kim, J., & Beal C. (2006). Turning quantity into quality: Supporting automatic assessment of on-line discussion contributions. *AERA (American Educational Research Association) Annual meeting.*

Kim, J., Chern, G., Feng, D., Shaw, E., & Hovy, E. (2006). Mining and assessing discussions on the web through speech act analysis. *Proceedings of the ISWC'06 Workshop on Web Content Mining with Human Language Technologies*, 2006.

Kirkpatrick, H., & Cuban, L. (1998). Should we be worried? What the research says about gender differences in access, use, attitudes, and achievement with computers. *Educational Technology*, 98, 56-59.

Kitao, S.K & Kitao, K.K. (1996). *Using the Internet for teaching English.* Kyoto, Japan. Retrieved February 12, 2008, from http://ilc2.doshisha.ac.jp/users/KKitao/online/internet/art-use.htm

Klemm, W.R. (2000). What's wrong with online discussions and how to fix it. *Proceedings of the WebNet 2000 World Conference on the World Wide Web and Internet*, San Antonio, TX.(ERIC Document Reproduction No. ED448755).

Kobayashi H., & Rinnert, C. (1992). Effects of first language on second language writing: Translation versus direct composition. *Language Learning*, 42, 183 215.

Kol, S., & Schcolnik, M. (2008). Asynchronous forums in EAP: Assessment issues. *Language Learning & Technology,* 12(2), 49–70.

Kramer, A., Oh, L., & Fussell, S. (2006). Using linguistic features to measure presence in computer-mediated communication. In *Proceedings of the SIGCHI conference on Human Factors in Computing Systems* (pp. 913-916). New York: ACM Press.

Kramsch, C., & Thorne, S. (2002). Foreign language learning as global communicative practice. In D. Block, & D. Cameron (Eds.), *Globalization and language teaching* (pp.83-100). London: Routledge.

Krashen, S. (1982). *Principles and practice in second language acquisition.* Oxford: Pergamon Press.

Krauthamer, H. (2000). How can we assess computer-assisted reading and writing instruction? *Paper presented at the Annual Meeting of the National Writing Centers Association*. Baltimore, MD, November 2-4, 2000.

Kroll, B. (1981). Developmental relationships between speaking and writing. In B. Kroll & R.J. Vann (Eds.), *Exploring speaking-writing relationships: Connections and contrasts* (pp. 32-54). Urbana, Ill.: National Council of Teachers of English.

Kroll, B. (1990). What does time buy? ESL student performance on home versus class compositions. In B. Kroll (Ed.), *Second language writing: Research insights for the classroom* (pp.140–154). Cambridge: Cambridge University Press.

Kroll, B. (2003). *Exploring the dynamics of second language writing*. New York: Cambridge University Press.

Kuiken, F., & Vedder, I. (2002). Collaborative writing in L2: the effect of group interaction on text quality. New directions for research in L2 writing. *Studies in Writing*, 11, 169-188.

Kuiken, F., & Vedder, I. (2007). Task complexity and measures of linguistic performance in L2 writing. *International Review of Applied Linguistics in Language Teaching,* 45(3), 261-84.

Kumar, S. (2005). Student knowledge construction during asynchronous online discussions in a face to face course. In *EDMEDIA '2005, World Conference on Educational Multimedia, Hypermedia and Telecommunications 2005*.

Kumari, D.S. (2001). Connecting graduate students to virtual guests through asynchronous discussions - Analysis of an experience. *JALN*, 5(2), 53-63.

Lafer, S. (1996). Audience, the computer, and the development of writing ability. *Computers in the Schools,* 12(5), 141-152.

Lamy, M-N., & Goodfellow, R. (1999). Reflective conversation in the virtual language classroom. *Language Learning and Technology,* 2(2), 43-61.

Lamy, M-N., & Hampel, R. (2007). *Online communication in language learning and teaching*. Basingstoke: Palgrave MacMillan.

Lapadat, J.C. (2000). Teaching online: Breaking new ground in collaborative thinking. *Paper presented at the 28th annual conference of the Canadian Society for the Study of Education Congress of the Social Sciences and Humanities, Edmonton, Alberta, Canada*. (ERIC Document Reproduction No. ED443420).

Lapadat, J.C. (2002). Written interaction: A key component in online learning. *Journal of Computer-Mediated Communication*, 7(4). Retrieved December 4, 2010, from http://www.ascusc.org/jcmc/vol7/issue4/lapadat.html

Larsen-Freeman, D. (1983). Assessing global second language proficiency. In H.W. Seliger & M. Long (Eds.), *Classroom-oriented research in second language acquisition* (pp. 287–305). Rowley, MA: Newbury House.

Laufer, B. (1994). The lexical profile of second language writing: does it change over time? *RELC Journal,* 25, 21–33.

Laufer, B., & Nation, P. (1995). Vocabulary size: lexical richness in L2 written production. *Applied Linguistics*, 16, 307-322.

Laufer, B., Elder, C., Hill, K., & Congdon, P. (2004). Size and strength: Do we need both to measure vocabulary and knowledge? *Language Testing*, 21, 202-226.

Lee, L. (2009). Exploring native and nonnative interactive discourse in text-based chat beyond classroom settings. In L.B. Abraham & L.F. Williams (Eds.), *Electronic discourse in language learning and language teaching* (pp. 127-150). Amsterdam: John Benjamins Publishing.

Lennon, P. (1991). Error: Some problems of definition, identification, and distinction. *Applied Linguistics,* 12(2), 180-196.

Leveson, N. G. (1997). Educational pipeline issues for women. *A panel presentation for the CRA Snowbird Meeting on educational pipeline issues for women*. Retrieved October 4, 2009, from http://www.Ai.Mit.Edu/People/Ellens/Gender/Pipeline.html

Levin, B.B., He, Y., & Robbins, H.H. (2006). Comparative analysis of preservice teachers' reflective thinking in synchronous versus asynchronous online case discussions. *Journal of Technology and Teacher Education,* 14(3), 439-460.

Levy, M. (1997). *Computer-assisted language learning: context and conceptualization.* Oxford: Clarendon.

Li, Y., & Huang, R. (2008). Analyzing peer interactions in computer-supported collaborative learning: model, method and tool. In J. Fong, R. Kwan & F.L. Wong (Eds.), *ICHL 2008: Hybrid Learning and Education, LNCS 5169* (pp.125-136). Berlin: Springer-Verlag.

Liao, Y.K. (1992). Effects of computer-assisted instruction on cognitive outcomes: A meta-analysis. *Journal of Research on Computing and Education*, 24, 367–380.

Liaw, S. (2008). Investigating students' perceived satisfaction, behavioral intention, and effectiveness of e-learning: A case study of the Blackboard system. *Computers and Education,* 51, 864–873.

Lim, C.P., & Chai, C. S. (2004). An activity theoretical approach to research of ICT integration in Singapore schools: Orienting activities and learner autonomy. *Computers and Education*, 43(1), 215-236.

Lim, R., Lee, M., & Yin, C. (2009). Teacher usage and perceptions of online discussion forums in higher education. *Proceedings of the 2nd International Conference of Teaching and Learning (ICTL 2009)*, INTI University College, Malaysia.

Lin, S.Y., & Overbaugh, R.C. (2007). The effect of student choice of online discussion format on tiered achievement and student satisfaction. *Journal of Research on Technology in Education,* 39(4), 399-415.

Lipponen, L., Rahikainen, M., Lallimo, J. & Hakkarainen, K. (2003). Patterns of participation and discourse in elementary students' computer-supported collaborative learning. *Learning and Instruction,* 13(5), 487–509.

Litwin, M. S. (1995). *How to measure survey reliability and validity.*USA: Sage Publications.

Liu, M., Moore, Z., Graham, L., & Lee, S. (2002). A look at the research on computer-based technology use in second language learning: A review of the literature from 1990 – 2000.*Journal of Research on Technology in Education*, 34(3), 250-273.

Logan, R. (1995). *The fifth language: Learning and living in the Computer Age.* Toronto: Stoddart.

Long, M. (1980). *Input, interaction, and second language acquisition.* (Unpublished doctoral dissertation: University of California at Los Angeles).

Long, M. (1996). The role of linguistic environment in second language acquisition. In W.C. Ritchie & T.K. Bhatia (Eds.), *Handbook of language acquisition*: *Second language acquisition* (pp.413-468). New York: Academic.

Lundstrom, K., & Baker, W. (2009). To give is better than to receive: The benefits of peer review to the reviewer's own writing. *Journal of Second Language Writing*, 18(1), 30-43.

Luo, L.Y. (2005). *A Systematic functional perspective on native and non-native English speaking students' online discourse.* (Unpublished PhD thesis, University of British Columbia).

Mabrito, M. (2000). *Facilitating and evaluating student interaction in an online business writing course*. Retrieved March 21, 2009, from http://as1.ipfw.edu/2000tohe/papers/mabrito.htm

Mallinen, S. (2001). Teacher effectiveness and online learning. In J. Stephenson (Ed.), *Teaching and learning online: Pedagogies for new technologies* (pp. 139-149). Sterling, VA: Stylus.

Malvern, D., Richards, B.J., Chipere, N., & Durán, P. (2004). *Lexical diversity and language development: Quantification and assessment*. Basingstoke, England: Palgrave.

Marra, R.M., Moore, J.L., & Klimczak, A.K. (2004). Content analysis of discussion forums: a comparative analysis of protocols. *Educational Technology Research and Development*, 52(2), 23-40.

Matsuda, P. (2001). Re-examining audiolingualism: On the genesis of reading and writing in L2 studies. In D. Belcher & A. Hirvela (Eds.), *Linking literacies: Perspectives on L2 reading-writing connections* (pp. 84–105). Ann Arbor: University of Michigan Press.

Matsuda, P. (2003). Process and post-process. *Journal of Second Language Writing*, 12(1), 65-83.

Mauriello, N. (2000). *The college peer writing project*. (Unpublished PhD thesis, Indiana University of Pennsylvania).

McCarthy, M., & Carter, D. (1994). *Language as discourse: Perspectives for language teaching*. London: Longman.

McDonald, J. (1998). Interpersonal group dynamics and development in computer conferencing: The rest of the story. *Wisconsin Distance Education Proceedings Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans*. Retrieved August 16, 2009, from http://www.mrc.gc.ca/publications/publications.html

McKay, S. L. (2005). *Researching second language classrooms*. Mahwah, N.J. and London: Lawrence Erlbaum.

McKinnon, J. (1984). Reliability and validity in field research: Some strategies and tactics. *Accounting, Auditing and Accountability*, 1(1), 34-54.

McLoughlin, C., & Luca, J. (2000). A learner-centred approach to developing team skills through web-based learning and assessment. *British Journal of Educational Technology* 33(5), 571-582.

Meara, P., & Bell, H. (2001). P_Lex: A simple and effective way of describing the lexical characteristics of short L2 texts. *Prospect: An Australian Journal of TESOL*, 16(3), 5-19.

Meara, P. (2001). *P_Lex (Version 1.1)*. Swansea.

Mehnert, U. (1998). The effects of different lengths of time for planning on second language performance. *Studies in Second Language Acquisition*, 20, 83-108.

