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RE-EXAMINING THE EFFECTS AND AFFECTS OF ELECTRONIC PEER REVIEWS IN A FIRST-YEAR COMPOSITION CLASS

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Abstract

While many researchers have studied the application of computer-mediated communication (CMC) in peer review activities in L2 composition classes, few have directly compared the effect of asynchronous CMC (ACMC) versus written comments. This paper describes a small-scale project carried out in an ESL composition class to reexamine the effects and affects of asynchronous CMC in L2 students' peer review processes.[1]

Nine students' responses on four drafts were analyzed. Two drafts were peer-reviewed using Microsoft Word while two others were edited with paper and pen. The in-text comments in both modes resembled each other in number, in area, and in the nature of distribution. Students' end comments also maintained similar sentence structures, rhetorical styles, and organizational strategies. At the same time, the survey results revealed that students had no overt preference between the modes.

The project found that the students gave more peer comments when ACMC was first introduced in the class, but this effect faded quickly. It is therefore suggested that the students' curiosity regarding this "new experience," rather than the mode difference, would stimulate higher motivation and greater participation in peer editing situations.

Introduction

Computer-mediated communication (CMC) began to be used in native-speaker English instruction starting in the mid-1980s and has since been increasingly applied to second language (L2) instruction (Beauvois, 1997, p.167) In recent years, research projects on the application of CMC in second language acquisition (SLA) have been increasing. Many researchers have found that the computer medium provides a non-threatening environment, lowers the affective filter, and enhances students' motivation for L2 learning (Beauvois & Eledge, 1996; Kötter, 2001; Liu & Sadler, 2003; Coniam & Wong, 2004; Strenski, Feagin, & Singer, 2005). It is also often argued that the computer mode stimulates more student production and more equal production than face-to-face communication (Kern, 1995; Sullivan & Pratt, 1996; Warschauer, 1996; Abrams, 2003; Crank, 2002; Belcher, 1999). Other findings include greater student control as well as greater collaboration and scaffolding when using CMC (Kern, 1995; Ewing, 2000; Salaberry, 2000). CMC has also been noted as a more beneficial medium for L2 morphosyntactic development (Salaberry, 2000).

Some of these studies focus on the use of CMC in peer review sessions in L2 writing classes and claim similar effects (greater student production, more equal production, greater student control, and so on) when relying on computer-mediated peer review activities. Warschauer (1996) as well as Sullivan and Pratt (1996), for instance, found that synchronous CMC (SCMC, or real-time interactions), as compared to oral discussion, encouraged more balanced student participation in peer review sessions. Jiang (2004) also reported that the email modality (i.e., a form of asynchronous CMC) relieved English as a Second Language (ESL) students' concerns about "face saving." Based on previous studies, Liu & Hansen (2002) concluded that there are qualitative and quantitative differences between electronic and face-to-face interactions.

However, while the literature often indicates that CMC is a beneficial medium for peer reviews, most researchers have not made a straight comparison of the computer mode with traditional classroom practices such as commentary using paper and pen. Bacon (2000), for instance, suggested that on-line peer review sessions had the potential to provide helpful feedback in his study but did not offer such a comparison. Strenski, Feagin & Singer (2005) also concluded that email was a productive medium but the advantages of using CMC were discussed without pedagogical evidence. A large proportion of the literature compares the computer mode with oral peer review discussions, rather than the written process. Tuzi (2004), Tannacito & Tuzi (2002), Crank (2002) and Sullivan & Pratt (1996), for instance, claimed that the electronic mode prompted more global, more detailed, and therefore more effective feedback than oral discussions; Tannacito & Tuzi (2002) further found more macro-level revisions due to SCMC peer reviews. However, this is hardly surprising. As Baron (1998) points out, electronic dialogues reside somewhere in between speech and written communication in formality and style. Electronic peer reviews are therefore more likely to be structured, reference-specific, and visible than oral discussions.

At the same time, the differences between SCMC and asynchronous CMC (ACMC, usually email exchanges and bulletin postings, etc.) are sometimes not clearly defined in projects attempting to examine the effect of the computer mode. But as Abrams (2003) notes, SCMC and ACMC activities should be considered separately. In fact, according to previous studies, ACMC is generally found to be more constructive and effective in peer review activities (Crank, 2002; Honeycutt, 2001; Liu & Sadler, 2003). This is primarily due to the "playful" features of SCMC.

