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أثر التواصل في بيئة الحاسب على التعلم الإلكتروني التعاوني

والاتجاهات نحو الكتابة الأكاديمية

د. ماجد عبد الكريم الحربي

أستاذ اللغويات التطبيقية المشارك بقسم اللغويات

كلية اللغات والترجمة - جامعة الملك سعود

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Effects of Computer Mediated Communication on Collaborative e-Learning and attitudes toward Academic Literacy

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Abstract:

The objective of this study was to examine the impact of Computer Mediated Communication (CMC) technology on EFL students' writing processes and performance and their attitudes toward CMC in collaborative e-learning of writing. The technology used involved interacting, communicating, constructing knowledge, and collaborating with peers and its effects on the students' attitudes toward academic writing in the e-learning environment of Blackboard. Quantitative and qualitative research methodologies, descriptive and interpretive in nature, were used to assess the results from the investigation. Results of the study indicated that CMC played an important role in facilitating students' understand their writing tasks. It provided extended opportunities for collaboration with students and instructors and was seen to be beneficial on three grounds. First, CMC assisted EFL learners successfully revise their essays in a relaxed way. Second, it helped learners generate ideas for their own essays after they read their peers' essays and comments provided. Third, it was perceived by learners as significantly helpful in improving their literacy through written online feedback. Participants' perceptions indicated through their responses to the attitudes scale about CMC regarding its convenience, effectiveness, usefulness, and improved communication are mostly positive. Conclusions and general recommendations based on the study are summarized at the end of this report.

Key words: Computer Mediated Communication; Collaborative e-Learning; Academic Literacy; synchronous versus asynchronous communication; attitudes

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الملخص:

هدفت الدراسة الحالية إلى البحث في أثر التواصل عبر بيئة الحاسب الآلي في تنمية عمليات الكتابة الأكاديمية، وأداء الطلاب فيها واتجاهاتهم نحوها، في تعلمهم للكتابة عبر التعلم الإلكتروني التعاوني، وقد شملت التقنية المستخدمة أنماط التفاعل والتواصل وبناء المعارف والتعاون مع الأقران وأثرها في اتجاهات الطلاب نحو الكتابة الأكاديمية في بيئة بلاكبود للتعلم الإلكتروني، وقد استخدم الباحث منهجيات البحث النوعية والكمية ذات الطبيعة الوصفية والتأويلية لتقييم نتائج الاستقصاء الحالي، وقد أشارت نتائج الدراسة أن التواصل الحوسب يقوم بدور مهم في تسهيل فهم الدارسين لعمليات الكتابة، كما وفر فرصاً عديدة للتعاون بين الدارسين والمعلمين، وقد تبين فعاليته على ثلاثة أسس: الأساس الأول، ساعدت تقنية التواصل الحوسب المتعلمين في مراجعة مقالاتهم بطريقة خالية من التوتر، الأساس الثاني، ساعدت هذه التثنية المتعلمين في توليد الأفكار لمقالاتهم بعد قراءة مقالات زملائهم وتعليقات زملائهم على مقالاتهم، الأساس الثالث، أدرك المتعلمون أن هذه التقنية مفيدة في مساعدتهم على تحسين مهارات الكتابة العلمية لديهم، من خلال التغذية الراجعة في بيئة التعلم الإلكتروني، وقد أشارت مدركات الطلاب على مقياس الاتجاهات المعد حول مناسبة تقنية التواصل الحوسب مؤكدة فعاليتها وجدواها وتحسن الاتصال مما أنبأ عن إيجابية اتجاهات المتعلمين نحو هذه التقنية، وقد انتهت الدراسة باستخلاصات ختامية وتوصيات بناء على نتائج البحث.

الكلمات المفتاحية: التواصل الحوسب؛ التعلم الإلكتروني التعاوني؛ الكتابة الأكاديمية؛ التواصل الفوري المتزامن وغير المتزامن؛

الاتجاهات .

Introduction

Over the past three decades, computerized learning has become a powerful and increasingly indispensable feature in many aspects of our lives. This is particularly true for students and teachers. They can not only access millions of learning resources online from authentic and adapted sources of learning, but also manipulate, interact and study learning materials in lively, interactive fashion via computer assisted language learning (CALL). There is no doubt that since the early 1990s, technology has revolutionized teaching and learning and instructional aids across disciplines through scaffolding, assisting and supplementing traditional classroom learning materials and activities. Technologies used for foreign language learning and teaching have varied over time, and as professional concerns have shifted from one area and one technology to another, the field of CALL has begun to develop a scientifically and empirically grounded basis for emerging research in English language teaching (ELT). In a discipline whose insights have historically been largely anecdotal and descriptive, CALL has been shaped over the past two decades by attempts to validate statistically the claims of classroom practitioners and the postulates of theoreticians impressed by its perceived advantages for effective instruction.

This change in focus with regard to technology assisted language learning and teaching has yielded two significant results, one positive and the other negative. On the positive side, the advent of CALL into the language classroom and the plethora of research now conducted in the field has significantly increased professional knowledge about “what works” in what settings and under what conditions. But the flip side of the coin is that the insights yielded by current CALL research have been incomprehensible to many classroom practitioners. Another problem is that technology is evolving so rapidly that conclusions become obsolete or out of date. Both researchers and practitioners are continually racing to keep up to date with

evolving opportunities and research conclusions.

Recently a new generation of computer-assisted language learning (CALL) has come into existence – namely, computer mediated communication (CMC), to help develop communicative language learning. The medium of CMC has inspired researchers to investigate the educational benefits of collaborative e-learning and blended learning in developing language, critical thinking, problem-solving and knowledge discovery and construction skills (Ballera & Salih, 2010; Okonta, 2010). In addition, the structural relationships between college learners in e-learning environments could improve the social presence of teachers and learners and their self-efficacy and learning satisfaction, but more research in this vein is needed (Roh, 2015). Some few studies, however, have indicated that collaborative writing in a computer-supported classroom can lead to enhanced reflection on writing products, self-assessed beliefs and attitudes toward writing (Lin, 2015; Olmanson, Kennett, Magnifico, Mccarthey & Searsmith, 2016).

There have been several studies to explore the impact of CMC on EFL learning, but there is still a need to operationalize certain elements, such as web-based CMC, in a task specific environment in EFL classrooms. Considerable research has been conducted on different aspects of CMC. For example it has considered issues of affect, metacognition, and psychological factors influencing CMC in the classroom including attitudinal and motivational factors (Antonietti, Colombo & Lozotsev, 2008; Boekaerts, Pintrich, & Zeidner, 2000; Gal-Ezer & Lupo, 2002; Derks, Fischer, & Bos, 2008; Gao & Lehman, 2003; Gao, 2003; Israel, 2005; Mishra & Yadav, 2006), effective presentation of academic literacy instruction in asynchronous CMC mediums (Hirvela, 2007; Goodfellow, 2005); active, collaborative participant learning (Abrams, 2001; Zeng & Takatsuka, 2009), and many other variables. In addition, a wide range of prior research has considered the potential of CMC in facilitating second language

collaborative learning. However, there is little research relating to EFL.

Much of the research dealing with the use of CMC for language studies and for EFL has been conducted in settings where the writing symbols and language structures are similar to English and where there is general acceptance of peer consultation and support in academic studies (Cheng, 2007). In Saudi Arabia, writing symbols are different and there are substantial differences in language traditions, where there are cultural differences that affect the willingness of students to engage fully in detailed and continuing peer consultations in refining and improving their writing (McMullen, 2009, p. 419), it is required to conduct such a study in this context to confirm prior research findings. This study, therefore, sought to investigate Saudi Arabian Arabic speaking students' attitudes toward CMC in EFL instruction following its delivery via Blackboard, their perceptions of its effectiveness, and its impact on their academic writing in EFL.