Mercer, N. (2000).*Words and minds: How we use language to think together*. London: Routledge.

Merron, J. (1998). *Managing a web based literature course for undergraduates*. Retrieved September 20, 2008, from www.westga.edu/~distance/merron14.html.

Meunier, L.E. (1998). Personality and motivational factors in computer-mediated foreign language communication. In J.A. Muyskens (Ed.), *New ways of learning and teaching: Focus on technology and FL education* (pp.145-197). Boston: Heinle and Heinle.

Meyer, K.A. (2003). Face to face versus threaded discussions: The role of time and higher-order thinking. *Journal of Asynchronous Learning Networks*, 7(3), 55–65.Retrieved December 20, 2007, from http://www.sloan-c.org/publications/jaln/v7n3/pdf/v7n3_meyer.pdf.

Ministry of Education Official Website (Kingdom of Bahrain). Retrieved February 2, 2008, from http://www.education.gov.bh/news/index.asp?hNewsId=108

Montero, B., Watts, F., & García-Carbonell, A. (2007). Discussion forum interactions: Text and context. *System*, 35(4), 566-582.

Moore, A. (2009). *Transcribing spoken data*. Retrieved April 3, 2009, fromhttp://www.teachit.co.uk/amoore/lang/speech.htm

Moore, M., & Anderson, W. (2004). Handbook of distance education. London: Routledge.

Mubarak, M. (2003). *Common writing errors*. (Unpublished MA thesis, University of Bahrain).

Muirhead, B., & Juwah, C. (2004). Interactivity in computer-mediated college and university education: A recent review of the literature. *Educational Technology & Society*, 7 (1), 12-20.

Murphy, E. (2004). Recognising and promoting collaboration in an online asynchronous discussion. *British Journal of Educational Technology*, 3(4), 421-431.

Murray, D.E. (1988). Computer-mediated communication: Implications for ESP. *English for Specific Purposes,* 7, 3-18.

Murray, D.E. (2000). Protean communication: The language of computer-mediated communication. *TESOL Quarterly*, 34(3), 397-421.

Myers-Scotton, C. (2006). *Multiple Voices: Introduction to bilingualism.* Oxford, U.K.: Blackwell Publishers.

Nation, P. (2001). *Learning vocabulary in another language.* Cambridge, England: Cambridge University Press.

Nation, R. (2009). The differential effects of three types of task planning on the fluency, complexity, and accuracy in L2 oral production. *Applied Linguistics*, 30(4), 474-509.

Negretti, R. (1999). Web-based activities and SLA: A conversation analysis research approach. *Language Learning and Technology,* 3(1), 75-87.

North, S. (2007). The voices, the voices: Creativity in online conversation. *Applied Linguistics*, 28(4), 538-555.

Nuldén, U. (1999). Thematic modules in an asynchronous learning network: A Scandinavian perspective on the design of introductory courses. *Group Decision and Negotiation*, 8(5), 391-408.

Nystrand, M. (1990). Sharing words: The effects of readers on developing writers. *Written Communication*, 7, 3-24.

Nystrand, M., Wu, L., Gamoran, A., Zeiser, S., & Long, D. (2003). Questions in time: Investigating the structure and dynamics of unfolding classroom discourse. *Discourse Processes*, 35, 135–198.

O'Donnell, R.C. (1974). Syntactic differences between speech and writing. *American Speech*, 49, 102-110.

O'Malley, C. (1995). Designing computer support for collaborative learning. In C. O'Malley (Ed.), *Computer supported collaborative learning* (pp.282-297). Berlin: Springer-Verlag.

O'Malley, J. M., Chamot, A.U., Stewner-Manzanares, G., Kupper, L., & Russo, R.P. (1985). Learning strategy applications with students of English as a second language. *TESOL Quarterly*, 19, 557-84.

Ocker, R.J., & Yaverbaum, G.J. (1999). Asynchronous computer-mediated communication versus face-to-face collaboration: Results on student learning, quality, and satisfaction. *Group Decision and Negotiation,* 8, 427-440.

O'Keefe, D.J., & Sypher, H.E. (1981). Cognitive complexity measures and the relationship of cognitive complexity to communication: A critical review. *Human Communication Research*, 8, 72-92.

Olsen, B., & Lepeintre, S. (1995). Academic argument and e-mail discussion lists. In M. Warschauer (Ed.), *Virtual connections: Online activities and projects for networking language learners* (pp.43-46). Honolulu, HI: University of Hawai'i, Second Language Teaching and Curriculum Centre.

Oppenheim, A. N. (1992). *Questionnaire design, interviewing and attitude measurement*. London: Continuum.

Ortega, L. (1997). Processes and outcomes in networked classroom interaction: defining the research agenda for L2 computer-assisted classroom discussion. *Language Learning and Technology*, 1(1), 82-93.

Ortega, L. (1999). Planning and focus on form in L2 oral performance. *Studies in Second Language Acquisition*, 21, 109–148.

Ortega, L. (2009). *Understanding second language acquisition*. USA: Hodder Education.

Palfreyman, D., & Al-Khalil, M. (2007). A funky language for teenzz to use: Representing Gulf Arabic in Instant Messaging. In B. Danet & S.C. Herring (Eds.), *The multilingual Internet: Language, culture, and communication online* (pp.44-63). Oxford: Oxford University Press.

Parker, M.J. (1999). *Web-based extended learning through discussion forums*. ERIC Document Reproduction Service No. ED444455.

Patterson, P.J. (2001). *Computer assisted language learning: An analysis of discourse produced in computer-assisted and oral class discussions by Spanish learners*. (Unpublished PhD thesis, University of Texas, Austin).

Paulus, T. M., & Phipps, G. (2008). Approaches to case analyses in asynchronous and synchronous environments. *Journal of Computer-Mediated Communication*, 13, 459-484.

Payne, D. (1981). Integrating oral and written business communication. In B.M. Kroll., & R.J. Vann, (Eds.), *Exploring speaking-writing relationships: Connections and contrasts* (pp.185-197). Urbana, Ill.: National Council of Teachers of English.

Pellettieri, J. (2000). Negotiation in cyberspace: The role of chatting in the development of grammatical competence. In M. Warschauer & R. Kern (Eds.), *Network-based*

language teaching: Concepts and practice (pp.59-86). Cambridge: Cambridge University Press.

Pena-Shaef, J., & Nicholls, C. (2004). Analyzing student interactions and meaning construction in Computer Bulletin Board (BBS) discussions. *Computers and Education*, 42, 243-265.

Pena-Shaef, J., Martin, W., & Gray, G. (2001). An epistemological framework for analyzing student interactions in computer-mediated communication environments. *Journal of Interactive Learning Research*, 12(1), 41-68.

Perkins, K. (1980). Using objective methods of attained writing proficiency to discriminate among holistic evaluations. *TESOL Quarterly*, 14, 61-69.

Petrides, L.A. (2002). Web-based technologies for distributed (or distance) learning: Creating learning-centered educational experiences in the higher education classroom. *International Journal of Instructional Media*, 29(1), 69–77.

Picciano, A.G., (2002). Beyond student perceptions: Issues of interaction, presence, and performance in an online course. *JALN*, 6(1), 21-40.

Pique, J., Posteguillo, S., & Andreu, J. V. (2002). Epistemic and deontic modality: A linguistic indicator of disciplinary variation in academic English. *LSP and Professional Communication*, 2(2), 49-65.

Polio, C. (1997). Measures of linguistic accuracy in second language writing research. *Language Learning*, 47, 101–143.

Polio, C., Fleck, C., & Leder, N. (1998). If I only had more time: ESL learners' changes in linguistic accuracy on essay revisions. *Journal of Second Language Writing*, 7(I), 43-68.

Power, T. (2009). *Linguistic features of [spoken] English conversation*. Retrieved April 3, 2009, from http://www.btinternet.com/~ted.power/esl0112.html

Powers, S. & Mitchell, J. (1997). Student perceptions and performance in a virtual classroom environment. *Paper presented at the annual meeting of the American Educational Research Association, Chicago, IL.*

Pratt, E., & Sullivan, N. (1994). Comparison of ESL writers in networked and regular classrooms. *Paper presented at the 28th Annual TESOL Convention, Baltimore, M. D.*

Quirk, R., Greenbaum, S., Leech, G., & Svartvik, J. (1985). *A comprehensive grammar of the English language*. Cambridge: Cambridge University Press.

Raclaw, J. (2006). Punctuation as social action: The ellipsis as a discourse marker in computer-mediated communication. *Abstract for paper presented at the 32nd Annual meeting of the Berkeley Linguistics Society*, Berkeley, CA (February 10-12, 2006).

Rafaeli, S., & Sudweeks, F. (1997). Networked interactivity. *Journal of Computer-Mediated Communication* 2(4). Retrieved January29, 2009, from http://www.ascusc.org/jcmc/vol2/issue4/rafaeli.sudweeks.html

Raimes, A. (1983). *Techniques in teaching writing*. New York: Oxford University Press.

Raimes, A. (1985). What unskilled ESL students do as they write: A classroom study of composing. *TESOL Quarterly*, 19(2), 229-258.

Randall, N. (2002). *Lingo online: A report on the language of the keyboard generation*. Retrieved November11, 2008, from http://www.arts.uwaterloo.ca/~nrandall/LingoOnline-finalreport.pdf

Read, J. (2000). *Assessing vocabulary*. Cambridge, England: Cambridge University Press.

Rice, R.P. (1997). An analysis of stylistic variables in electronic mail. *Journal of Business and Technical Communication*, 11(1), 5-23.

Richardson, J., & Swan, K. (2003). Examining social presence in online courses in relation to students' perceived learning and satisfaction. *Journal of Asynchronous Learning Networks*, 7(1).

Rickert, A., & Sacharow, A. (2000). It's a woman's World Wide Web. *Media Metrix and Jupiter Communications*.Retrieved June 12, 2009, from http://www.mediametrix.com/data/MMXI-JUP-WWWW.pdf

Ritchie, W.C., & Bhatia, K.T. (2006). Social and psychological factors in language mixing. In T.K. Bhatia & W.C. Ritchie (Eds.), *The handbook of bilingualism* (pp.336–52). Oxford, UK: Blackwell Publishing.

Riva, G., & Galimberti, C. (1998). Interbrain frame: Interaction and cognition in computer-mediated communication. *Cyber Psychology & Behavior*, 1(3), 295–310.

Robb, T., Ross, S., & Shortreed, I. (1986). Salience of feedback on error and its effect on writing quality. *TESOL Quarterly,* 20, 83-93.

Roca de Larios, J., Murphy, L., & Martin, J. (2002).A critical examination of L2 writing process research. In S. Ransdell & M-L. Barbier (Eds.), *New directions for research in L2 writing* (pp. 11-48). Boston: Kluwer Academic.

Roed, J. (2003). Language learner behaviour in a virtual environment. *Computer Assisted Language Learning*, 16(2-3), 155-172.

Rogers, S. M. (2006). *Analysis of the academic discourse community in a computer-mediated asynchronous learning environment.* (Unpublished PhD thesis, University of Rochester, New York).