In sum, SCMC is hardly ever found to be more effective than ACMC in peer review activities in particular, and written and oral peer reviews have their own distinctive functions. Therefore, the current project intends to carry on the tradition with a more specific comparison of the ACMC mode with the written process of peer reviews. It is believed that the advantages of the computer media would be most powerfully defended if a definite difference can be found in the effect of ACMC (referred to as the electronic or e-mode hereafter) and the written process (referred to as the traditional or t-mode from here on) in peer reviews.

It is worth mentioning that the increased visibility of the "comment" function in Microsoft Word[2] since 2003, though far from being the primary motivation, also prompts this particular research project.

The Study

The study was carried out on twelve ESL students enrolled in a first-year composition class at a southwestern American university in 2005. Four students were from Mexico while nine were from different parts of Asia, including Japan, Vietnam, China, Saudi Arabia, Indonesia, India, and the Philippines. The primary researcher was also the instructor for this section; she had taught the course over the previous two years. Like many composition classes, the class relied on an online conference made possible by the Caucus software.[3] Caucus software was chosen for conferencing activities so that individuals could attend e-conferences and exchange ideas at their own convenience (whether in class, on campus or at home). Throughout the semester, the students were asked to constantly practice their peer editing skills. In Unit One, peer review strategies were discussed and the students practiced group peer editing. In the second unit, the students were asked to peer edit four other drafts written independently by their classmates. Two sample drafts along with the peer review sheet were posted on the online Caucus conference. In the first peer review session, students were taught how to download and use the "track changes" and "add comment" functions of Microsoft Word. Once students finished reviewing, they posted the commented drafts back on the Caucus website. In the following class, the other two sample drafts and the same peer review sheet were distributed to the whole class as hardcopies. The students were asked to write their comments on the paper itself. For both assignments, the students were asked to use the peer review questions (on the peer review sheets) as a reference, and they had two days to finish the assignment at home. The same procedure was repeated in Unit Three with the use of two other students' sample drafts. (Only one e-draft and one paper draft from both units were used for the purpose of this project, and due to attendance issues, peer reviews from nine students for each draft were used in the effect analysis.[4]) At the end of the semester, students were asked to complete a survey regarding their responses towards the traditional and electronic modes of peer review.[5]

This study intends to investigate the following questions:

1. Does a traditional versus a technology-enhanced asynchronous commenting mode result in a qualitative and quantitative difference in the students' comments?
2. Do the ESL students take to the different modes of peer review with different levels of acceptance and preferences? (In other words, do the modes affect students differently?)

Data Description and Analysis Method

The four essay drafts used here are referred to as drafts A, B, C & D. Drafts A & B were written for Unit Two in the 9th week of the semester. Draft A was 935 words long; the author was a 20-year-old Vietnamese female whose work was usually above average. This draft was peer reviewed using ACMC. Draft B was 1077 words long and the author was a 20-year-old Spanish male of average writing ability. This draft was reviewed using a traditional mode. Drafts C and D were completed at the end of Unit Three in the 14th week of the semester; draft C (peer reviewed electronically) was 807 words long and the writer was a 20-year-old Taiwanese female with average writing ability. Finally, draft D (peer reviewed traditionally) was 1500 words long and was written by an 18-year-old Filipino male whose writing was a little above average.

The students' comments can be generally categorized in two types: in-text comments, in which they made changes on the original essay or indicated their responses towards a specific part, and end comments, in which they mention their general impressions of the draft or evaluate the essay as a whole. The project analyzed these two types of comments separately, following categorizations by McGroarty & Zhu (1997), who separated "evaluative comments" from "global" and "local" comments. This categorization and analysis method is also consistent with Tannacito & Tuzi's (2002) suggestion that annotated comments and a "summary box" should be considered separately.

The in-text comments were analyzed as either local or global comments. According to McGroarty & Zhu's (1997) definition, global feedback is concerned with "idea development, audience and purpose, and organization of writing," while local feedback refers to editing issues such as "wording, grammar, and punctuation" (p. 14). The current analysis method also follows Liu & Sadler (2003) to further categorize global and local comments according to the nature of the comments: alteration, suggestion, clarification and evaluation.[6] A sample of such categorizations is provided in the first section of the appendix.