Literature Review

Computer mediated communication [CMC] has been increasingly used in the educational environment, especially in the last two decades, owing to huge advances in world wide web technologies. Initially it was brought in to support distance learning. More recently it has grown into a popular and widely used pedagogical tool providing online education in almost all academic fields. One of the most exciting aspects of CMC involves synchronous (or instantaneous) interaction on a local area network (LAN). The research literature on foreign and second language learning reports that this type of electronic discussion encourages learners to construct knowledge collaboratively (e.g., Beauvois 1992a 1992b; Berge & Collins 1994; Meunier 1994; Warschauer 1996, 1997). Additional benefits of CMC include greater participation by people who have been less engaged in educational activities (Bruce et al. 1993), shy students, and the physically challenged (Kiesler, et al. 1984).

An important aspect of CMC technology is that it helps create group interaction

(Bruffee 1984, 1986; Johnson & Johnson 1987) through sharing which is the "use of an online workplace" for exchanging resources, negotiating ideas and coordinating collaboration (Wang 2010, p. 1271). Research investigating online and chat interaction via CMC technology is now conducted to explore how this medium could be utilized to enhance academic writing learning (Gass & Mackey, 2006). Vance et al. (1997), affirm the positive effects of CMC in fostering collaborative activities of ESL students among themselves and between students and teachers. Vance et al. (1997) recommended that learners should be provided with proper training for using CMC for collaboration and teamwork to take place effectively and that teachers and curriculum designers use online and personal journals, interviews, and observation to evaluate how effective CMC is in helping students learn more effectively.

Similarly, for effective collaboration to take place, instructors need particular skills and training. Hampel (2009) has highlighted the need to train teachers in order to enhance online interaction and collaboration. Kessler & Bikowski (2011) emphasize the importance of CMC for inducing effective classroom interaction for language learning.

In the ESL research currently available, CMC has been demonstrated to result in improved motivation, increased student involvement in the learning process, greater self-confidence and autonomy, and more active processing (Shetzer & Warschauer, 2000; Stepp-Greany, 2002). Vance, Fitzpatrick, and Sackville (1997) found that e-mail, chat, and conferencing promoted communication and collaboration among students. In addition, the students involved in their study had an overwhelmingly positive response to the inclusion of CMC-based activities in their course and felt that they facilitated their acquisition of English language competence.

Affective concerns, such as students' attitudes toward learning and motivation, have been shown to improve when students engage in interactive computer settings (Beauvois, 1998; Gal-Ezer & Lupo, 2002; Liaw, Chen & Huang, 2008; Warschauer,

Turbee & Roberts, 1996). CMC also has potential second language learning advantages in the areas of comprehensible interaction and collaborative learning (Kitade, 2000; Vance et al., 1997). Kern (1995) found that students' language production increased in quantity and variety when they engaged in synchronous CMC rather than in face-to-face discussions. Researchers also report second language writing skills are improved by networked computer activities (Ayres, 2002; Chavez, 1997; Sullivan & Pratt, 1996; Warschauer, 1996, 2002).

Research exploring the cognitive benefits of CMC for students' writing typically tend to conclude that students gain more skills in critical reflection (e.g. Weasenforth & Meloni 2002). Moreover, students participated in expert (by providing peers corrective feedback) and novice (by seeking peers' advice) discursive practices in the construction of meaning (Chung et al. 2005; Lea, 1998; Lea & Street, 1997; 1999; 2006; Lea, 2004; Quinn 2011; Sotillo 2000; Weasenforth & Meloni, 2002).

However, although such studies are useful in highlighting how the writing process can be facilitated through CMC – the asynchronicity in particular – they do not show how students can gain further knowledge about writing through the interactional benefits associated with CMC such as increased collaboration and coordination, enhanced motivation and self-confidence and decreased anxiety, in addition to providing a more student centered environment.

In the context of Saudi Arabia where the introduction of CMC technology is a recent phenomenon, where language structures and writing formats differ significantly from English and there is limited experience for students in mutual collaboration and support, more work is needed to see what type of interaction helps achieve students' collaboration (McMullen, 2009, p. 431). The relative lack of research in this area motivated the present study into Arabic speaking students' written synchronous and asynchronous CMC interactions in order to find how this medium was utilized to carry

out tasks set in a blended academic writing course.

In a typical Saudi Arabian context, this investigation can provide an excellent opportunity for teachers and researchers to explore the impact of technology on learning outcomes and teaching methodology. With the provision of the Blackboard® LMS to facilitate and blend teaching and learning with the face-to-face classroom in the department of English and the researcher's interest and experience in teaching writing, it was decided to investigate the impact of CMC on students' attitudes toward learning of academic writing in this context.

Significance of the study

This study sought to explore a more communicative, reflective, and interactive approach toward teaching and learning writing using on-line interactive media. Whereas previously, teachers considered how to use computers in order to teach language, "it is now essential also to consider how to teach language so that learners can make effective use of information technology" (Shetzer & Warschauer, 2000, p. 172). It is also thought that through networked language teaching students can acquire electronic literacy skills which may help them become better writers for academic purposes, and assist them with participating and writing in on-line environments with native speakers in academic and professional environments in the future. By so doing, they can become autonomous learners and broaden their knowledge base, interpret, express, and share what they have learned, and become part of a wider and more diverse community that includes native and non-native speakers of English. If it could be shown that the approach taken could be effective for Saudi Arabian students with relatively limited experience in peer communication and support in learning activities and a native language substantially different from English in structures and writing formats it would be significant not only for Arabic students in this region, but also for other countries including Asia, Africa and elsewhere where similar differences exist.

Research Questions

1. How do EFL learners in a Saudi undergraduate college use CMC to develop their academic literacy?
2. How does interaction on CMC influence EFL learners' academic writing?
3. What are students' attitudes toward collaborative writing processes through CMC?

Research Method and Design

The researcher followed a mixed methods approach in this research, utilizing a case study design and using some quantitative measures to assess the participants' perceptions and attitudes toward CMC-collaborative eLearning. The quantitative data consisted of a self-perception attitude questionnaire and measures of the quantity of online participation. The qualitative data consisted of: (a) classroom observations of students' behaviors, (b) online discussion entries, (c) analysis of examples of students' academic writing, (d) students' drafts and revisions of written assignments, and (e) interviews with students and faculty. This qualitative data was obtained through classroom observations and diaries, questionnaires, online discussion entries, comments and students assignments (both first and final drafts), and interviews with the participants. From this data it was possible to obtain useful information about learners, their communicative strategies in writing and assignment tasks, their attitudes, and the nature of their improvement in academic writing. . These observations and students reflections about online written activities that were practiced on Blackboard during the study helped provide insights into how much progress participants were expected to make and actually made through the use of CMC.

Students used two types of collaborative online strategies: synchronous chat and asynchronous discussion board to assist their academic writing. The study investigated the transfer of ideas from synchronous and asynchronous interactions to student rough drafts, while using descriptive analyses and reports to gain insights into how the learners utilized the asynchronous discussion boards and synchronous chats for understanding the

development of their writing processes. Their online interactions were coded, quantified and analyzed to answer the first two research questions, how EFL learners use CMC to develop their academic ability, and how their interaction on CMC influences their academic writing.

Participants

The participants in this study were 44 second year students in the English Department, College of Languages and Translation, King Khalid University (KKU) in Abha, Saudi Arabia. The students were enrolled at the time of the study in a Writing IV class in the first semester of the academic year 2015-2016.

All 44 students participated fully in the teaching and learning activities involved in the study and completed the attitude questionnaires. Since it was difficult to code and analyze all the 44 students' online data and written assignments and also conduct interviews with them later, 10 participants were chosen for more detailed qualitative data analyses in interviews, online discussion entries and writing assignments. The selection of these 10 participants was carried out on the basis of initial data provided in the first part of the questionnaire that was distributed to all the students during the first week of their academic term. Care was taken to include participants representing different educational backgrounds, academic competence, computer literacy and experience with Blackboard learning management system.

Data Sources

Data for this study was collected from the following sources.

Online discussion entries (synchronous CMC):

Participants' online activities using CMC via Blackboard were observed and recorded. Students' interactions were explored with regard to communications in order to consider their impact on development of academic literacy from the start to the end of the study period. This data was also used to address the question of how the students used CMC to develop their academic literacy.