Rossman, M.H. (1999). Successful online teaching using an asynchronous learner discussion forum. *Journal of Asynchronous Learning Networks,* 3(2).Retrieved October10, 2007, from http://www.aln.org/alnweb

Rourke, L., & Anderson, T. (2002). Using peer teams to lead online discussions. *Journalof Interactive Media,* 1.Retrieved December 22,2010, from http://wwwjime.open.ac.uk/2002/1/rourke-anderson-02-1-t.html

Rourke, L., Anderson, T., Garrison, D. R., & Archer, W. (2001). Assessing social presence in asynchronous text-based computer conferencing. *Journal of Distance Education*, 14(2), 50-71.

Ruberg, L.F., Taylor, C.D., & Moore, D.M. (1996). Student participation and interaction on-line: A case study of two college classes: Freshman writing and plant science lab. *International Journal of Educational Telecommunications*, 2(1), 69-92.

Rubin, J. (1975). What the "good language learner" can teach us. *TESOL Quarterly*, 9(1), 41-51.

Sabooni, S. (1994). *The teaching of writing within the integrated skills approach in Bahrain.* (Unpublished M.Ed thesis, University of Manchester).

Salaberry, M.R. (1996). A Theoretical foundation for the development of pedagogical tasks in computer-mediated communication. *CALICO Journal*, 14(1), 5-36.

Salaberry, M.R. (1999). CALL in the year 2000: Still developing the research agenda. A commentary on Carol Chapelle's CALL in the Year 2000: Still in search of research paradigms. *Language Learning and Technology*, 3(1), 104-107.

Santilli, S., & Beck, V. (2005). Graduate faculty perceptions of online teaching. *Quarterly Review of Distance Education,* 6(2), 155-160.

Sasaki, M. (2000). Effects of cultural schemata on students' test taking processes for cloze tests: a multiple data source approach. *Language Testing*, 17(1), 85-114.

Sasaki, M. (2002).Building an empirically-based model of EFL learners' writing processes. In S. Ransdell & M. Barbier(Eds.), *New directions for research in L2 writing*(pp. 49–80). Boston: Kluwer Academic.

Schafer, R. (1981). *Narrative actions in psychoanalysis*. Worcester, Mass.:Clark University Press.

Schellens, T., & Valcke, M. (2005). Collaborative learning in asynchronous discussion groups: What about the impact on cognitive processing? *Computers in Human Behaviour*, 21, 957-975.

Schiffrin, D. (1987). *Discourse markers*. Cambridge. Cambridge University Press.

Schmidt, R. (1992). Psychological mechanisms underlying second language fluency. *Studies in Second Language Acquisition*, 14, 357-385.

Schrire, S. (2006). Knowledge building in asynchronous discussion groups: Going beyond quantitative analysis. *Computers and Education,* 46, 49-70.

Schulte, A. (2003). Discussions in cyberspace: Promoting interactivity in an asynchronous sociology course. *Innovative Higher Education*, 28(2), 107-118.

Schweigert, W. (1991). Classroom talk, knowledge development, and writing, *Research in the Teaching of English,* 25(4), 469–496.

Schumann, D., Artis, A., & Rivera, R. (2001).The future of interactive advertising viewed through an IMC lens. Journal of Interactive Advertising, 1 (2).Retrieved May 10. 2012, from http://www.jiad.org/vol1/no2/schumann/index.html

Scott, M., & Tribble, C. (1996). *Textual patterns: Key words and corpus analysis in language education*. Amsterdam: John Benjamin Publishing.

Sengupta, S. (2001). Exchanging ideas with peers in network-based classrooms: An aid or a pain? *Language, Learning and Technology*, 5, 103-134.

Shaw, P., & Liu, E. (1998). What develops in the development of second-language writing. *Applied Linguistics*, 19, 225-254.

Shaw, S.D., & Weir, C.J. (2007). *Examining writing: Research and practice in assessing second language writing*. Cambridge: Cambridge University Press.

Sheard, J., Miller, J., & Ramakrishnan, S. (2003). Web-based discussion forums: The staff perspective. *Proceedings of the 8th annual conference on Innovation and technology in computer science education*, June 30-July 02, 2003, Thessaloniki, Greece.

Sherry, L., Tavalin, F., & Billig, S. H. (2000). Good online conversation: Building on research to inform practice. *Journal of Interactive Learning Research,* 11(1), 85-127.

Short, J., William, E., & Christie, B. (1976). *The Social psychology of telecommunications*. London: John Wiley and Sons.

Silva, T. (1993). Toward an understanding of the distinct nature of L2 writing: The ESL research and its implications. *TESOL Quarterly*, 27, 657–677.

Simpson, J. (2003). *The discourse of Computer-Mediated Communication: A study of an online community*. (Unpublished PhD thesis, University of Reading).

Simpson, J. (2005). Learning electronic literacy skills in an online language learning community. *Computer Assisted Language Learning*, 18(4), 327–345.

Sinclair, J., & Coulthard, M. (1975). *Towards an analysis of discourse*. London: Oxford University Press.

Sit, J.W., Chung, J.W, Chow, M.C., & Wong, T.K. (2005). Experiences of online learning: students' perspective. *Nurse Education Today*, 25, 104-147.

Skehan, P. (1996). A framework for the implementation of task based instruction. *Applied Linguistics*, 17, 38–62.

Skehan, P. *(1998). A cognitive approach to language learning.* London:Oxford University Press.

Skehan, P., & Foster, P. (1997). The influence of planning and post-task activities on accuracy and complexity in task based learning. *Language Teaching Research*, 1(3).

Slavit, D. (2002). Expanding classroom discussion with an online medium. *Journal of Technology and Teacher Education,* 10(3), 407-503.

Sloan Consortium effective practices: Learning effectiveness. Retrieved November 11, 2008, from http://www.sloan-c.org/effectivepractices

Song, L., Singleton, E.S., Hill, J.R., & Koh, M.H. (2004). Improving online learning: Student perceptions of useful and challenging characteristics. *The Internet and Higher Education*, 7(1), 59-70.

Sorensen, E.K. (1996). Learning online through linguistic interaction. *Innovation in Teaching and Learning: An International Journal for the Critical Practitioner*, 2(2), 12-17.

Soter, A., Wilkinson, I., Murphy, K., Rudge, L., Reninger, K., & Edwards, M. (2008). What the discourse tells us: Talk and indicators of high-level comprehension. *International Journal of Educational Research*, 48(1), 372-391.

Sotillo, S. (2000). Discourse functions and syntactic complexity in synchronous and asynchronous communication. *Language Learning and Technology Journal,* 4(1), 82-119.

Spears, R., & Lea, M. (1992).Social influence and the influence of the 'social' in computer-mediated communication. In M. Lea (Ed.), *Contexts of computer-mediated communication* (pp.30-65). Hemel Hempstead, England: Harvester Wheatsheaf.

Speck, B.(2002). Learning-teaching-assessment paradigms and the on-line classroom. *New Directions for Teaching and Learning*, 91, 5-18.

Spitzer, M. (1986). Writing style in computer conferences. *IEEE transactions on professional communication*, 29(1), 19-22.

Sproull, L., & Kiesler, S. (1986). Reducing social context cues: Electronic mail in organizational communication. *Management Science,* 32, 1492-1512.

Stapleton, P. (2002). Critiquing voice as a viable pedagogical tool in L2 writing: Returning the spotlight to ideas. *Journal of Second Language Writing*, 11(3), 177-190.

Street, B. (1995). Academic literacies. In D. Baer, C. Fox & J. Clay (Eds.), *Challenging ways of knowing in Maths, Science and English*, (pp. 101-134). Lewes: Falmer Press.

Stubbs, M. (1976). *Language, schools and classrooms*. London: Methuen and Co.

Stubbs, M. (1996). *Text and corpus analysis: computer-assisted studies of language and culture*. Oxford: Blackwell.

Sullivan, N. (1998). Developing critical reading and writing skills: Empowering minority students in a networked computer classroom. In J. Swaffar, S. Romano, P. Markley, & K. Arens, (Eds.), *Language learning online: Theory and practice in the ESL and L2 computer classroom* (pp.41-56). Austin, TX: Labyrinth Publications.

Sullivan, N., & Pratt, E. (1996). A comparative study of two ESL writing environments: A computer-assisted classroom and a traditional oral classroom. *System*, 24(4), 491-501.

Sullivan, P. (2002). "It's easier to be yourself when you are invisible": Female college students discuss their online classroom experiences. *Innovative Higher Education,* 27,129–143.

Sutton, L. (2001). The principle of vicarious interaction in computer-mediated communications. *International Journal of Educational Telecommunications,* 7(3), 223-242.

Swain, M. (1985). Communicative competence: Some roles of comprehensible input and comprehensible output in its development. In S. Gass & C. Madden (Eds.),

Input and second language acquisition (pp.235-256). Rowley, MA: Newbury House.

Swain, M. (2000).The output hypothesis and beyond. In J. Lantolf (Ed.), *Sociocultural theory and second language acquisition* (pp. 97–114). Oxford, UK: Oxford University Press.

Swain, M., & Lapkin, S. (2000). Task-based second language learning: the uses of the first language. *Language Teaching Research*, 4, 253-276.

Swales, J. M. (1990).*Genre analysis*. Cambridge: Cambridge University Press.

Swan, K. (2003). Learning effectiveness: What the research tells us. In J. Bourne & J.C. Moore (Eds.), *Elements of quality online education, practice and direction* (pp. 13-45).Needham, MA: Sloan Center for Online Education.

Swan, K., & Shih, L.F. (2005).On the nature and development of social presence in online course discussions. *Journal of Asynchronous Learning Networks*, 9(3),115-136.

Tannen, D. (1991). *You just don't understand: Women and men in conversation*. New York: Ballentine Books.

Tapia, E. (1993). *Cognitive demand as a factor of interlanguage syntax*. (Unpublished PhD thesis, Indiana University).

Tella, S. (1992).*Talking shop via e-mail: A thematic and linguistic analysis of electronic mail communication.* Department of Teacher Education, University of Helsinki. Research Report 99.

The Middle East Newspaper (2008, March 5). Retrieved March 5, 2008, from http://www.asharqalawsat.com/details.asp?section=3andarticle=297266andissue=9654

Thomas, M.J. (2002). Learning within incoherent structures: The space of online discussion forums. *Journal of Computer Assisted Learning*, 18, 351–366.

Tiene, D. (2000). Online discussions: A survey of advantages and disadvantages compared to face-to-face discussions. *Journal of Educational Multimedia and Hypermedia*, 9(4), 371-384.

Tornow, J. (1997). *Link/age: Composing in the on-line classroom*. Logan, UT: Utah State University Press.

Tudini, V., & Rubino, A. (1998). Connecting language student through e-mail: A pilot project. *Babel*, 33(1), 18-21, 32-33, 37.

Tuman, M. C. (1992). *Word perfect: Literacy in the computer age.* Pittsburgh: University of Pittsburgh.

Ure, J. (1971). Lexical density and register differentiation. In G.E. Perren, & J.L.M. Trim, (Eds.), *Applications of Linguistics: Selected Papers of the Second International Congress of Applied Linguistics, Cambridge 1969* (pp. 443-452). Cambridge: Cambridge University Press.

VanPattern, B. (1996). *Input processing and grammar instruction in second language acquisition*. Norwood. NJ: Ablex.