The students were not required to give end comments, but when they chose to do so, the comments fell into two groups: either "overall evaluations," often addressing the peer review questions (e.g. "The order and PIE structure in your paper are not clear, and this is what you need to improve"), or they provided encouragement to the author(s) without mentioning specific features of the writing (e.g. "Your essay is very interesting, I read everything. I like the essay"). Also, to balance the students' reliance on the peer review questions in the two different modes[7], the peer review sheets were designed in such a way that they provided only guidelines: the peer review questions were lined up together in the sheet without space in between, so that students were encouraged to comment on the original drafts for both modes.

A graduate MA student in Literature and Writing in China was hired to code the comments together with the primary researcher. Three steps were taken. First of all, the researcher and the assistant coded the written and electronic comments independently. Secondly, when their coding was compared, a 6.5% discrepancy was found. The problematic items were then discussed until agreement was reached between the two raters.

Findings and Interpretations

Comparison of In-text Comments

"Local alterations" were found to be the most common type of feedback the students gave for each essay (89 comments for the e-mode and 123 for the t-mode). Despite this, "alteration" type of comments were excluded from further analysis for the following reasons: 1) Except for one global alteration which split a paragraph into two, all alterations found were local and relevant only to mechanical errors (punctuation and spelling) and grammar errors;[8] 2) students hardly needed to interact with the texts for those local corrections; 3) multiple alterations are often on the same mistakes, such as comma splices or one spelling error, and while these alterations appeared in large volumes, their significance can hardly be compared to other peer response comments; 4) checking mechanical or grammatical errors is usually not the major purpose of peer reviews.

Students may have relied a great deal on local alterations in order to avoid raising more face-threatening issues such as critiquing the essay's content, organization, argument, etc.

Table I shows the total number of comments (discounting "alterations") students gave in the two different modes.

Interestingly, the number of comments and percentages of each type of comments for the e-mode and the t-mode were to some extent similar. For the e-mode reviews, there were 95 comments in all (disregarding alterations), with the most comment type as global suggestions (36; 37.9%); and the least common type as local evaluation (7; 7.4%). For the t-mode reviews, there were 86 comments in all; global suggestions were again most common (36; 41.9%) and local evaluations were least common (5; 5.8%).

Table 1: Summary of Comment Types and Numbers

Nature	Alteration		Suggestions		Clarification		Evaluation	
Area	L	G	L	G	L	G	L	G
E-mode	89	0	15	36	16	11	7	10
T-mode	123	1	7	36	13	16	5	8