Peer feedback comments (asynchronous CMC):

Peer feedback activities were conducted in order to collect comments and feedback by students to their peers on the draft essays they wrote during both synchronous and asynchronous activities. This information was used to trace the influence of CMC on the participants' writing ability in essays and assignments. Their first and final drafts were compared in order to track how much of the peer feedback has been incorporated into the participants final drafts.

Written assignments:

Students' major assignments were collected and analyzed for evidence of how they learned the skills of academic writing and what role CMC played in the process. Particular consideration was given to the things they had been taught such as structure conventions related to punctuation, paragraph structure, quotations, etc., development and growth of ideas in logical progression, and application of conventions related, for example, to distinguish between an expository essay and an analytical one.

This data was used to address the 2nd research question: How does interaction on CMC influence EFL learners' academic writing?

Interviews:

Semi-structured interviews were conducted with the ten selected students to investigate their perceptions of the process and effectiveness of collaboration using CMC. The interview questions asked are attached as Appendix B.

Attitude questionnaires:

The questionnaire consisted of three main parts: (1) an initial brief survey of personal information distributed in the first week of term describing students' demographic and language background, computing facilities and language study experience, with the aim of identifying important individual variables and providing the information to identify the ten students to participate in interviews and assist with detailed analysis in the case study; (2) questions about perceptions of the advantages and disadvantages of CMC and their experience with the system, and (3) their attitude toward the use of CMC in

EFL writing and its benefits for them in developing language skill. This questionnaire along with responses to interviews was used to answer the 3rd research question on their attitudes toward collaborative writing processes through CMC.

Teaching/Learning Processes

Conventional classroom instruction processes were modified by extensive use of computers for drafting and writing activities with assignments undertaken online and students placed in three-person groups (triads) for interpersonal communications. They were strongly encouraged to review and comment on each other's work. Drafts of essays and assignments were submitted online and retained for analysis by the researcher together with comments on these provided by other students.

Instructional tasks were presented and implemented within the Writing IV course as a blended course. Blended courses in King Khalid University are of three types, ranging from 30%, 50%, and 75% online portions of course classroom time. This course was taught by 75% online and 25% in face-to-face traditional classes. Writing instructors allow a certain amount of freedom in terms of the type of activities to engage learners in but they had to use activities that encouraged three types of interaction: content-learner, learner-learner, and instructor-learner. Content-learner interaction in this study was carried out through students' reading from online sites which were online repositories of information about academic writing. The students were required to read certain topics related to form, content, layout, genre conventions, structure, and language issues from these resources in addition to the course book reading and then post their responses to the discussion board over Blackboard. Learner-learner interaction was promoted through online forums created over Blackboard using its tools. Students were also required to choose from a list of essay topics and then post an outline of their initial ideas about the essay contents after brainstorming. Teacher-learner interaction took place in all the forums as the teacher

was the designer, activity initiator and mediator of all the forums. The Elluminate Live Sessions (synchronous) conducted over Blackboard were used by the writing instructor to present some issue already lectured about in the class and to post questions for discussing them live in these sessions. These synchronous discussions were recorded and later analyzed to trace various discourse functions. The writing instructor provided scaffolding for all these pedagogic activities. He also delivered lectures in both live classrooms via Elluminate live sessions and face-to-face classes. Learners were required to post their responses to the discussion questions posted by the instructor or their peers on the discussion forum. These activities were organized over three week time blocks. Typically, the time for submission of an assignment was one week after the discussion was posted by the teacher. In the following week the teacher provided essay topics for brainstorming and the students posted an outline of their initial ideas. In the third week the students were required to write and post the first drafts of their essays and provide feedback to their peers. On the last day of that week they were required to submit the revised drafts of their essays after making revisions in the light of the peer feedback.

Comments and responses by instructors were also provided online to the individual students so that it was possible to assess the extent to which those responses and those of their colleagues had been considered and used in final documents.

Results

To address the first research question : how do participants use CMC to develop their academic literacy, the researcher employed an interview with the participants during online interactions to identify what they perceived about their language use and how they negotiated with their peers and the teacher when they were engaged in CMC. The online discussion activities were recorded in both online discussions (synchronous) and Blackboard forums (asynchronous). The number of online communication activities and the extent of

students' participation varied across asynchronous forums. A total of 216 contributions were made by the 10 sub-sample participants in the period of 14 weeks of term work. This indicates that, on average, each participant contributed roughly 20 times in 14 weeks, which is about 1.5 entries per week in three forums. This shows that participants in the study did not manage to use the facilities of Blackboard as adequately as was needed or expected - a finding supported by teachers' observations in the interviews which indicated that the participants were not actively using the discussion boards effectively.

Interview questions were designed to elicit responses that could be compared with and interpreted alongside those from the questionnaire. The interviews were recorded and the responses were transcribed. They were then coded and categorized into different factors and issues corresponding to the attitude survey and the research questions.

The interpretive data analysis was based on the 10 selected participants in the case study. All these 10 participants had similar demographic and cultural backgrounds and almost the same technology competence, but varied experience and attitude toward academic writing. They all passed their higher secondary school exams and were in the second year of undergraduate studies. Seven of them had 8 years' experience of studying English in the public school system—normally one year at the primary school, 6 years in the middle and secondary schools, followed by one year in the university, while three of them had additional years of experience from the beginning of primary school had been in local private English language schools. The participants were beginners in the field of academic writing and demonstrated limited understanding and experience with the writing requirements and conventions in this field. However they were aware of the importance of reading literature and practicing different types of academic writing to gain access to the discipline. Computer competence of participants was

almost the same. All the participants had some experience of using computers and Blackboard as they had been using this learning management system for over a year during their college program.

The interview data was used to examine learners' perceptions of EFL writing and their implementation of Blackboard learning management system according to the following concerns: 1) learners' general attitude toward EFL writing; 2) learners' preference for the traditional teaching methodology or CMC for EFL writing; 3) learners' enjoyment of Blackboard tasks and more traditional tasks; 4) learners' self-estimation of their writing performance; 5) learners' perspective on computer-mediated communication and academic literacy; 6) learners' attitudes toward collaborative

Excerpt 1 (dislike)

Interviewer: Do you prefer writing in English?

Ahmad: Not really!

Interviewer: Could you give me some reasons for your dislike?

Ahmad: Writing in English is hard and grammar is much too difficult. (Translated from Arabic)

Excerpt 2 (neutral attitude)

Interviewer: What do you feel about writing in English?

Abdullah: Writing in English is difficult because of the traditions and rules of academic writing which are different from writing in Arabic. But sometimes I feel it is difficult because of the ideas and how to organize them and put them down on paper... It may be the topic or how much writing I should do or the ideas are what make it difficult for me to proceed with a writing assignment. (Translated from Arabic)

This can be compared with participants' responses to item 29 of the attitude survey, where a high percent agreed that they have problems with organization in written English. While highlighting the issue of students' self-efficacy, the opinions of three out of ten interviewees indicated that having their writing proofread or peer-reviewed, and having suggestions from others or simply reading others' writing would encourage them to learn and help them in developing their writing. However, two interviewees argued that having their writing exchanged or reviewed by others would

learning; 7) learners' participation in computer-mediated communication; and 8) formal or informal use of language; and 9) any other matters raised. Discussion of each of these concerns below is accompanied by excerpts from interviews and is summarized in Tables shown.

During the interviews, the researcher found that learners' opinions about EFL writing varied considerably. Though only one interviewee reported that he disliked writing in English, no other interviewees had negative attitudes toward EFL writing in general. The interviewee who disliked writing in English seemed to lack self-confidence and to under-estimate himself as seen in the excerpt below. He couldn't continue his interview in English and was the one who used Arabic most of the time.

have no effect on the development of their writing. Learners who were biased against the practice of peer-reviewing had doubts about their own ability to evaluate the quality of their colleagues' work. Hence, they would prefer not to have their writing exchanged or reviewed by their colleagues.

Few interviewees indicated that due to their poor English proficiency, they would be unable to help others. The following excerpt is taken from one interviewee who was not in favor of peer-reviewing.