Vonderwell, S. (2003). An examination of asynchronous communication experiences and perspectives of students in an online course: a case study. *The Internet and Higher Education*, 6(1), 77-90.

Vonderwell, S., Liang, X., & Alderman, K. (2007). Asynchronous discussions and assessment in online learning. *Journal of Research on Technology in Education*, 39(3), 309–328.

Vygotsky, L. (1978). *Mind and society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.

Wallace, J.D. (1999). *An Examination of Computer-Mediated Communication's Scholarly Communication*. (Unpublished PhD thesis, University of Oklahoma).

Wang, Q., & Woo, H. (2007). Comparing asynchronous online discussions and face-to-face discussions in a classroom setting. *British Journal of Educational Technology*, 38(2), 272-286.

Wang, Y. M. (1993). *E-mail dialogue journaling in an ESL reading and writing classroom.* (Unpublished Ph.D. thesis, University of Oregon at Eugene, USA).

Ware, P. (2005)."Missed" communication in online communication: Tensions in a German-American telecollaboration. *Language Learning and Technology*, 9(2), 64-89.

Ware, P., & O'Dowd, R. (2008). Peer feedback on language form in telecollaboration. *Language Learning & Technology*, 12(1), 43-63.

Warschauer, M. (1995). *E-mail for English teaching: Bridging the Internet and computer learning networks into the language classroom.* Alexandria: TESOL Publication.

Warschauer, M. (1996a). Comparing face-to-face and electronic discussion in the second language classroom. *CALICO Journal,* 13(2), 7-26.

Warschauer, M. (1996b). Computer-assisted language learning: An introduction. In S. Fotos (Ed.), *Multimedia language teaching* (pp.3-20). Tokyo, Japan: Logos International.

Warschauer, M. (1996c). Motivational aspects of using computers for writing communication. In M. Warschauer (Ed.), *Telecommunication in foreign language learning* (pp.29-46). Honolulu, HI: University of Hawaii Second Language Teaching and Curriculum Centre, TESOL Publications.

Warschauer, M. (1999).*Electronic literacies: Language, culture and power in online education.* Mahwah, NJ: Lawrence Erlbaum.

Warschauer, M., & Kern, R. (Eds.). (2000). *Network-based language teaching: Concepts and practice.* Cambridge: Cambridge University Press.

Warschauer, M., El-Said, G.R., & Zohry, A. (2007). Language choice online: globalization and identity in Egypt. In B. Danet & S.C. Herring (Eds.), *The multilingual Internet: Language, culture, and communication online* (pp.303-318). Oxford: Oxford University Press.

Wasilik, D.U., & Bolliger, O. (2009).Factors influencing faculty satisfaction with online teaching and learning in higher education. *Distance Education*, 30(1), 103-116.

Weasenforth, D., Biesenbach-Lucas, S., & Meloni, C. (2002). Realising constructivist objectives through collaborative technologies: Threaded discussions. *Language Learning and Technology*, 6(3), 58-86.

Wei, L. (2000). Unequal election of morphemes in adult second language acquisition.*Applied Linguistics*, 21(1), 106-140.

Weisskirch, R.S., & Milburn, S.S. (2003). Virtual discussion: Understanding college students' electronic bulletin board use. *Internet and Higher Education*, 6, 215-225.

Wellz, G., & Aruaz, R. (2006).Dialogue in the classroom. *Journal of the Learning Sciences*, 15(3), 379-428.

Werry, C. (1996). Linguistic and interactional features of Internet Relay Chat. In S.C. Herring (Ed.), *Computer-mediated communication: Linguistic, social and crosscultural perspectives* (pp.47-63). Amsterdam: Benjamins.

Wertch, J. (1991). *Voices of the mind: A sociohistorical approach to mediated action.* Cambridge, MA: Harvard University Press.

Williams, H. L., & Meredith, E. M. (1996). On-line communication patterns of novice Internet users. *Computers in the Schools*, 12(3), 21-31.

Wilson, T., & Whitelock, D. (1998). What are the perceived benefits of participating in Computer-Mediated Communication (CMC) environment for distance learning computer science students? *Computers and Education*, 30(3-4), 259-269.

Wishart, C., & Guy, R. (2009). Analyzing responses, moves, and roles in online discussions. *Interdisciplinary Journal of E-Learning and Learning Objects*, 5, 129-144.

Wojahn, P.G. (1994). Computer-mediated communications: The great equalizer between men and women. *Technical Communications*, 41(4), 747-752.

Wolfe-Quintero, K., Inagaki, S., & Kim, H. Y. (1998).*Second language development in writing: Measures of fluency, accuracy, and complexity*. Honolulu: National Foreign Language Resource Center.

Wu, D., & Hiltz, S.R. (2004).Predicting learning from asynchronous online discussions. *JALN*, 8(2), 139-152.

Yates, S.J. (1993). *The textuality of computer-mediated communication: Speech, writing and genre in CMC discourse*. (Unpublished PhD dissertation, Open University).

Yates, S.J. (1996). Oral and written linguistic aspects of computer conferencing. In S. Herring (Ed.), *Computer-mediated communication: Linguistic, social and cross-cultural perspectives* (pp.9-46). Amsterdam: John Benjamins.

Yates, S.J. (2001).Gender, language and CMC for education. *Learning and Instruction,*11, 21-34.

Yates S.J., &Orlikowski, W. (1993). Knee-jerk anti-LOOPism and other E-mail phenomena: Oral, written, and electronic patterns in computer-mediated communication. *MIT Sloan School Working Paper #3578-93, Center for Coordination Science Technical Report #150*. Retrieved January 15, 2009, from http://ccs.mit.edu/papers/CCSWP150.html#foot

Young, J. (2002). 'Hybrid' teaching seeks to end the divide between traditional and online instruction. *Chronicle of Higher Education*, 48(28), A33- A34.

Yousif, L.S. (2006). *Grice's Maxims as a tool of assessing the efficiency of ESP writing*. (Unpublished MA Thesis, University of Bahrain).

Yuan, F., & Ellis, R. (2003).The effects of pre-task planning and on-line planning on fluency, complexity, and accuracy in L2 monologic oral production. *Applied Linguistics*, 24, 1-27.

Zamel, V. (1983). The composing processes of advanced ESL students: Six case studies. *TESOL Quarterly,* 17, 165-187.

Zhang, S. (1987). Cognitive complexity and written production in English as a second language. *Language Learning,* 37, 469-481.

Zhu, E. (1996). Meaning negotiation, knowledge construction, and mentoring in a distance learning course. In *Proceedings of Selected Research and Development Presentations at the 1996 National Convention of the Association for Educational Communications and Technology* (18th National Convention, Indianapolis).

Zhu, E. (2006). Interaction and cognitive engagement: An analysis of four asynchronous online discussions. *Instructional Science*, 34, 451-480.

APPENDICES

APPENDICES

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APPENDIX A
Course Description

UNIVERSITY OF BAHRAIN
College of Arts
Department of English Language and Literature
ENGL 205 LANGUAGE DEVELOPMENT III
Semester 1 2008/2009

Course Description

The fourth in the series of integrated language courses following on from ENGLU 203.
Prerequisite = ENGLU 203

Teacher's name: .....

AIMS

This course continues to give practice in the four skills of listening, speaking, reading and writing, with an emphasis on the accuracy of production and the development of the writing proficiency.

COMPETENCIES

By the end of the course, students should be able to:

1. VOCABULARY

- Use adjectives and nouns to talk about distance and dimension
- Identify the difference in meaning between commonly used nouns of distance and dimension
- Use phrasal verbs and other expressions to describe different ways of speaking
- Use words when talking about newspapers and television
- Use words and expressions related to shopping, spending and saving money.

2. WRITING

- Recognize and use linking devices used in narratives
- Review the elements of good magazine article then practice writing an article
- Recognise the useful expressions which could be used in discursive/argumentative composition
- Write a discursive/argumentative composition
- Plan a narrative composition
- Plan and write an informal letter
- Recognise the difference between formal and informal letter-writing expressions
- Practice planning and writing an informal transactional letter
- Practice planning and writing a discursive/argumentative composition.

3. USE OF ENGLISH

- Complete a gapped text with the correct form of a given word

- Identify the types of words that can be used to complete a gapped text
- Use prepositions with certain nouns, verbs and adjectives
- Use words to talk about using things
- Use positive and negative adjectives of feelings and opinions
- Use words related to crime, gender differences and unemployment

4. READING

- Read for specific and general information
- Match paragraphs of a text with suitable headings
- Complete a gapped text with sentences with a list of options

5. GRAMMAR

- Use the definite and indefinite article
- Recognize the difference between defining and non-defining relative clauses
- Use expressions to give advice and criticism
- Recognise and use gradable and non-gradable adjectives and the adverbs that intensify them
- Recognize and use modals and other expressions to talk about obligation, lack of obligation and prohibition
- Use too, very, and enough and recognize the differences between them
- Recognize and use question tags
- Recognize and use the present perfect
- Recognize and use verbs related to degrees of probability
- Recognize and use verbs followed by both a gerund and an infinitive
- Recognize and use the future perfect and future continuous
- Use words related to money, travel and holidays
- Use words related to media (television, newspapers, cinema, theatre)
- Use make and do in phrasal verbs
- Practise everyday phrases to make suggestions, express annoyance or disagreement, make promises, etc.

- Answer multiple choice questions about a text
- Complete gaps in an article with sentences which have been removed
- Read and talk about exciting or unusual holidays
- Read and argue for and against textbook-related issues in class

- Recognize and use comparative and superlative forms in common adjectives and adverbs

COURSE MATERIALS

Going for Gold: Upper-Intermediate – Coursebook by R. Acklam & A. Crace

Going for Gold: Upper-Intermediate – Language Maximiser by Sally Burgess

Units to be covered

Unit 8 *Land of the Pharaohs*
Unit 9 *Talk to me*
Unit 10 *More, more, more*
Unit 11 *Water, water everywhere*
Unit 12 *Give us a clue*
Unit 13 *A long way from home*
Unit 14 *Just an act*
Unit 15 *Giving something back*

ASSESSMENT

20% Coursework (including TOEFL Test) and participation in in-class discussion
30% Midterm test
50% Final test

APPENDIX B
Research Study Information Sheet

An assessment of the use of discussion boards in Bahraini L2 settings

You are being invited to take part in a research project. Before you decide it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask us if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part. Thank you for reading this.

1. **What is the project's purpose?**

This project is part of my thesis which investigates the effectiveness of using discussion boards in L2 contexts aiming at finding interactive tools that can supplement conventional instruction. The data collection is expected to last for 5 months from September 2008 to January 2009.

2. **Why have I been chosen?**

I have chosen you, whether you are a teacher or a student, as active members of the University of Bahrain. This can help me evaluate the pedagogical practices and learning strategies in a closed community to control the variables as much as possible and obtain valid results.