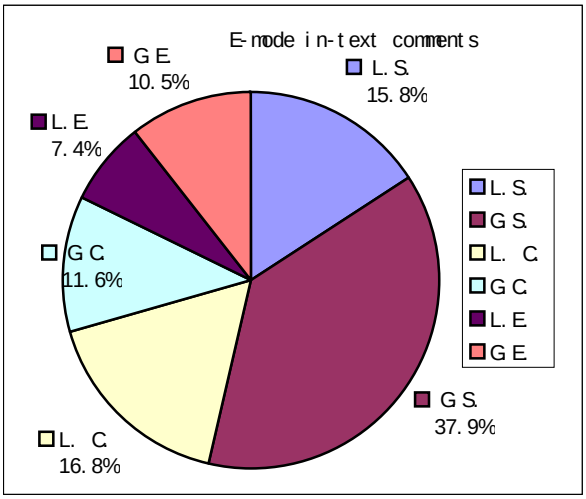

Chart I E-mode Comment Distribution

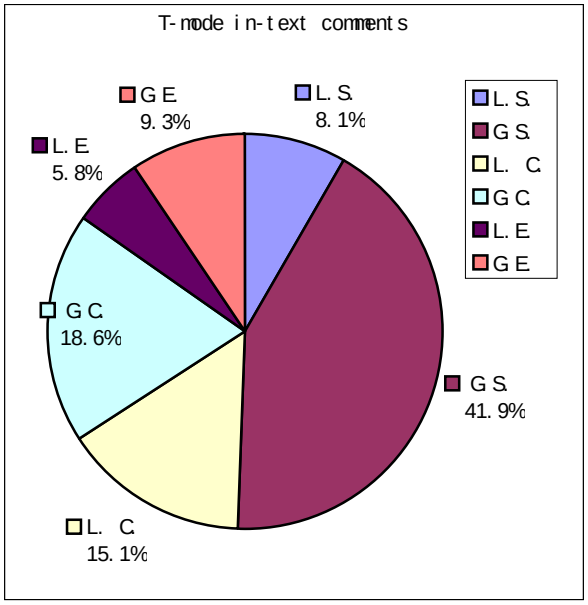

Chart II T-mode Comment Distribution

To ensure confidence that the two modes elicited similar numbers and types of comments, statistical analysis was performed. One-way ANOVA found no significant difference between the total number of comments (with the alteration types excluded) given to drafts A and C combined versus comments to drafts B and D combined ($t(32)=0.506$, $p=0.616$). The numbers of comments in each of the six types were also tested. No significant statistical difference was found between the number of comments in the two modes in any of the six categories shown in Chart I and Chart II.

At the same time, contrast tests crossing different units (with comments to drafts A and B combined versus comments to drafts C and D combined) showed that there was a significant difference between the total number of comments given for drafts A and B combined (Unit Two drafts) versus comments to Unit Three drafts ($t(32)=2.754$, $p=0.010$). This leads us to suspect that variables such as a different time frame or a different essay assignment entailed significant differences in students' comments. LSD also found that the total number of comments students gave to draft A ($M=7.0000$) differed from the number of comments given to draft C ($M=3.5556$, $p=0.019$) and comments to draft D ($M=3.7778$, $p=0.028$). No other significant difference was found in the total number of comments between drafts.

The total number of global versus local comments was also compared. With alteration comments excluded, the t-mode seemed to elicit a slightly greater number and percentage of global comments. There were 60 global comments out of the total 85 in the t-mode (70.6%) while there were 57 global comments out of the total 95 (60%) in the e-mode. When alteration comments were included, the distributions of local versus global comments were very similar in the two modes, with 31% global comments (57 out of 184) in the former and 29.2% (61/209) in the latter.

In-text Comment Word Count

Word count analysis was also performed for in-text comment for the four drafts. There were 926 words for all comments on draft A (out of 63 comments), 428 words for all the comments on draft B (52 comments), 265 for C (52 comments) and 247 for D (34 comments).[9] The ratio of comments between the e-mode and the t-mode was thus 1191: 675. However, rather than suggesting that the e-mode led to the typing of more words, the result showed that the difference was primarily caused by the huge volume of comments for essay A. Students provided the most comments when peer editing draft A; more importantly, they gave very elaborate comments on draft A. The average word length for comments on essay A is 14.7 per comment, while those for essays B, C, and D are 8.2, 4.9, and 7.3.) The following was one of the reviewer's comments on Draft A.

> *Here comes the controversy. I see you reason a lot about the issues on your side, from both political and economic aspects, but little is mentioned on your opposed side. I think you can analyze your opponent's opinions in detail. Just like what you did in your presentation. Question their motivation, etc. you need to be aware of your opponents, and try to persuade them. List their points and argue your viewpoints toward those issues.*

Typical comments on draft A were long. (e.g. "You mention controversies here. It confuses me which controversy you are going to talk about. Tax or gas?"). Comparatively, comments for all the other three essays were relatively short (e.g. "What are the negative consequences can cause [sic]?"; "This is confusing").

In-text Annotations

In the traditional mode of peer editing, there were a few in-text notes that did not fall into any comment category. Those notes were not for peer review purposes. For both drafts B and D, four peer editors (not the same four) made notes to themselves while reading. These were simple annotations like "thesis statement," "solution," "background information," etc.) There were ten such notes for draft B and four for draft D. Students also used wavy/straight lines or brackets while reading. In the e-edited drafts, no such marginal annotations were found.

End Comments

Though students were not required to give end comments, each draft received some end (summative) comments from the students.[10] Students gave both evaluative comments as well as suggestions. (No alteration or clarification comments were found in these end comments.)