Excerpt 3 (negative attitude to peer review and collaboration)

Interviewer: Why didn't you like to participate in the writing course forum over Blackboard?

Faisal: The problem is that my English is not equal to that of the teacher.umm I believe that most of us are at the same level of English knowledge. So, I don't think it's possible to correct the mistakes in our colleagues' writing on reading it.

Interviewer: So you don't feel it has any benefit?

Faisal: No, I don't think it's useful.

Similar views were shared by 3 out of 10 participants. However, five participants who supported the idea of peer-reviewing believed that the practice of peer-review through Blackboard forums would promote their English learning. The following

example is taken from one learner indicating that he learned how to edit his writing and how to organize paragraphs from peer-review on the Blackboard.

Excerpt 4 (positive attitude to peer review and collaboration)

Interviewer: How do you feel about the peer-review tasks you've been given on Blackboard Forums?

Ali: Thank God. I feel I can do it. I found that the way I developed my essay paragraphs using many clauses to present an idea is less skillful than that of my colleagues. I found others helped me to say what I wanted more effectively in few sentences with less clauses.

Interviewer: So you learned from these collaborations and you helped your class fellows?

Al: This is what I can learn from this practice. I would like to think about the way I develop my sentence and compare my writing with others. So I can learn from others. As for helping others' writing, if it is not too difficult, I might be able to help. I tried to help them when I could.

An interesting finding from interpreting interview data is that in the attitude survey responses a majority of participants were either not sure or had negative attitudes toward collaboration through Blackboard whereas the responses in interviews were more positive. This difference could be attributed to that while responding to the questionnaire; participants felt more at liberty to express negative opinions, whereas in the presence of the interviewer they wanted to be diplomatic and hence more eager to show their positive attitude toward collaboration.

With respect to learners' self-estimation of their writing performance, 6 out of 10 interviewees indicated that revision on computers was easier than revision with pen and paper and that editing on computer was more convenient. In addition they reported that writing on computers helped them to

correct spellings easily and increased their confidence and creativity.

Learners' perspectives on CMC were mixed during the interviews. Consistent with their responses to the questionnaire, four out of ten interviewees said that Blackboard made them feel isolated. They felt that it was better to communicate face-to-face than through CMC as there was no confusion between the participants. Another important issue was the availability of internet. Technical problems related to internet connectivity or availability and Blackboard Learning Management System (LMS) emerged as an important factor in influencing learners' attitudes toward its use. This suggests that if all learners' had ready access to the internet with no technical complications, attitudes toward CMC would be more positive.

Excerpt 5 (Negative attitude toward CMC)

Interviewer: Why do you prefer face-to-face communication?

Mohsen: I feel it is clearer and the feedback is more prompt and easy to get..... umhh.. I mean the other students are nearby and you can understand them and they can understand you clearly. But sometimes on Blackboard, I don't understand what the other person wants to say.... So CMC may not be as effective as your physical presence is in the real-life traditional face-to-face classroom.

Interviewer: Were there some other problems like internet availability or connectivity?

Mohsen: Yes. I don't have internet at home. So I only use it in the college lab. Sometime there it is very slow, sometime I have some work to do at home and can't stay at college. It is a big problem finding time and good internet to work with on Blackboard.

Interviewer: Do you think if you had good internet at home you would like to work on Blackboard more than you do now?

Mohsen: Of course. Also our college should provide wifi in all the buildings. If we get that, many students could work on their own laptops and tablets anywhere in college.CMC would become very easy.

Returning to positive attitudes, 7 out of 10 interviewees said they were able to improve their writing skill in terms of increased vocabulary knowledge, better sentence and essay structure and increased knowledge of formal writing conventions,

indicating that CMC positively affected their academic literacy. Excerpt 6 is an example of this.

Excerpt 6 (Positive attitude toward CMC as helping learners to improve their writing skill).

Interviewer: In terms of increased knowledge, can you tell me approximately in a percentage how much you thought your English writing improved?

Hasan: What do you mean?

Interviewer: I mean on a scale of 1 to 100, where you think you were before the semester and where you feel you now are after you finished the course?

Hasan:.... Umm... ah... I would say I improved from 70% to 90% in this course in terms of its objectives and the syllabus you gave us. To be honest, I still have problems with grammar and some writing mechanics. My poor vocabulary is another big problem. When talking about improvement, I think I haven't tried my best -- I could have tried more and learned more. But I learnt a lot about brainstorming for ideas, arranging the ideas consistently, paragraph organization, word choice in academic writing, etc.

With regard to academic literacy, most interviewees had to be given an explanation of what it meant. Following an explanation of what academic literacy means, seven out of ten responded positively, indicating that they did believe they had improved in that ability and their interactions on Blackboard

and through the reading materials and sample essays provided to them in the forums. Excerpt 7 illustrates this.

Excerpt 7 (Positive attitude toward usefulness of CMC in acquiring academic literacy).

Interviewer: Now that you know what academic literacy is, do you think CMC helped you improve your academic writing skills?

Hussein: I would comfortably say yes; Blackboard forums helped me a lot. I learned to write in an academic way. In the past, I didn't know how I began my essay, what type of language I used, and I did not know a lot about these things. But now I feel I know what is needed in different types of essays.

Interviewer: So can you tell me exactly what helped you the most?

Hussein: Ummh..... I think sample essays that were posted in the forum for discussion, comments by the teachers on my assignment and..... that site.... I forget its name..... it was very good. I learned good techniques from there about writing different essays..... things like thesis statement, relevant specific details..... all were very useful.

Findings also showed that CMC played an important role in helping students to understand their writing tasks. It provided extended opportunities for collaboration.. Participants indicated mostly positive comments and encouraging remarks when discussing other students' writing during peer review tasks, resounding in similar prior research (e.g., Jin, 2007). This also suggests that CMC assisted in the development of positive rapport and mutual confidence in students engaged in collaborative writing assignments. This also occurred in Blackboard forums through discussions and negotiations of meaning in the CMC technological processes. The use of CMC provided useful practice and opportunity to gain competence and improving their technical literacy, an essential element of academic literacy as suggested by several researchers.

In regard to differences in the use of discourse functions in synchronous and asynchronous modes, findings showed that such differences exist with regard to different types of discourse functions present in both the asynchronous and synchronous data. For instance, greetings, requests, clarifications and information seeking, agreeing or disagreeing dominated synchronous interactive swaps. But in asynchronous interactions, topic initiation moves and explaining dominated teacher- or student-generated questions, and comments

on postings made by both teacher and students. Despite this the most notable feature of these interactions, either synchronous or asynchronous, was that the interactions were mainly student-centered and the role of teacher was minimal. This supported the idea that CMC as compared to conventional face-to-face classroom interactions could facilitate a student-centered environment. Textual analysis of students' essays and writing assignments was used to address the second research question--: How does interaction on CMC influence EFL learners' academic writing? This analysis showed that there was a relationship between the written assignments and feedback activity. CMC-based feedbacks led to revisions in the structure and organization of paragraphs for achieving greater clarity and support or disagreement with an idea and suggestions to change or revise it. The feedback provided by peers in the forum activity can be divided into three types. The most common could be described as approving and encouraging what the writers had stated in their essays. However while this type of feedback was welcomed and might help students build their confidence, it might not help them very much in improving their writing. A more useful type of feedback which occurred less often contained multiple pieces of constructive advice. In summary, some students provided feedback which was

substantial and helpful for students in revising their drafts in an effective way. However, other feedback, while encouraging and supportive did not contain much practical or critical advice for improvement. A further consideration which limited the value of this process was that the frequency of providing feedback was quite low.

Overall, as revealed in the interviews students perceived the role of feedback provided via CMC in producing their final drafts as instrumental in shaping their final written assignments. Participants reported perceived benefits but some drawbacks in the way computer-mediated peer review was used.