3. **Do I have to take part?**

Taking part in the research is entirely voluntary. If you do decide to take part you will be given this information sheet to keep (and be asked to sign a consent form) and you can still withdraw at any time without it affecting any benefits that you are entitled to in any way. You do not have to give a reason

4. **What will happen to me if I take part?**

- If you are a teacher, participating in this research will only involve completing an online questionnaire available on your *WebCT* course portal. You might also be asked to participate in a semi-structured interview that will not last more than an hour.
- If you are a student, you will receive normal instruction in class with the course content, assignments and tests posted on *WebCT*.

This study is experimental some of you will be asked to participate in online discussion in *WebCT* throughout the semester while some will not. You will be also asked to take part in questionnaires and you might be asked to participate in semi-structured interviews that will jot last more than an hour.

5. **What do I have to do?**

There are no lifestyle restrictions as a result of participating.

6. **What are the possible disadvantages and risks of taking part?**

I do not expect that participating in the research study will involve any discomforts, disadvantages and risks. However, any unexpected discomforts, disadvantages and

risks, which might arise during the research, will be brought immediately to your attention.

7. **What are the possible benefits of taking part?**
Whilst there are no immediate benefits for those people participating in the project, it is hoped that this work will help the *UoB* faculty members and administrators improve instruction and facilitate tools that can help learners engage in interactive and comprehensible use of the target language.

8. **What happens if the research study stops earlier than expected?**
No harm is expected to be caused in case the research study stops earlier than expected.

9. **What if something goes wrong?**
If something goes wrong, feel free to send me your complaints. If my response to your complaints was not satisfactory, please feel free to contact the Chairperson of the English Language and Literature Department should you wish to raise a complaint. However, if you feel that your their complaint has not been handled to your satisfaction, please contact my supervisor at the University of Sheffield, Dr Gibson Ferguson (g.r.ferguson@sheffield.ac.uk).

10. **Will my taking part in this project be kept confidential?**
All the information that we collect about you during the course of the research will be kept strictly confidential. You will not be able to be identified in any reports or publications'.

11. **What will happen to the results of the research project?**
The results of the research projects will be published in written and electronic forms. Copies of the thesis will be available at the University of Bahrain's library. Should you wish to know the results of the study, I would be more than willing to provide them.
It is possible also that the data collected during the course of the project might be used for additional or subsequent research.

12. **Who is organising and funding the research?**
This research is organised by the University of Sheffield and funded by the University of Bahrain.

13. **Contact for further information**

Diana Al Jahromi
Research Assistant
English Language and Literature Department
Tel: 17438794
Email: daljahromi@yahoo.com

As a participant, you are given a copy of the information sheet and a signed consent form to keep.

Thank you very much for your participation

APPENDIX C

Participant Consent Form

Title of Project: A Study of the Use of Discussion Boards in L2 Writing Instruction at the University of Bahrain

Name of Researcher: Diana Al Jahromi
Participant Identification Number for this project: .....

Please initial box

1. I confirm that I have read and understand the information sheet dated *[1st October 2008]* for the above project and have had the opportunity to ask questions. ☐

2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason. (*Contact number of lead researcher is: 00973-174338794).* ☐

3. I understand that my responses will be anonymised before analysis. I give permission for members of the research team to have access to my anonymised responses. ☐

4. I agree to take part in the above research project. ☐

Name of Participant	Date	Signature
Name of person taking consent (*if different from lead researcher*)	Date	Signature

To be signed and dated in presence of the participant

Lead Researcher	Date	Signature

To be signed and dated in the presence of the participant

APPENDIX D

Expectations for Online Discussion

(Adopted from Schulte (2003))

- I expect active participation from students in the discussions. It is important that you make a commitment to discuss the topics on a regular schedule. However, you have to remember that that there will be no grade allocation for your participation, as also indicated in the syllabus. The main aim behind your participation is to provide you with a venue to voice your opinions openly and interactively.
- You have a whole week to answer the discussion prompt and respond to someone else's response. If anyone responds to your message, you may want to reply to them. This requires that you check in on a regular basis to see if someone has posed a question to you. The goal of discussion is for it to function like any conversation. This just takes a little more time in an asynchronous environment. Please keep in mind that the **minimum requirement is to submit one initial post and one reply per week**. You should not, however, limit yourself to this. You may feel free to comment on any discussion that occurs after you have made your initial comments.
- I will make note of your participation and of the quality of your postings for research purposes. That does NOT mean that I will send you corrective feedback on your postings but simply guidance and instruction. You will receive corrective feedback only on the writing assignments.
- When you post responses or questions, you should attempt to reduce spelling errors and grammatical errors.
- After the period of a week is over, late submission will not be accepted.
- The interesting aspect of the online environment is that it allows you to thoughtfully prepare your discussion contributions. You have the opportunity to reflect on the issues in greater depth before presenting your ideas to others. This is a particular advantage when you are responding to reading assignments. Please take advantage of this opportunity.
- Although some of the topics we will discuss can be controversial, it is very important to be respectful of the attitudes of others. I assume that all students will be **courteous and respectful** of their classmates.

APPENDIX E

Students' Pre-Study Questionnaire

This questionnaire is intended to provide your instructor with background information about your computer literacy, language background and current L2 teaching practices, as also explained in the information sheet attached. Please bear in mind that all your responses will remain confidential. Please bear in mind that this questionnaire consists of 5 pages. Thank you for your cooperation and for taking the time to fill out this questionnaire.

❖ ***Demographic Information***

a. Your name: ----------

b. Your ID #: ----------

c. ENGL 205 section number: ----------

d. Age:

❑18-20 ❑21-24 ❑25-29 ❑30+

e. Native Language: ----------

f. Other languages in addition to English: ----------

g. Year of Study:

❑1st year ❑2nd year ❑3rd year❑4th year ❑5th year

❖ ***Section A. Computer Literacy***

Circle the most appropriate answer:

1. Are you good at using computers?
   ❑YES ❑NO

2. What is your typing speed?
   ❑Very slow
   ❑Slow
   ❑Average
   ❑Fast

3. What is your overall attitude about computers?
    a. I strongly like them
    b. I like them
    c. I am neutral about them
    d. I dislike them
    e. I strongly dislike them

4. Do you have a computer with Internet access at home?

    ❑YES ❑NO

5. Do you feel comfortable while browsing the Internet?

    ❑YES ❑NO ❑NOT SURE

6. What is your overall attitude about using the Internet?
    a. I strongly like it
    b. I like it
    c. I am neutral about it
    d. I dislike it
    e. I strongly dislike it

7. How often do you use the following: *(Put a tick ☑ in the box that best describe the frequency of your use:*

Online Tools	***Very frequently (daily)***	***Frequently (1-6 times a week)***	***Not frequently (1-4 times a month)***	***Never***
a. The web				
b. Email				
c. Search Engines				
d. Chats				
e. Discussion Boards				
f. Blogs				
g. Instant Messaging				

❖ ***Section B. Language Background***

9. How long have you been learning or studying English?

❑1-5 years❑6-10 years ❑11-15 years❑16-20 years

10. Please rate yourself in the following language areas: *(Please choose one only)*

a. Grammar:❑elementary ❑intermediate ❑advanced

b. Speaking: ❑elementary ❑intermediate ❑advanced

c. Reading: ❑elementary ❑intermediate ❑advanced

d. Writing: ❑elementary ❑intermediate ❑advanced

e. Listening: ❑elementary ❑intermediate ❑advanced

11. In what ways do you practice or use English outside the classes?

Please choose the word that best describes your activities below. If you choose "others," please specify the activities you are referring to.

Activities	***Very frequently (daily)***	***Frequently (1-6 times a week)***	***Not frequently (1-4 times a month)***	***Never***
a. Talking in English with friends and relatives				
b. Reading English books or magazines				
c. Watching English TV programs or movies				
d. Writing in blogs and diaries using English				
e. Others: (Please specify below): ---------- ----------				

❖ ***Section C. Current L2 Teaching Practices***

12. Which of the language areas (*grammar, reading, speaking, listening, or writing*) is the MOST emphasised in the English classroom? *(Please select one only)*

---

13. Which of the above-mentioned language areas is the LEAST emphasised in the English classroom?

---

14. Which of these language areas do you MOST want to improve? And why?

Do you like to express your opinion on a topic in front of your peers in the classroom?

❑YES ❑NO ❑NOT SURE

15. When discussing topics in the classroom, how much time are you given to talk?
    a. Less than a minute
    b. 1-2 minutes
    c. 3-5 minutes
    d. 5-10 minutes
    e. More than 10 minutes
16. When discussing a topic in the classroom, do you:
    a. discuss it with the teacher?
    b. discuss it with your peers/classmates?
    c. discuss it with the teacher and your peers at the same time?
17. When the teacher asks you to participate in an in-class discussion, how do you feel?
    a. Relaxed and comfortable
    b. Anxious and nervous
    c. Shy and quiet
    d. Other (*please specify*)

---

18. Have you taken an online course before?

❑YES ❑NO ❑NOT SURE

If yes, please indicate the name of the course: ----------

19. Have you ever participated in any online discussion in a *UoB* course?

❑YES ❑NO ❑NOT SURE

20. Do you enjoy communicating with others online?

❑YES ❑NO ❑NOT SURE

21. In your opinion, what are the advantages of discussing topics online?

---

22. In your opinion, what are the disadvantages of discussing topics online?

---

23. List in the space below at least three topics that you think would be interesting to discuss with your teacher and/or peers:

Thank you very much for your time

Diana Al Jahromi

APPENDIX F

Students' Post-Study Questionnaire

This questionnaire aims at evaluating your perceptions of using the discussion board in your English language course and eliciting the main advantages and disadvantages of the experience you have been through. Please remember that all your responses are going to remain confidential and anonymised. Thank you for your time and effort.

Name : .....

ID # : .....

1. Was this your first experience with posting/replying to a discussion board? (Circle one)
   a. Yes
   b. No

2. How did you feel about using the discussion board at the beginning of the semester?
   a. Relaxed
   b. Nervous
   c. Other: (Please specify in the box below):

   .....

3. How did you feel about using the discussion board towards the end of the semester?
   a. Relaxed
   b. Nervous
   c. Other: (Please specify in the box below):

   .....

4. How do you feel about writing in English now compared to the beginning of the semester?

---

5. Did you use to edit your writing for grammatical and spelling errors before submitting it online?

   a. Yes
   b. No
   c. Not sure

6. Please provide reasons for your last answer to Question 5 *(please use the space below)*

---

7. Was there constant feedback and comments from the teacher?

   a. Yes
   b. No
   c. Not sure

8. Would you have preferred more feedback and comments from the teacher?

   a. Yes
   b. No
   c. Not sure

9. Was the requirement to post one major message per week …?

   a. Not enough
   b. Just enough
   c. Too much

10. Was there enough technical support when there was an access problem?

    a. Yes
    b. No
    c. Not sure

11. Now that the course has finished, which kind of courses do you prefer?

    d. Courses with online discussions
    e. Courses with face-to-face discussions
    f. Not sure

12. Would you like to repeat the same experience of using online discussions in future courses?

a. Yes

b. No

c. Not sure

13. Read the following statements and relate them to your own experience of using the discussion board on *WebCT*. Decide if you *strongly agree, agree, disagree, or strongly disagree* with these statements or if you are *not sure* by putting a tick (☑) in the right box.