Most of the revision-oriented comments addressed peer review questions (e.g. "Good topic and good wording"; "The purpose of this essay seems somewhere between your person [sic.] growth and writing experience. Please make your purpose as clear as possible!"). At the same time, a good proportion of the "end comments" did not address revision purposes, but may be referred to instead as "friendly gestures," e.g., "good luck" or "I hope what I wrote helps you." They sometimes took the form of positive generic comments, such as "Dear [student], you have good ideas."[11]

The number of total friendly gestures and revision-oriented comments for the electronic and traditional modes were very close (56:58). For the e-mode, there were 38 (67.9%) revision-oriented comments and 18 friendly gestures. The t-mode elicited 35 revision-oriented (60.3%) comments and 23 friendly notes. According to this result, the e-mode seemed to elicit more revision-oriented comments, but the difference was not dramatic. The total number of words in end comments given to drafts A and C combined (622 words) were also similar to the number of words in end comments on drafts B and D (616 words).

A close examination of the students' actual responses suggested that students did not vary their language style or comment content because of the mode change. The following are taken from one student's responses in the two different modes.

Student M's response to draft A: *[Student name], this is a very good essay, your argument is really strong and you have very good evidence to support it. I hope my little comments are helpful to you. Congratulations for your presentation you were very well prepared. Just don't forget that your opposition can also be people that need their old and gas inefficient pick-ups to work and cannot afford a higher gasoline price. Good luck! [Student name]*.

Student M's response to draft B: *[Student name], your essay is very interesting. I guess you still need to add some quotations that would make it stronger, but you are doing a good job. I also recommend you to use an outline to help you with the organization and try to talk only about one thing in each paragraph. I'm sure yours would be a great essay. Good luck. [Student name]*.

Despite the mode, student M wrote comments with an identical style and structure. She began her comments by addressing the writer, followed up with generic positive comments, and then went on to revision suggestions. She would then close her comment with friendly gestures ("Good luck") and her signature.

Student I's comments in both modes were also highly similar.

Response to draft A: *I think your paper is really good. You only need to check grammatical errors. Also, I would recommend you to include more examples in your paper. Another comment, in your conclusion you need to include your opinion, stance, and restate your thesis statement.*

Response to draft B: (Written on the margin) *I would recommend you to separate your paper in paragraphs. Paragraphs would make your paper clear. ☺Also, you need to order them in a logical way. Focus more on PIE structure in your paragraphs. You would like to include quotes in your paper. Also, check grammatical problems*. (Written at the end of the paper) *I think you have very interesting points, but you only need to order your ideas, and check for the comments I wrote. I hope it helps you*!☺[12]

This student's comments were often restricted to generic suggestions like "checking grammatical problems" (without identifying specific errors). She would also express her positive impression ("I think your paper is really good"; "I think you have very interesting points") before giving an overall evaluation. In both modes, she gave some valuable (but probably not specific enough) suggestions regarding organization. She even used identical sentence structures such as "I would recommend you…", "you need to…", "I think …". Such similarities suggested that the

difference in modes did not cause qualitative or quantitative differences in end comments.

Actual Revisions

An effort was made to examine the writers' actual revisions after the peer review process. However, actual revisions could not be quantified for many reasons: there were too many overlaps in the peers' responses; sometimes the writer revised a whole paragraph, making it impossible to evaluate the actual value of the local comments; some students' drafts were not complete at the time of peer review, and the students were revising them independent of peer feedback. Thus, a qualitative approach was taken when studying the actual revisions.

Problems identified by more than one peer editor were often taken seriously by the writer. There were qualitative revisions for all four drafts. For instance, writer A changed her title, rewrote her thesis statement, eliminated unrelated ideas and clarified some claims which appeared vague to her peers. She also extended an important paragraph with examples and reasoning. Many classmates warned her to consider her opponents, which resulted in an important revision movement: she included new paragraphs refuting the opposition. Writer B improved the expression of his thesis statement, corrected the mechanical errors in his sentences (adopting exactly his peers' suggestions), separated his paragraphs, and imported more examples and statistics. All of those problems were pointed out by multiple peer reviewers. At the same time, for all essays, there were some good suggestions that the writer seemed unwilling to follow. Writer A still kept some of her self-contradictory expressions and expressed reluctance to change until the instructor pointed out the problem. Writer B had an organization problem, and although one student specifically listed his key points and arranged them for him, he was not ready to make this global revision. But overall, there had been great improvement in both essays. The same was true for drafts C and D. Overall, both modes of peer editing were effective. (This conclusion was supported by the survey results, in which the students unanimously reported that they found peer review activities helpful.)