In summary, the findings suggest that the use of CMC in the peer review forum on academic writing essays was considered beneficial by most students despite the fact that some of them thought it was not sufficient in terms of both quantity and quality. As such, CMC was seen to be beneficial on three grounds. First, it assisted EFL learners to successfully revise their essays in a relaxed and confident way. Second, it helped learners generate ideas for their own essays after they read their peers' essays and comments provided. Third, CMC was perceived as substantially useful in improving their academic literacy with the help of written online feedback. However, these findings cannot claim that the pedagogical approach involving CMC and collaborative e-learning cannot be an ideal method of teaching and improving writing, yet it is more beneficial than traditional methods or online learning methods used in isolation of collaborative learning.

The third research question was: "What are students' attitudes toward collaborative writing processes through CMC?"

The primary source of data to respond to this question was an attitude scale developed by the researcher based on a variety of sources (e.g. Chang 2007, Graham, Berninger, and Fan, 2007; Storch, 2005;

Yoon & Hirvela, 2004; Tsai, Lin & Tsai, 2001). The attitudes survey (Appendix A) was distributed to all students in the study. The survey consists of three major parts: personal information which was distributed at the beginning of the semester and two parts distributed at the end to ask about the students attitudes and opinions about the use and effectiveness of CMC. Responses to these last two parts were given on a five point scale ranging from strongly agree to strongly disagree with statements made.

The personal information was sought to describe students' experience of computer and internet use and availability, and language study experience in EFL, and provide data to assist in the selection of ten participants for detailed interviews and analysis in. The second part sought details about the students' academic writing experience through the use of CMC, their perceptions of its advantages and disadvantages and the effectiveness of the e-learning processes. The last part of the questionnaire related to students' confidence in their language ability and their experience of developing skill in using English both in traditional ways and through the use of technology.

Reliability of the scale:

By using Cronbach's coefficient alpha, reliability of all the 44 items in parts two and three of the scale was measured. Table 4.1 below shows the alpha reliability of the different parts of the survey. The results show that all the items are well connected and 36 out of 44 total items have a very high reliability coefficient. Normally an alpha value of .700 is considered a satisfactory value in the field of humanities and education. Section 1 of Part 2 of the survey had the lowest alpha value, reflecting different perceptions about aspects of writing in English with some quite positive and others about which they were less confident.

Table 1: Alpha Reliability

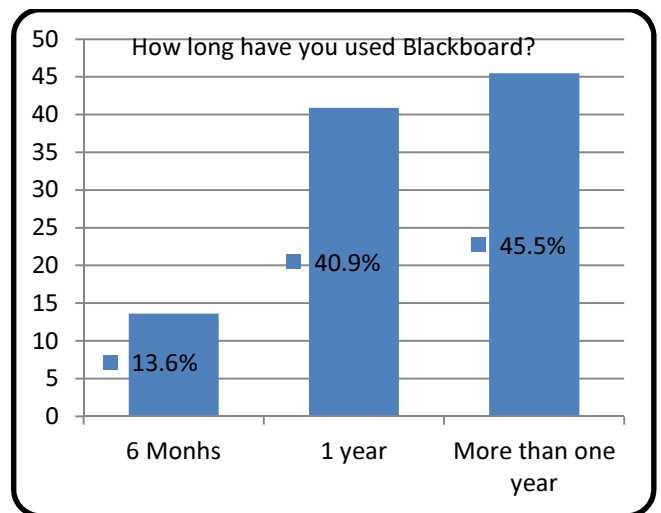
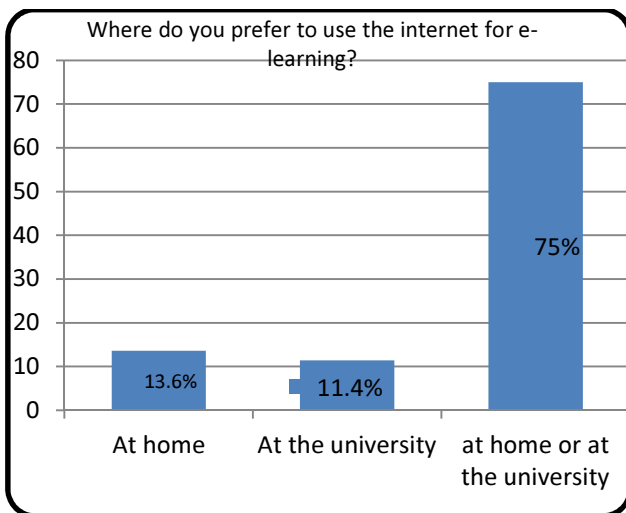
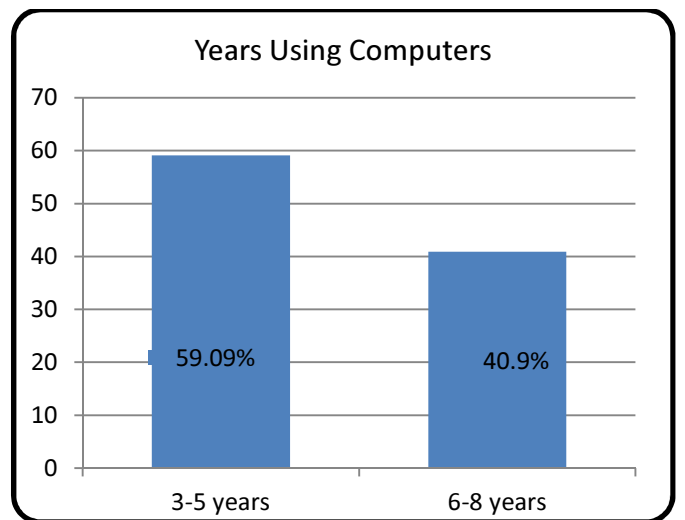
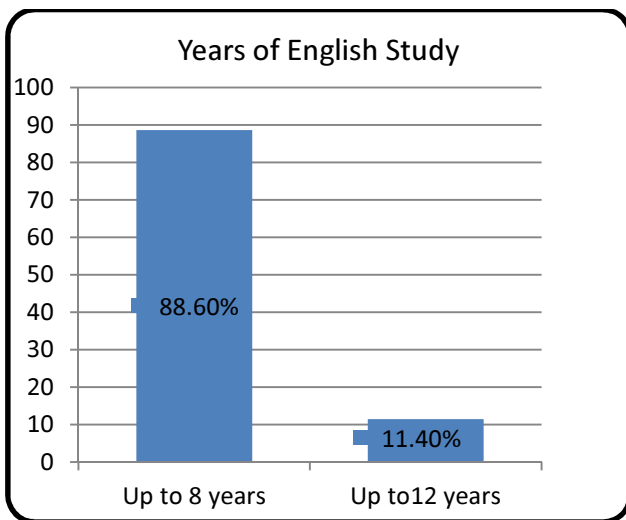
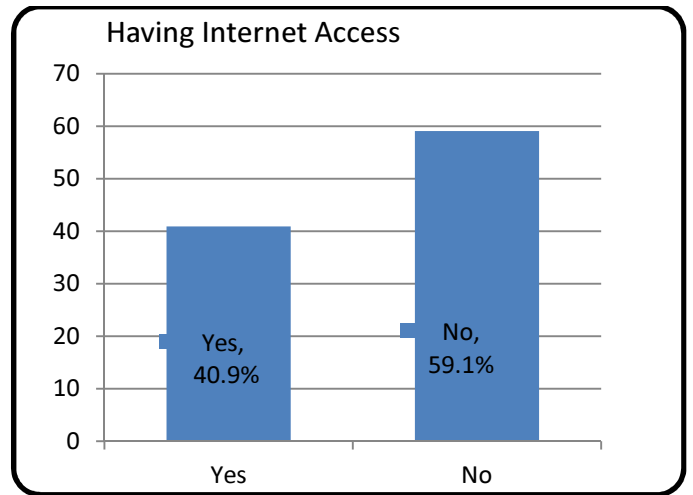
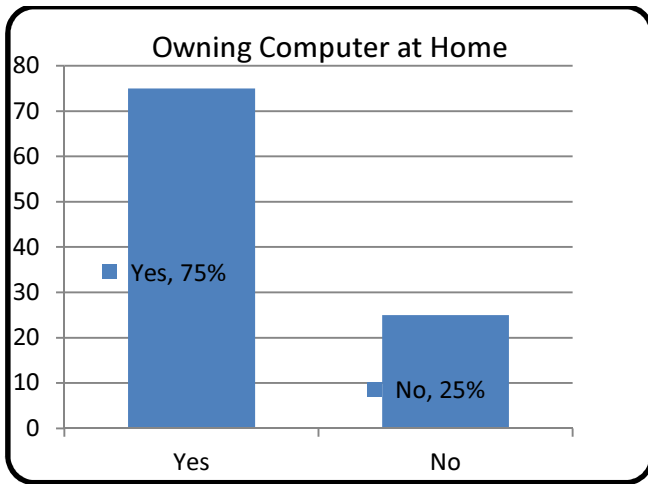
Dimensions	No of Items	Alpha
Part 2		
Advantages	12	.8986
Disadvantages	12	.9001
Part 3		
Section 1	8	.7053
Section 2	12	.8856
Overall reliability	44	0.986

First Part (Students' Profiles):

The results of the first part of the survey are summarized in table 2 and the pie charts shown below.