Statements	*Strongly Agree*	*Agree*	*Not sure*	*Disagree*	*Strongly Disagree*
1. *I had better relationships with my peers in in-class discussion than the online discussion*					
2. *I learnt more about my peers in the online discussion than in-class discussion*					
3. *I received sufficient responses from my peers on my online posts*					
4. *I rarely shared personal information in the discussion board with my peers*					
5. *I wrote at my own pace on the discussion board*					
6. *The online discussion is more intimidating than in-class discussion*					
7. *I felt more anxious in in-class discussion than in online discussion*					
8. *I learned better from in-class discussion than online discussion*					
9. *I produced more writing in in-class assignments than in the discussion board*					
10. *I understood course tasks and assignments more in in-class discussion than in online discussion*					
11. *I learnt new vocabulary items from the online discussion*					

Statements	*Strongly Agree*	*Agree*	*Not sure*	*Disagree*	*Strongly Disagree*
12.I used external resources (software, websites, books) to support my online arguments					
13.I do not think online discussion improved my writing skill					
14.I believe I write better now					
15.I used to notice my mistakes in the discussion board					
16.I expressed my opinions more openly in in-class discussion than in the discussion board					
17.I enjoyed the online discussion					
18.I interacted more with my peers in the online discussion than in the in-class discussion					
19.The extra writing practice on the discussion board was tiring					
20.I sent regular responses on my peers' online posts					
21.I liked receiving peer responses on my opinions					
22.I used to check my spelling and grammar before submitting my online contributions					
23.I paid little attention to my peers' writing styles in the discussion board					
24.I used to plan my online writing before submitting it					
25.I rarely used my peers' grammatical or lexical structures in my writings					
26.I used to check my spelling and grammar before submitting my online contributions					
27.I communicated well with members of the other sex in in-class discussion					
28.I communicated more with members of the other sex in in-class discussion than in online discussion					

Statements	*Strongly Agree*	*Agree*	*Not sure*	*Disagree*	*Strongly Disagree*
29. *I opposed my peer's opinions freely in the online discussion*					
30. *We interacted more with the teacher in f2f classes than in the discussion board*					
31. *I think students participated more online when the teacher was participating*					
32. *I participated less when the teacher was participating in the online discussion*					

14. What were the advantages of using discussion boards?

---

15. What were the disadvantages of using discussion boards?

---

16. What suggestions can you give to improve the use of the discussion board on *WebCT*?

---

17. If you would like to make additional comments regarding the online discussions, please use the space below:

Thank you very much for your time

Diana Al Jahromi

APPENDIX G

University of Bahrain's Teachers Questionnaire

Thank you for taking the time to fill out this questionnaire which aims at investigating the different uses of discussion boards in your online courses, as also explained in the information sheet attached. This questionnaire is completely confidential and all your answers and personal information will remain anonymous.

❖ ***Demographic Background***

a. Name: ----------

b. College: ----------

c. Department: ----------

d. Native language: ----------

e. Gender: ❒ Male ❒ Female

f. Age:

- ❒ Below 30
- ❒ 30 – 40
- ❒ 41 – 50
- ❒ 51 – 60
- ❒ More than 60

g. Academic rank:

i. Are you a/an …?:

❒ Graduate Assistant ❒ Instructor ❒ Lecturer
❒ Assistant Professor ❒ Associate Professor ❒ Professor

ii. Are you a …?:

❒ Full-time teacher ❒ Part-time teacher

h. Course level: Please indicate the levels of your online courses: *(You may select more than one)*

❒Orientation ❒ 1st-year ❒ 2nd-year ❒ 3rd-year ❒ 4th-year

❖ ***Use of Discussion Boards and/or Use of In-Class Discussion***

1. How do describe students' participation in in-class discussion and the factors that affect their participation? (*Please indicate in the space below*)

---

2. Please indicate the different online functions you use in your *WebCT* course: *(You may select more than one)*

❒ Delivery of course content (units and course material)
❒ Tests and quizzes
❒ Student assignments
❒ Classroom presentations
❒ Email exchanges
❒ Discussion boards
❒ Course calendar
❒ Grades statistics

3. How important is it that your students do the following activities in your online course?

Online Activities	**Very important**	**Moderately important**	**Not important**
a. Reading course content	❒	❒	❒
b. Doing online tests	❒	❒	❒
c. Learning about and submit their assignments	❒	❒	❒
d. Exchanging email with you	❒	❒	❒
e. Discussing topics with you and their classmates in the discussion board	❒	❒	❒
f. Downloading course-related material	❒	❒	❒

4. Do you use discussion boards in your online course?

❒ Yes ❒ No

(If No, please answer Questions 6, 7 and 8 only)

5. If yes, how often do you post a topic for class discussion?

❒ Once a week
❒ Twice a month
❒ Once a month
❒ Twice a semester
❒ Once a semester

(Now please go to Question 10)

❖ ***Perceived Effectiveness of Using Discussion Boards in Pedagogical Settings***

6. If no, why? (*Please indicate in the space below*)

---

7. What do you think are the main disadvantages of using discussion boards in your courses?

---

8. What do you think are the possible advantages of using discussion boards in your courses?

---

9. Do you think you will ever use discussion boards in your future courses?

❒ Yes ❒ No ❒ Not Sure

Please use the space below to justify your answer:

---

10. Please choose your feeling toward each of the 40 statements in the following tables (Choose ONE only please):

a. Effects on Student Learning

Statement	Agree	Disagree	Not Sure
1. Students participate more in the online discussion than in in-class discussion			
2. I use the discussion board to give extra writing practice to my students			
3. My students produce less writing in the discussion board than in traditional classroom settings.			
4. Students read more in the online discussion			
5. Students interact more with their peers in in-class discussion			
6. Students interact more with me in the online discussion			
7. Students use their peers' writing styles in the online discussion			
8. Students copy their peers' writing errors in the online discussion			
9. Students plan their in-class writing assignments			
10. Students plan their online writing contributions			
11. Students share their opinions more in in-class discussion than in online discussion			
12. Students use external resources to support their online arguments			
13. It is important for students to receive my feedback on their online postings			
14. It is important for students to receive their peers' responses on their online postings			
15. Online discussion provides students with equal opportunities for participation			
16. Shy students participate less in the online discussion than in in-class discussions			
17. Weak students participate more in online discussion than in in-class discussion			
18. Female students interact more in in-class discussion than in online discussion			
19. Male and female students interact openly in in-class discussion			
20. Students discuss more course-related assignments in the discussion board than in-class discussion			

b. Effects on Teaching Practice

Statement	Agree	Disagree	Not Sure
21. *I provide better feedback on my students' writings in the traditional courses than in the online ones*			
22. *I use students' online discussion transcripts to assess their course performance*			
23. *I get to know my students better in in-class discussion more than in online discussion*			
24. *I identify my students' weaknesses more in the in-class discussion than the online discussion*			
25. *I remove and add topics and posts on the discussion board easily*			
26. *Online discussion saves a lot of class time*			
27. *Online discussion requires less planning than in-class discussion*			
28. *Online discussion is better for managing large classes than in-class discussion*			
29. *Reading and replying to students' online posts is time-consuming*			
30. *I can access students' online discussion at any time*			
31. *It is easier to distribute course material in class than on the discussion boards*			
32. *I use the data retrieved from the discussions for research*			
33. *I received training on how to use discussion boards*			
34. *The University acknowledges our efforts on the discussion board*			
35. *e-Learning Centre's technical support is good*			
36. *My colleagues encourage me to use online discussion*			
37. *I prefer classroom discussion to online discussion*			
38. *Online discussion can replace in-class discussion*			
39. *In-class discussion is more important than online discussion*			
40. *I will use online discussion in my future online courses*			

Thank you very much for your time and effort

Diana Al Jahromi

APPENDIX H

Student Interview Questions

(Adopted from Swan & Shih, 2005; Vonderwell et al., 2007; Rogers, 2006)

1. *What did you think of the overall experience of using discussion boards?*
2. *How would you describe yourself in in-class discussions?*
3. *How often did you participate in the discussion board? Please provide justifications for your answer.*
4. *How would you rate the amount of writing you did in the discussion board?*
5. *How did using the discussion positively or negatively influence your writing skill and your overall learning experience, if any?*
6. *What were your main concerns, if any, when you were preparing to post your initial contribution to the discussion?*
7. *What new techniques did you use, if any, while writing your online contributions?*
8. *Did the ways other students wrote their contributions influence your impressions of them? If yes, how?*
9. *Did the ways other students wrote their messages influence your own writing? If yes, how?*
10. *What were your main concerns when you were responding to your peers?*
11. *Did you have particular peers that you chose to respond to? If yes, why?*
12. *How did your peers perceive the discussion board?*
13. *What did you think about sharing personal experiences with your peers?*
14. *What did you think of the topics I posted for discussion?*
15. *What your impressions about my participation as a teacher in the discussions?*
16. *What constraints did you have to overcome while discussing a topic online?*
17. *What was the difference between online discussion and in-class discussion?*
18. *Which one do you prefer and why?*
19. *How do you think using the discussion board influenced your overall learning experience?*
20. *What did you the main advantages of using the discussion board?*
21. *What were the main disadvantages of using the discussion board?*
22. *What did you find most encouraging in the discussions?*
23. *What did you find most frustrating in the discussions?*
24. *What do you recommend to improve the overall experience of using discussion boards?*
25. *Do you have any more comments?*

APPENDIX I

The *UoB* Teachers' Interview Questions

a) Teachers that did not use discussion boards

1. *What do you use WebCT for?*
2. *Do you use any kind of interactive communication between you and your students or between students themselves on WebCT? If yes, how?*
3. *What are the main reasons that discourage you from using the discussion board?*
4. *How do your students participate in in-class discussion?*
5. *Based on your experience, do you think students prefer in-class discussion or online ones and why?*
6. *Which mode of course-related discussion do you personally prefer? and Why?*
7. *How often do you ask your students to submit written assignments per semester?*
8. *How frequently do you think students plan, draft and re-draft their writings before submission?*
9. *Do you think that using the discussion board could be advantageous for you or for students? If yes, how?*
10. *What disadvantages can encouraging students to participate in interactive discussions with peers have?*
11. *Do you plan to use the discussion board in future courses? If yes, why?*
12. *Do you have any more comments?*