Table 2: Student Background and Experience

		Frequency	Percent Agree
Do you have and use a computer at home?	Yes	33	75.0
	No	11	25.0
	Total	44	100.0
Do you have access to the internet at home or on your smart phone?	Yes	18	40.9
	No	26	59.1
	Total	44	100.0
How long have you been using Blackboard?	6 Months	6	13.6
	1 year	18	40.9
	More than one year	20	45.5
	Total	44	100.0
How long have you been using the computer in your learning?	3-5 years	26	59.1
	6-8 years	18	40.9
	Total	44	100.0
How many years have you studied English as a foreign language?	Up to 8 years	39	88.6
	More than 8 years	5	11.4
	Total	44	100.0
Where do you prefer to use the internet for e-learning?	At home	6	13.6
	At the university	5	11.4
	at internet café	33	75.0
	Total	44	100.0



Significant facts about personal information, as the charts indicate, are that although 74% participants own computers, only 42% could access internet at home. All participants had over three years of computer experience and all had over 6 months of Blackboard experience. The students had substantial experience of English, 88% started studying it in grade 6 of their schools

and 18% studied it from grade 1. 75% of them used internet at home or at the university facilities. The information is significant because it helped document individual participants' experience of computer technology and its relationship with their perceived attitudes toward its use in acquiring academic literacy. During the interviews discussed in section 4.5.1 below the significance of these findings has been reviewed..

Second Part Advantages and Disadvantages of Blackboard and CMC

The second part of the questionnaire was further divided into two sections— perceived **advantages** and **disadvantages** of academic writing experience through the use of Blackboard learning management system.

Participants responses to statements about advantages of blackboard and CMC are presented in table 3.

Table 3: Advantages of CMC Perceived by Participants

Statements	Mean	Std. Deviation	% Agree
1. CMC is more convenient for me as an independent learner than conventional classroom learning.	2.89	1.185	58%
2. CMC improves communication between students and students, and students and teachers.	3.57	1.021	71%
3. CMC through the Blackboard makes teaching and learning more effective.	3.41	.996	68%
4. I find the Blackboard system interesting and useful.	3.43	1.043	69%
5. I like Blackboard because I can work at my own pace.	3.66	.987	73%
6. The Blackboard Discussion Board helps me to develop proficiency in English writing techniques and mechanics.	3.50	1.110	70%
7. The Blackboard Discussion Board helps me to share my work with other class fellows and obtain their feedback.	3.73	.899	75%
8. I benefit from the feedback given by my teacher and my class fellows through the Blackboard system.	3.77	.912	75%
9. Blackboard assignments help me to develop computer and internet skills.	3.98	1.110	80%
10. Blackboard assignments help me to develop knowledge of the writing process.	3.77	.961	75%
11. Teacher and peer messages and postings present clear and concise arguments for academic writing tasks.	3.61	.722	72%
12. Teacher and peer feedback were important for increasing collaboration.	3.84	.861	77%

The highest level of agreement and positive assessments shown in table 3 were found in item 9 “the BB assignments help me to develop computer and internet skills”, (80% agreement and mean of 3.98,) and item 12 “Teacher’ and peer’ feedback were important for increasing collaboration” (77% agreement, and mean of 3.84). The least positive assessment and lowest level of agreement were in item 1, “CMC is more convenient to me than face to face learning” (58% agreement and mean of 2.89).

Overall, the participants’ perceptions about CMC in terms of its convenience, effectiveness, usefulness, and improved communication were mostly positive. There was a substantial percentage of students who had positive attitudes toward Blackboard, (above 70%) as a source for improving computer literacy, developing language proficiency, sharing work with peers and

collaboration. This indicates that most learners were comfortable with using Blackboard and perceived that their increasing experience with it would improve their technical literacy as well as collaboration with their peers. However a substantial proportion (44%) of participants still considered face-to-face teaching as more convenient than CMC (item 1). This further highlights the fact that although technology is available and was used by most of the participants, it will take a lot of time until the convenience for participants in using CMC will be equal to other modes of instruction.

Table 4 Disadvantages of CMC Perceived by Participants

Disadvantages of CMC as perceived by participants are presented in Table 4.

Table 4: Disadvantages of CMC Perceived by Participants

Statements	Mean	Std. Deviation	% Agree
13. I feel isolated when I use Blackboard.	2.82	1.187	56%
14. Blackboard is difficult to handle and therefore frustrating to use	2.36	1.123	47%
15. Slow internet connectivity is a major problem in using Blackboard.	3.57	1.228	71%
16. I face technical problems when I use Blackboard, like difficulty in connecting to the Blackboard system, accessing peers work etc.	3.39	1.351	68%
17. I prefer to learn from the book than from the website.	3.41	1.207	68%
18. Blackboard encourages students to be dishonest (cheat).	3.02	1.229	60%
19. I feel I will become socially isolated if I have to concentrate only on e-learning.	2.89	1.017	58%
20. Both synchronous and asynchronous interaction through Blackboard are less effective than face-to-face interaction in the classroom.	2.61	.868	52%
21. I do not have internet at home, so have problem using Blackboard outside of college.	2.75	1.416	55%

Statements	Mean	Std. Deviation	% Agree
22. I don't feel Blackboard helps to increase collaboration among students.	2.68	1.095	54%
23. Teachers' and peers' messages and postings were not useful for or relevant to academic writing tasks.	2.61	1.243	52%
24. I was not quite satisfied with online peer communication	2.57	1.149	51%

The highest level of agreement about perceived disadvantages was found in item 15—"Slow internet connectivity is a major problem in using Blackboard....", (71% agreement and with a mean of (3.57), and item 17-- "I prefer to learn from the book than from the website" (68% agreement and a mean of 3.41) A similar proportion (68%) agreed that facing technical problems when using Blackboard was a disadvantage (mean of 3.39). However only a minority agreed that "Blackboard is difficult to handle and therefore frustrating to use" (item 14, 47% agreement and mean of 2.36)

A considerable percentage considered Blackboard as a source of isolation (item 13, 56% and item 19, 58%), and as noted above (item 14, 47%) considered it difficult and therefore frustrating to use. These concerns about disadvantages could be at least partly attributed to concerns expressed in items 15, 16 and 21 where a considerable percentage (71%, 68% and 55% respectively), considered internet connectivity and technical problems as a major hindrance in

using Blackboard effectively. However item 17 indicates that despite these perceived disadvantages, 68% of the students still prefer to learn from the websites than the book. Most striking of all are participants' views about collaboration (item 22) through CMC, where a small majority of 54% did not consider Blackboard to be conducive to collaboration. A consistent response was found in attitudes toward peer review (item 23) and level of satisfaction with peer communication (item 24). This raises an important issue that has been discussed in prior research e.g. Ayres' (2010). It is that the availability of technology does not necessarily guarantee active participation of the learners or their positive attitudes which may need exposure to technology over a long period of time.

Third Part (Section 1, Learners' Perceived Efficiency in EFL.

Participants' perceptions about their efficiency in n using English are shown in Table 5.

Table 5 Learners Efficiency in Using EFL

Statements	Mean	Std. Deviation	% Agree
25. I can express my ideas clearly in writing in English.	3.75	.991	75%
26. I dislike writing in English.	2.27	.949	45%
27. I am happy with my use of vocabulary in written English.	3.66	1.098	73%
28. I have no problem with grammar in written English.	3.25	1.164	65%
29. I have no problem with organization in written English.	3.25	1.014	65%
30. I'm good at writing in English.	3.23	.961	65%
31. It is difficult to write in English.	2.61	1.083	52%
32. I enjoy writing in English.	3.50	.902	70%

The highest levels of confidence and agreement of respondents are shown in item 25 "I can express my ideas clearly in writing in English", (75% agreement and mean of 3.75) and item 32 "I enjoy writing in English (70% agreement and mean of 3.50) There was a lowest level of agreement for the most negative item, item 26, (45% agreement and mean of 2.27)

While a majority of participants (75%) feel they could express themselves clearly in English (item 25), and 65% enjoy writing in English (item 32), 52% still reported that they found it difficult. (item 31). This could be explained from the percentages of items 29 and 30, where a majority, 65%, feel they

do not have problems with organization in English writing (item 29) have no problems with grammar, and believe they are good at writing. Overall positive perceptions of participants about their English language efficacy indicate that most of the participants have confidence and clear ideas of their strengths and weaknesses. This also indicates that most learners are motivated to expand their repertoire of English language using the CMC.

Third Part (Section 2) Learners Attitude toward CMC

Table 6 presents participants' responses to statements about use of technology in improving literacy skills.

Table 6 Using Technology in Improving Language Skills

Statements	Mean	Std. Deviation	% Agree
33. I can write better essays when I do them on the computer.	3.07	1.043	61%
34. Learning English reading and writing through a computer is fun.	3.27	.973	65%
35. Learning English reading and writing through a computer make me less anxious.	3.43	.846	69%
36. Computer-mediated language learning can promote my English literacy abilities.	3.34	.914	67%
37. Revising my written work is easier when I write it on computer.	3.59	.844	72%
38. I'm willing to use an online discussion board if I have a question or comment.	3.61	.895	72%
39. Commenting and responding to others by an online discussion board helps me develop my thoughts and ideas.	3.68	.909	74%
40. I feel that communicating by an online discussion board is a good way to improve my English.	3.61	1.061	72%
41. I feel that writing by computer makes me more creative.	3.70	.904	74%
42. I feel that using a computer gives me more chances to practice English than pen/paper mode of writing.	3.57	1.065	71%
43 I'm interested in knowing more about using online discussion board (for example Blog) for developing my English literacy.	3.61	1.083	72%
44. I'm more willing to participate in a group discussion online than in the conventional classroom. .	3.50	1.131	70%

All the items in this section received positive responses and most had a high level of agreement to positive statements. The highest positive response and level of agreement was in item 42 “I feel that writing by computer makes me more creative”, (74% agreement and mean of 3.70). This was closely followed by item 39, “Commenting and responding to others by an online discussion board helps me develop my thoughts and ideas” (74% agreement and mean of 3.68) . The least positive response was to item 33. “I can write better essays when I do them on the computer” (61% agreement and mean of 3.07).

A majority of respondents (72%) agreed that revision on computers is easier compared with pen and paper (item 37) and 74% perceived writing on computers makes them more creative (item 42). Similarly a substantial majority (over 70%) reported willingness to use online discussion boards for queries, and knowing more about these arrangements and opportunities to improve their English. These responses confirmed very positive attitudes toward using computers and internet technology for improving writing skill in English.

The main points that emerged from interviews with students supported the responses to the attitudes questionnaire and other qualitative data. All of them had over a year of using CMC through Blackboard and understood the system well though there were variations in their perceptions of its value relating to their length of experience with it, their technological expertise and their access to technical facilities.

Overall, participants reported advantages of CMC that included help in improving spelling and grammar, overcoming recurring writing errors and reinforcing the writing process, adapting to English writing conventions (organization, logic, coherence, format, and genre traditions), and accepting

and responding to their English writing weaknesses in a supportive collaborative setting. With respect to certain writing tasks they reported that the activities enhanced their thinking skills and ability to consider multiple perspectives in writing. However, there were complaints about the editing feature in the Blackboard learning management system present in the discussion board process. When they wanted to post comments on an essay for peer feedback activity, they couldn't insert comments as they could in MS Word.

The general responses in these interviews and in the other data sources can be summarized in the following points:

1. Learners' experience of using computer, internet and Blackboard varied. Students with longer experience of CMC showed more positive attitudes toward it than those with relatively shorter exposure to CMC. Technical problems related to internet connectivity/availability and Blackboard Learning Management System (LMS) emerged as an important factor in influencing learners' attitudes toward its use.

2. Based on the quantitative findings, students who had longer experience of Blackboard communication had a more positive attitude toward the factors of productivity, collaboration and participation. Although majority of learners preferred to learn using Blackboard, still a substantial minority found face-to-face communication more convenient than CMC.

3. In terms of Learners' self-efficacy, a substantial majority was likely to enjoy writing in English and considered positively the possibility of using English to express their thoughts and ideas through the Blackboard.

4. As indicated in interviews and journal notes maintained by students these positive perceptions about writing in English improved progressively during the semester

as the writing atmosphere became more relaxed and they became more comfortable with giving and receiving feedback from their colleagues.

5. Learners considered revising their writing much more convenient using a PC and felt Blackboard helped them to increase their writing practice, online participation and group discussions.

Discussion of the Findings

CMC technology incorporated both individual learning processes and social interaction learning tasks designed to support the development of EFL academic writing processes and skills. Mixed methods were used in the study to assess the results: quantitative methods, including a CMC-based writing attitudes scale, and a qualitative analysis and evaluation of the quantity of participation involving reflection journals and interviews as well as text analysis. The results of this study show that most participants initially recognized their deficiencies in language and writing skills, lacked confidence in writing, and were reluctant to participate actively in cooperative discussions about their work with their peers. This last concern was particularly relevant to the Saudi Arabian context where students are often reluctant to share academic problems with peers and accept well-meant confidential advice. With respect to these problems the greatest improvements appeared to be in acceptance of collegial social interactions relating to their writing followed by recognition of improvements in language and writing skills, and general improvements in confidence as well. In students' writing performance, there were progressive improvements due to the use of CMC. However there were of both advantages and disadvantages in using CMC. A majority of students had a high level of positive perceptions of CMC technology and their participation. However although there were fewer between-student interactions about

work done than had been anticipated their writing anxiety was reduced, they became more confident, and felt that they made progress in a number of areas. These included critical thinking, identifying and correcting writing errors, and adapting to academic writing conventions. This provided an encouraging CMC environment between students as peers and students and their teachers. These findings were consistent with prior research findings (e.g., Goodfellow, 2005). They supported the idea that fostering critical reflection in students helps to support their learning to write, especially in collaborative online settings. CMC milieus can provide adequate repositories which learners can utilize to scaffold their academic writing needs (Strauss et al., 2009)

Findings with regard to the use of various discourse functions in the asynchronous CMC indicated that the interaction was mainly task-oriented when students were obliged to use 'explaining' as the most recurring language function. This is reflected in relevant literature; for instance, Boud (2001) acknowledges that students learn a great deal by explaining their ideas to others and by participating in activities in which they can learn from their peers. Similarly Webb, (1985) described various studies to show that giving and receiving explanations is beneficial to learners' achievement during peer interactions and learning in small groups. Since extensive use was made of 'explaining' in the present study, the findings support these earlier findings. This suggests that it was important that CMC in the EFL classrooms in this study helped students to collaboratively work on their assignments and assist each other in their learning tasks. These tasks also encouraged critical thinking because the students had to reflect and critique on various issues addressed in their colleagues academic writing in providing constructive feedback on their essay drafts.