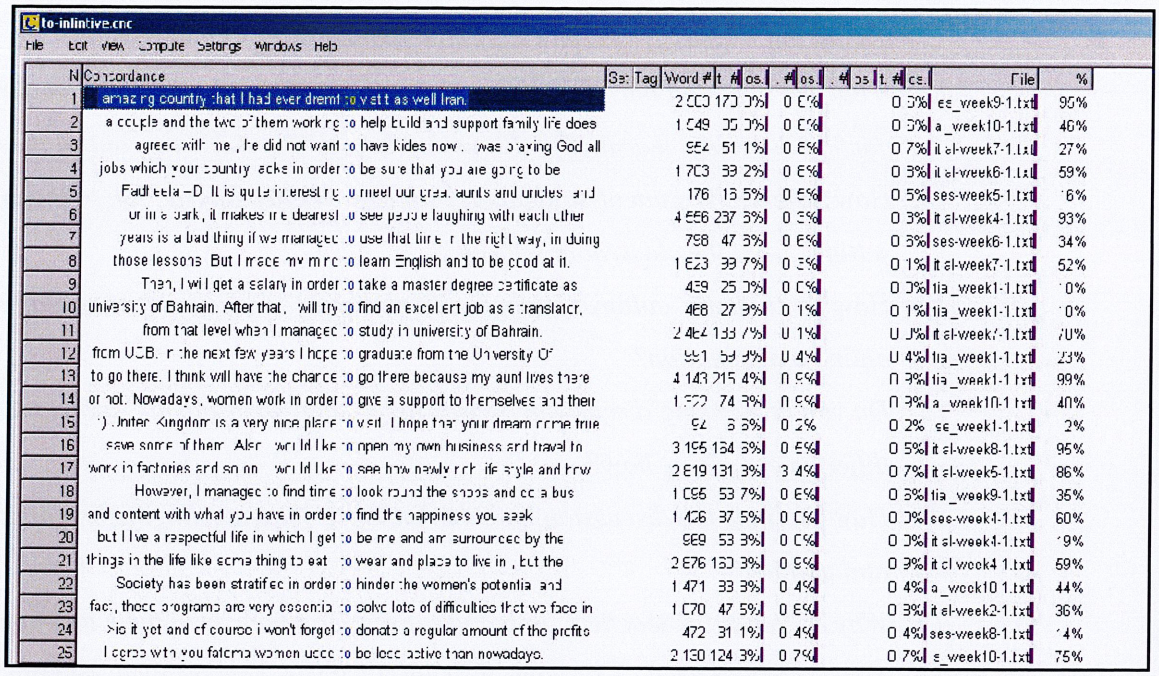
b) Teachers that used discussion boards

1. *How long have you been using interactive tools in your online courses?*
2. *Which tool do you find most effective? and why?*
3. *How important is it that your students use the discussion board? and why?*
4. *How effective do you think using the discussion board is in improving students' learning?*
5. *What is the main role of the discussion board in your instruction?*
6. *How different is students' participation between in-class discussion and online discussion?*
7. *What is your role in the discussion board?*

8. *Do you assess students' online participation? If yes, why and how?*
9. *Who are the most active participants in the discussions?*
10. *What do you think of the discourse students produce in the discussion board?*
11. *Do you provide corrective feedback to students' online contributions in the discussion board? If yes, how and how frequent?*
12. *What are the main barriers, if any, that might negatively influence student participation and learning in discussion board? How do you control these barriers?*
13. *How different is student-student and student-teacher interaction in the online settings from the classroom settings?*
14. *How do students' cultural background and/or academic competence affect their online participation?*
15. *Do you think using discussion boards helps cater for students' individual differences? If yes, how?*
16. *How useful is the discussion board to enhance students' linguistic output quantity and quality?*
17. *Why do you think teachers do not use discussion boards in their instruction?*
18. *Have you ever used chat rooms in WebCT? If yes, how frequent and how do you compare the effectiveness of using them to the use of the discussion board?*
19. *What are the main advantages of using discussion boards in learning settings?*
20. *What are the main disadvantages of using discussion boards in learning settings?*
21. *What are the gains and shortcoming of using discussion boards for you as a teacher?*
22. *How do you think the use of discussion boards can become more effective? Any recommendations?*
23. *Do you have any more comments?*

APPENDIX J

Samples of the Corpus Analysis of the Linguistic Features



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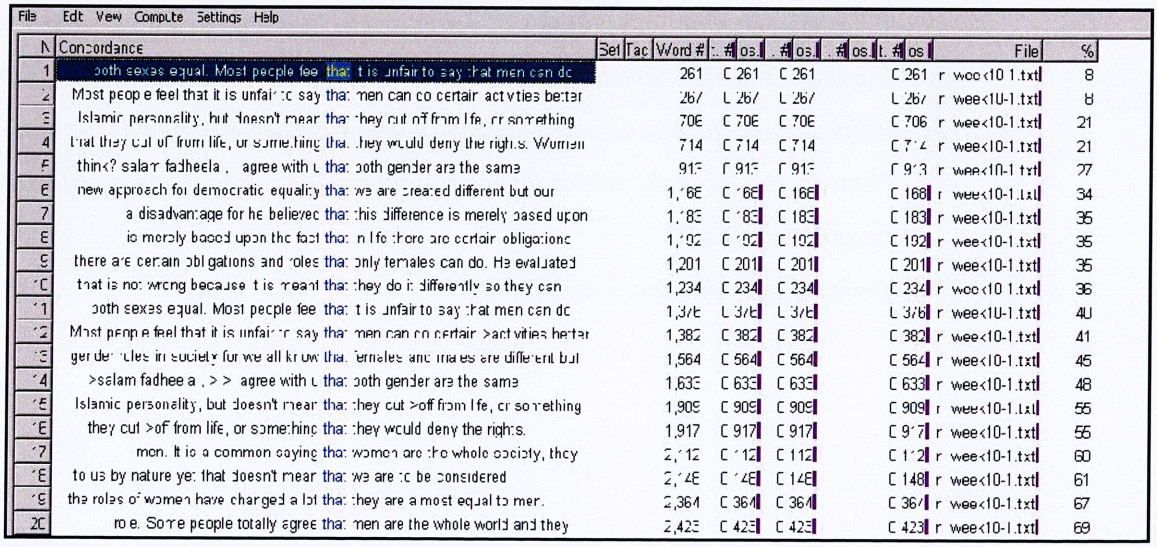
N	Concordance	Se:	Tag	Word #	t. #	os.	. #	os.	. #	os	t. #	os.	File	%
1	amaz rg country :hat I had ever dremt :o v sit as well Iran.			2 CC0	17J	0%	0	0%			0	0%	es_week9-1.txt	95%
2	a couple and the two of them work rg :o help build and support family life does			1 C49	3C	0%	0	0%			0	0%	a_week10-1.txt	46%
3	agreed with me , he did not want :o have kides now . was praying God all			954	51	1%	0	0%			0	0%	it sl-week7-1.txt	27%
4	jobs which your country asks in order :o be sure that you are going to be			1 7C3	39	2%	0	0%			0	0%	it sl-week6-1.txt	59%
5	Fadheela –D It is quite interest rg :o meet our grea. aunts and uncles and			176	1C	5%	0	0%			0	0%	ses-week5-1.txt	16%
6	or in a park, it makes me dearest :o see people laughing with each other			4 E56	237	5%	0	0%			0	0%	it sl-week4-1.txt	93%
7	years is a bad thing if we managed :o use that time r the right way, in doing			798	47	5%	0	0%			0	0%	ses-week6-1.txt	34%
8	those lessons But I made my mind :o learn English and to be good at it.			1 E23	39	7%	0	0%			0	0%	it sl-week7-1.txt	52%
9	Then, I will get a salary in order :o take a master degree certificate as			459	25	0%	0	0%			0	0%	tia_week1-1.txt	10%
10	university of Bahrain. After that, will try :o find an excellent job as a translator,			468	27	9%	0	1%			0	1%	tia_week1-1.txt	10%
11	from that level when I managed :o study in university of Bahrain.			2 4E4	133	7%	0	1%			0	1%	it sl-week7-1.txt	70%
12	from UCB. In the next few years I hope :o graduate from the University Of			991	5d	9%	0	4%			0	4%	tia_week1-1.txt	23%
13	to go there. I think will have the chance :o go there because my aunt lives there			4 143	215	4%	0	9%			0	9%	tia_week1-1.txt	99%
14	or not. Nowadays, women work in order :o give a support to themselves and their			1 522	74	8%	0	9%			0	9%	a_week10-1.txt	40%
15	). United Kingdom is a very nice place in visit. I hope that your dream come true			92	3	3%	0	2%			0	2%	es_week1-1.txt	2%
16	save some of them. Also would like in open my own business and travel to			3 195	134	3%	0	5%			0	5%	it sl-week8-1.txt	95%
17	work in factories and so on would like in see how newly rich life style and how			2 E19	131	3%	3	4%			0	7%	it sl-week5-1.txt	86%
18	However, I manage :o find time :o look round the shops and co a bus			1 C96	53	7%	0	E%			0	3%	tia_week9-1.txt	35%
19	and content with what you have in order :o find the happiness you seek			1 426	37	5%	0	C%			0	3%	ses-week1-1.txt	60%
20	but I live a respectful life in which I get :o be me and am surrounded by the			9E9	53	3%	0	C%			0	3%	it sl-week1-1.txt	19%
21	things in the life like some thing to eat :o wear and place to live in , but the			2 E76	13D	3%	0	9%			0	3%	it sl week4 1.txt	59%
22	Society has been stratified in order :o hinder the women's potentia and			1 471	33	3%	0	4%			0	4%	a_week10 1.txt	44%
23	fact, these programs are very essentia :o solve lots of difficulties that we face in			1 C70	47	5%	0	E%			0	3%	it sl-week2-1.txt	36%
24	>is it yet and of course i won't forget :o donate a regular amount of the profits			472	31	1%	0	4%			0	4%	ses-week8-1.txt	14%
25	I agree with you fatema women used :o be less active than nowadays.			2 13D	124	3%	0	7%			0	7%	s_week10-1.txt	75%



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N	Concordance	Sel	Tag	Word #	t. #	os.	. #	os.	. #	os	t. #	os	File	%
1	both sexes equal. Most people fee that :t is unfair to say that men can do			261	C 261		C 261				C 261		r week10 1.txt	8
2	Most people feel that it is unfair :o say that men can do certain activities better			267	L 267		L 267				L 267		r week10-1.txt	8
3	Islamic personality, but doesn't mean that they cut off from life, or something			70E	C 70E		C 70E				C 70E		r week10-1.txt	21
4	that they cut off from life, or something that they would deny the rights. Women			714	C 714		C 714				C 714		r week10-1.txt	21
5	think? salam fadheela , agree with t that both gender are the same			91E	C 91E		C 91E				C 913		r week10-1.txt	27
6	new approach for democratic equality that we are created different but our			1,16E	C 16E		C 16E				C 168		r week10-1.txt	34
7	a disadvantage for he believed that this difference is merely based upon			1,18E	C 18E		C 18E				C 183		r week10-1.txt	35
8	is merely based upon the fact that in life there are certain obligations			1,192	C 192		C 192				C 192		r week10-1.txt	35
9	there are certain obligations and roles that only females can do. He evaluated			1,201	C 201		C 201				C 201		r week10-1.txt	35
10	that is not wrong because it is meant that they do it differently so they can			1,234	C 234		C 234				C 234		r week10 1.txt	36
11	both sexes equal. Most people fee that :t is unfair to say that men can do			1,3?E	L 3?E		L 3?E				L 3?E		r week10-1.txt	4U
12	Most people feel that it is unfair :o say that men can do certain >activities better			1,382	C 382		C 382				C 382		r week10-1.txt	41
13	gender roles in society for we all know that females and males are different but			1,564	C 564		C 564				C 564		r week10-1.txt	45
14	>salam fadheela , > > agree with t that both gender are the same			1,63E	C 63E		C 63E				C 633		r week10-1.txt	48
15	Islamic personality, but doesn't mean that they cut >off from life, or something			1,90E	C 90E		C 90E				C 909		r week10-1.txt	55
16	they cut >off from life, or something that they would deny the rights.			1,917	C 917		C 917				C 917		r week10-1.txt	55
17	men. It is a common saying that women are the whole society, they			2,112	C 112		C 112				C 112		r week10-1.txt	60
18	to us by nature yet that doesn't mean that we are :o be considered			2,14E	C 14E		C 14E				C 148		r week10-1.txt	61
19	the roles of women have changed a lot that they are almost equal to men.			2,364	C 364		C 364				C 364		r week10-1.txt	67
20	role. Some people totally agree that men are the whole world and they			2,42E	C 42E		C 42E				C 423		r week10-1.txt	69

APPENDIX K

Coding during the Content Analysis of Transcripts

FS Hi Amina. FS Although most types of media are still validating there existence, it is inevitable that they are doomed to be replaced. However the TV I believe will remain an interactive media for as long as we live but it ought to be transformed to various forms and presentations.RC FE I also have a few comments on your text which I hope will help a little =); PR I think some of your plurals are not clear and have small errors grammatically, for instance when referring to newspapers and media. FE You also need to be aware of the use of the preset perfect tense because you haven't used it when it should have been used, such as in "Using technology increase" and "internet becomes". I also have a personal note on the last opinion you offered when you said "I strangely believe", I think if you are offering your opinion it shouldn't be strange to you since you believe in it =) Hope I helped, FJ
FS PR As far as I understood, we all agreed that the media based on the huge role it plays in our growing societies will eventually be transformed in a way that we will recognize it different that what we have it in our current time =)! Imagine that! I mean, personally, the usage of current media is quite difficult to me and I would find it nearly impossible to use more sophisticated versions! FE I hope no more new technologies are discovered and that we stick with what we have now =D! FJ
Very true. FS The most important thing in life is having FS people who love you as Fadeela mentioned PR and teens who say otherwise just don't know the value of things unless they lose them I guess.
FS That is true Amina but some people need money to be happy which means that happiness to some is found when money is available. Such people are those of relatives with diseases and need treatment or even need a roof to gather all their loved ones safely! FS

APPENDIX L

Extracts of Analysis of Experimental and Control Students' Writing Development: EFC/C

	fun, but friends are needed in your hard time, and if you have a group, you ~~definetely~~ can find –at least- one of them to stand beside you which is better than having one friend who could be ~~bussy~~ somewhere. Finally, ~~Knowing~~ a lot of friends makes you	
4	~~acquinted~~ with different types of people which is more useful for ~~everybody~~ than to know only one ~~type friend~~. To sum up, I think that ~~finding~~ in the middle of a group of friends gives you power to face the world which is better ~~that~~ sitting in a corner of it with one person. All ~~people~~ ~~lives~~ in this life. We must have a friend to share with ~~him~~ ~~own~~ life even when you have a good or bad life. So, do you prefer to have a small circle of friends or to have one best friend? Some people prefer to	
5	have ~~a~~ one best friend rather than a small circle of good friends because they have ~~alot~~ of ~~idea~~ to explain this ~~chose~~. First of all, they ~~thought~~ it's ~~more~~ difficult to find a good friend in this life. Also, some of them ~~they~~ don't want to know ~~alot~~ of ~~peopls~~ ~~they~~ prefer to be alone. ~~Although~~, they are busy and they don't have time to give ~~it~~ to ~~thier~~ friends. ~~on~~ the other hand, many of people ~~loved~~ to have a small circle of friends, ~~because~~ they ~~said~~ ~~the~~ life without friends ~~it's~~ like a grave. ~~so~~, they ~~needs~~	
6	friends to share with ~~him~~ ~~own~~ life even when ~~you~~ are in a bad mood. You can do ~~alot~~ of things with a small circle of good friends such ~~as~~, ~~helps~~ each other, ~~mack~~ a picnic or ~~travell~~ ~~some~~ place, and they	

	can enjoy ~~themself~~ in many ~~way~~. To sum up, ~~In~~ my opinion, I prefer to be ~~wirh~~ a small circle of good friends, ~~becuase~~ I ~~thought~~ it's better to be a ~~socialty~~ and have ~~alot~~ of friends. Having friends is a very important thing in our life. It makes us stronger and more powerful, ~~we~~ can overcome	
7	lots of issues when we have lots of friends around us. Some people think that having ~~small~~ circle of good friends is better than one best friend. They ~~said~~ that everyone should have ~~group~~ of friends that ~~you~~ ~~share~~ a lot of interests with ~~for~~ example, one friend that ~~share~~ the same job, another ~~friend~~ ~~share~~ the same hobbies and ~~some one~~ ~~that~~ you feel comfortable talking with about your personal issues. The ~~perpose~~ of having so many good ~~friend~~ is that when you are having a problem, you can easily know who is the one to turn to.	
8	In my opinion, that takes away your capabilities to deal with different people. It is often said that a true friend is better than many but attaching yourself to one person isn't a good thing. To sum up, in order to live peacefully in the world, we must widen our experiences and vary our friends. Having friends is such a good advantage in our life. Most ~~of~~ people prefer to talk and be social, ~~however~~, some other people like to keep their secrets to one person only. In my point of view, having a small circle of good friends is	

APPENDIX M

Guidelines for Clauses, Word Counts, Grammatical and Lexical Items and Errors
(Adopted from Polio, 1997:138-139, Sotillo, 2000:109-11 and others)

Clauses

a. **A clause** equals an overt subject and a finite verb. The following are only one clause each:
e.g. He wanted John to leave the house (Polio, 1997).

b. Only an imperative does not require a subject to be considered a clause (Polio, 1997).

c. In a sentence that has a subject with only an auxiliary verb, do not count that subject and verb as a separate clause. (e.g. John likes to ski and Mary does too; John likes to ski, doesn't he?; John is happy and Mary is too) (Polio, 1997).

d. **Dependent clauses**: A dependent/subordinate clause is part of the sentence. It has a subject and verb but its meaning is dependent on the independent clause. Dependent clauses include nominal clauses, adjectival/relative clauses and adverbial clauses.

These clauses can be introduced by any of the following subordinate conjunctions: *after, although, because, if, until, where, since, when, while, as if, as though, so that, in order that, so as, in order, as (many) as, more than, although, even though, despite, so (that),* or relative pronouns: *who, which, that, whose, etc.* (Quirk *et al.*, 1990).
e.g. I told him *that I needed more time. (Nominal clause)*
The film *that you told me about* was boring. *(Adjectival clause)*
Although he was working hard, ... (Adverbial clause)

These clauses can be at the beginning of the sentence or can be embedded using complementizers such as *that.*(e.g., "I thought *(that)* things were not so difficult in this country"). These clauses can stand on their own as grammatical sentences or as the main clause of a larger clause if the complementizer is omitted. (e.g., "Things were not so difficult in this country.") (Sotillo, 2000)

Word Count (with an additional rule)

a. Count contractions as one word whether correct or not (Polio, 1997).
b. Count numbers as one word (Polio, 1997).
c. Count proper nouns in English and in other languages as they are written (Polio, 1997).
d. Do not count hyphenated words as single words. (e.g. well-written = 2 words) (Polio, 1997).
e. Don't include essay titles in word count (Polio, 1997).
f. Count words as they are written, even if they are incorrect. (e.g. alot = 1 word) (Polio, 1997).

g. Derivatives are considered different words.

Grammatical and Lexical Items

a. Grammatical words: prepositions, pronouns, auxiliary verbs (*do, must, ought, used and dare*), conjunctions, articles and particles. Auxiliary words are formed by conjugation into the different forms (*am, is, are, shall, should, be, being, been, was, were, will, would, has, have, having, had, do, does, did, can, could, may, might, must, ought(to), get, got, gotten*).
b. Lexical words: nouns, lexical verbs -non grammatical verbs-, adjectives and adverbs with adjectival base (Engber, 1995: 145).

Error Guidelines

a. Do not count punctuation errors except at sentence boundaries(Polio, 1997).
b. Base tense/reference errors on preceding discourse; do not look at the sentence in isolation (Polio, 1997).
c. Be lenient about article errors from translations of proper nouns (Polio, 1997).
d. Disregard an unfinished sentence at the end of the essay (Polio, 1997).
e. Count missing commas in restrictive clauses, inappropriately placed commas, and missing commas after prepositional phrases as errors (Sotillo, 2000).
f. Count article omissions as errors (Sotillo, 2000).
g. Count errors in capitalization (Sotillo, 2000).
h. Count as error non-native usage errors in syntax and morphology (Sotillo, 2000). Example: "John my next door neighbour is a person who spent his time doing nothing but watching TV."

APPENDIX N

Use of Additional Rater during Analysis

Functional Moves per Student

ST.1: My estimate: 33 Rater's estimate: 29 Agreement %: 88

Moves	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOTAL
PN	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			13
PR																
PA																
FS	✓	✓	✓	✓	✓	✓	✓	✓	✓							9
FE	✓	✓	✓	✓	✓	✓										6
FA	✓															1
RA	✓															1
RD	✓															1
RC	✓	✓														2

ST.2: My estimate: 29 Rater's estimate: 24 Agreement %: 86

Moves	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOTAL
PN	✓	✓	✓	✓												4
PR																
PA	✓															1
FS	✓	✓	✓	✓	✓	✓	✓	✓	✓							9
FE	✓	✓	✓	✓	✓	✓	✓									7
FA																
RA	✓	✓														2
RD	✓															1
RC	✓	✓	✓	✓												4

ST.3: My estimate: 19 Rater's estimate: 16 Agreement %: 84

Moves	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOTAL
PN	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				12
PR																
PA																
FS	✓	✓														2
FE	✓	✓														2
FA																
RA	✓	✓														2
RD	✓															1
RC																

Rater's Signature: .....

APPENDIX O

Participation in In-Class Discussion Form

ENGL 205
Section 2 (Control Group)

Date: .....

No.	Student	1st lecture		2nd lecture		3rd lecture		Total		Notes
		T.	St.	T.	St.	T.	St.	T.	St.	
1										
2										
3										
4										
5										
6										
7										
8										
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19										
19										
20										

General Notes:

جامعة البحرين
المكتبة
LIBRARY
UNIVERSITY OF BAHRAIN

APPENDIX P

Transcription of Interviews

The recorded interviews were transcribed orthographically to provide a record of students' and teachers' responses, following some procedures that deviated from standard conventions:

1. A broad orthographic transcription system which used punctuation and some markers but disregarded phonetic prosodic features was prepared and the minimum rules of conventions were used since the aim of this study was to gather opinions and not to analyse conversational discourse.
2. After English interviews were transcribed and Arabic ones translated, transcriptions were handed to the additional rater who verified and amended them.
3. A number of layout rubrics were followed when interview responses were quoted inside the chapters:
    - 1-inch was used all around as the margin
    - Times New Roman 11pt was considered ideal for the quotations
    - Quotations were italicised
    - Single spacing was used
    - Quotation marks were used for reported speech
    - Contraction of copulas and modals was used
    - Three dots (...) were used inside quotations to indicate a continuation of the topic and an omission of information that were not on-topic. The omitted parts were kept in the original transcripts and used in presenting other topics.
    - Pauses were not indicated for not serving the aim of the interviews