The supportive atmosphere of the CMC environment of Blackboard reduced student's anxiety, leading to a better connection between thinking and writing for the participants in the study. As their confidence increased writing became more like speaking to somebody and they began writing more fluently. Psychological/emotional factors influence writing performance in an online learning community and it appeared that by following the CMC intervention students' anxiety in writing was reduced. The finding is consistent with the previous studies (Alias & Hussin, 2002; Weasenforth & Meloni, 2002), which reveal that CMC technology can reduce anxiety level.

Other studies have also shown that CMC technology writing can provide EFL writers with a psychologically and emotionally safe learning environment where much of their anxiety to write can be reduced. In terms of cognitive/linguistic writing barriers, the findings of this study reveal that students reduced most of their fears and writing anxieties. The findings are in accord with previous research (Cohen & Riel, 1989; Lindblom-Ylana & Pihlajamaki, 2003; Tusi, 2004), which indicates that CMC technology has advantages in improving writing skills by this means.

The CMC environment of Blackboard not only contributed to reduction in anxiety but also supported collaboration. The environment was one which was able to provide an online learning community where everybody could collaborate and help each other edit, revise, and improve English writing, sharing insights and viewpoints via synchronous and asynchronous tools of interaction with peers and teachers. This finding is congruent with prior research suggesting that CMC environments can be conducive to collaborative group interaction and sharing (Ballera & Salih, 2014; Bowering, Leggett, Harvey & Hui, 2007;

Bruffee, 1984; 1987; 1995; Chaffee, 1992, Johnson and Johnson, 1987; Kennett, et al., 2016; Litecky, 1992; Lin, 2015; Okonta, 2010; Wang, 2010). Establishing this climate of mutually supportive collaboration was a potential concern in the Saudi Arabian context and required provision of encouragement and support from teaching staff and took some time to be fully in place. In this regard Wegerif (1998) noted that to establish a sense of community in collaborative online learning, learners need to be provided with thorough and optimal scaffold and support at the beginning of the course in structured learning settings with guided or semi-guided activities. Students need ample time and emotionally supportive activities to get to know their peers in order to build up trust and comfort. As they learn to work together, they can be given more student centered activities during the course of study.

It was interesting to note that academic literacy development showed improvement in the environment of Blackboard which supports CMC. The students reported increased participation and interaction with their colleagues and this was associated with improved attitudes toward academic writing. In other words, CMC technology had had positive impact on EFL students' socio-cultural aspects of learning and writing. Sociocultural theory offers an explanation for this finding. According to sociocultural theory (Vygotsky, 1978; Bakhtin, 1981; Bruner, 1966), learning is embedded within social events and occurs when learners interact with people (students and teachers) and artefacts (such as computer tools). In the present study, CMC technology provided students with an internet connected platform to interact, communicate, negotiate, and construct with other EFL learners and their teachers. Participants could understand their ideas and points of view better and help them enrich their experience. A second point

from the interviews was that participants found that other students also had to struggle with writing problems similar to their own. They developed greater understanding and empathy about academic writing difficulties faced by others and as a result could offer more effective and practical writing suggestions in their feedback. This finding is commensurate with the notion of Lillis and Scott (2007) and Roh (2015) describing literacy as social practice.

The results of this study were consistent with and supported a substantial amount of related prior research (Ballera & Salih, 2014; Okonta, 2010; Lin, 2015; Kennett, et al., 2016). Students' online interactions functioned as 'dialogues' (Lillis, 2003) that take place 'in the material, social world' provided in the form of CMC. CMC can be seen as a socializing platform where the individuals interact in their particular discourse community, thereby playing a vital role in promoting the social constructivist approach to academic literacy development found to be effective by Warschauer (1997). This is particularly true in the case of language learning, including the skills of academic writing. This view is consistent with Harnad's (1991) perspective of language: as interactive (i.e., by employing speech), and reflective (i.e. facilitated through the permanent nature of the written text). CMC provides an environment where both the interactive (spoken) and reflective (written) functions of language can merge in a new dynamic through interactive writing and discussion, and this way offers opportunities for online communities and individuals to build their knowledge and skills in academic literacy. This interpretation is consistent with other writing on the topic (Harasim, 1997; Warschauer, 1997).

Qualitative data from the present study indicated that rapport and amicability progressively increased among the participants. This result supports previous

claims that CMC online writing has socio-cultural benefits. (Kern, 1995; Sotillo, 2000; Beuchor & Bullen, 2005; Chung et al, 2005) and psychological (Alias & Hussin 2002; Weasenforth & Meloni 2002; Greenfield, 2003)

In addition, these findings support the theory of the Zone of Proximal Development (Vygotsky, 1986), in which Vygotsky argues that students can better learn by the assistance of more capable peers (students), adults (teachers and experts), and artefacts (CMC technology). Interviews, discussions and reports in this study suggested that CMC technology appeared to be more effective in assisting less competent students and they acknowledged that they were considerably assisted by other students, their teachers, and the computer tools of CMC. In summary these findings support the socio-cultural theory, Zone of Proximal Development (ZPD), and research on the benefits of CMC technology. CMC through Blackboard provided substantial opportunities for fostering a socio-linguistically interactive and psychologically supportive learning environment that assisted in overcoming difficulties and enhancing their academic writing skills.

Conclusions & Recommendations

The findings of this study have shown that CMC technology can be effective in improving EFL students' academic literacy skills. Consistent with research in other contexts this was found to be true for Saudi Arabian students with substantially different native language structures and writing formats substantially different from English and more limited experience with peer consultation and collaboration in learning activities. It can provide learners with socio-linguistic interaction and psychological/emotional support to enhance their writing abilities. This suggests that writing instructors should be aware of and benefit from its advantages for the use of

CMC technology as a pedagogical tool for academic writing development and also aware of of disadvantages associated with of problems that reduce its effectiveness.

Advantages found in the present study can be summed up as follows:

➤ Positive interaction and increased participation were found during interaction swaps in both synchronous and asynchronous media;

➤ Attitudes toward academic writing improved, writing anxiety was reduced, and self-confidence increased due to the presence of an amicable environment among peers in the online community;

➤ CMC tools were seen by the students to be helpful in developing and encouraging critical thinking skills;

➤ The online community that developed in the CMC environment created by Blackboard assisted students to recognize writing errors, but encouraged improvements without seeking to impose them other than through advising and explaining. This minimized possible resistance due to perceptions of claimed superiority by others;

➤ The positive feedback provided was conducive to reinforcing and consolidating academic literacy development, including academic writing processes;

➤ The technology tools of Blackboard, including synchronous and asynchronous interactions helped in developing understanding of and following academic writing conventions;

➤ The growth of an online community that used CMC tools helped to provide an authentic audience among peers to read for one another critically and supportively and led to a state of group consciousness and mutual support among them;

This online community had, throughout the project, an authentic, understood and accepted purpose of improving academic writing. This helped students to develop

better than would have been expected through conventional methodology in a traditional classroom. In summary the overall online environment with its assistive CMC tools significantly helped improve writing performance and attitudes toward academic writing. On the other hand the lack of the facilities and options of MS Word in the tools of Blackboard created problems and led to increasing spelling and some simple grammatical errors;

According to the qualitative data from interviews and reflection journals, the discussion boards of Blackboard provided students with CMC tools to support collaborative learning, such as topic discussion, writing sharing, and feedback giving. However based on students' experiences, and their reflections on them, it is apparent that the e-learning technology of Blackboard LMS can only support but not replace group collaborative processes as it occurs in natural traditional settings. Teachers still need to design teaching activities primarily with the purpose of facilitating online collaborative learning work.

The online community utilizing the LMS of Blackboard provided several conclusions and suggestions.

➤ First, students preferred getting engaged in guided (structured) activities and small groups because this made collaboration easier and more straightforward at the beginning of the online writing.

➤ The constructive interactions between students leading to positive development of language skills can be very effective, but were dependent on development of mutual confidence, trust and support. Consequently these processes should be progressively introduced and their benefits accepted through staged introduction with ample time for this trust and confidence to develop.

➤ As far as possible, the technical facilities required should be readily available for use. Although a variety of mechanisms for access can be used, their unavailability for easy access can be a substantial disadvantage.

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