Discussion of Effect

The statistical analysis proved that the change of mode in our study did not cause a significant difference in the in-text comment numbers and types. In fact, one can confidently say that the numbers and types of comments that the two kinds of peer editing elicited were quite similar. At the same time, a difference in comment numbers was found between the peer reviews in Unit Two and Unit Three: students gave more comments in Unit Two peer reviews. There were also significantly more comments given to draft A than to drafts C and D. More impressively, students' comments on draft A appear to be more elaborate. At the same time, draft C, which was also peer edited electronically, did not elicit detailed feedback. A plausible explanation may be that the students tended to be more motivated when electronic peer review was introduced and practiced for the first time in class, hence the difference between the results of editing for draft A versus subsequent drafts. At the same time, the students' enthusiasm towards peer review activities declined as the semester went on. By the end of the semester when they had peer edited multiple drafts, the motivation to give extensive comments diminished despite the mode. Apparently, the

students' initial curiosity towards the electronic mode faded rather rapidly: students were not found to be particularly motivated to edit draft C.

A previous project by Liu and Sadler (2003) was similar to the current one in terms of research questions, subjects, and scale. Though they claimed that the ACMC mode in their project elicited more comments than the traditional mode, the researchers admited that "if the alteration comments are eliminated from both groups, the overall number of comments made per group differs by only one (167 vs. 168)" (p. 206). In their project, though the comment distributions in the two modes were not identical, there was no evidence that the differences were significant.

Readers who are familiar with the literature of CMC in ESL teaching are likely to be under the impression that the application of computers in the classroom most often entails benefits. The current project, however, suggests that the computer itself may not necessarily cause a significant change in students' motivation or amount of production. However, it does indicate that students tend to be more devoted when the experience is fresh for them, whether it is e-editing or simply peer editing in general. Recall that a number of previous studies which claimed initial increases in the students' production in the computer mode were not longitudinal research projects; those projects typically lasted for a few weeks to one semester, and often no effort was made to study the change of effect/affect. It is possible that some "new experience" effects were interpreted as a benefit of the computer mode in some of the previous studies. Note also that many such projects were conducted in the late nineties and earlier this century when the use of computers in the classroom was still an innovation. With the prevalence of computers and the frequent use of CMC in the language classroom nowadays, it is likely that CMC has already to some extent become a norm, and the students' general curiosity and motivation for CMC practice may not be as compelling as before.

One important difference worthy of our attention is that the students tended to make notes to themselves while reading on hardcopies, which showed they were actively interacting with the paper drafts. This proved an important process for many peer editors as the survey results shall suggest.

Examination of Affect

Survey Results

Survey responses were elicited to answer the following four questions:

1. Do the students prefer reading on the screen or on paper and why?
2. Do the students prefer writing on paper or by typing on computers and why?
3. What are the students' overall responses towards using ACMC for peer review purposes?
4. What is the students' overall preference between the e-mode of editing and the paper mode?

The results show that reading and writing are two different processes and are hard to conciliate in this context. Most students (9 out of 12) preferred reading on hardcopies while most (9 out of 12) preferred typing into the computer. For the rest of the informants, they either reported that they "do not care" or their preferences varied according to context. For the reading process, seven students complained that reading from the screen was bad for their "eyesight" or they felt tired or "uncomfortable". Six claimed that it was easier to "concentrate" on papers and that the paper mode was more convenient for reading and commenting at the same time. They said "I can highlight and make notes on paper. I also tend to reread papers." This proved that taking notes

while reading facilitated the students' concentration and interaction with the drafts.

At the same time, most students (9 out of 12) preferred typing into a computer than writing on paper because of the speed of typing and ease for correction. Three of them also mentioned it was "clear to see" on the screen and it "gives [them] a sense of what [they] should do".

Thus we have arrived at a dilemma: either mode would force the students to read and write on papers or on the computer at the same time. But the students' overall response towards using Word and the online Caucus conference was positive.

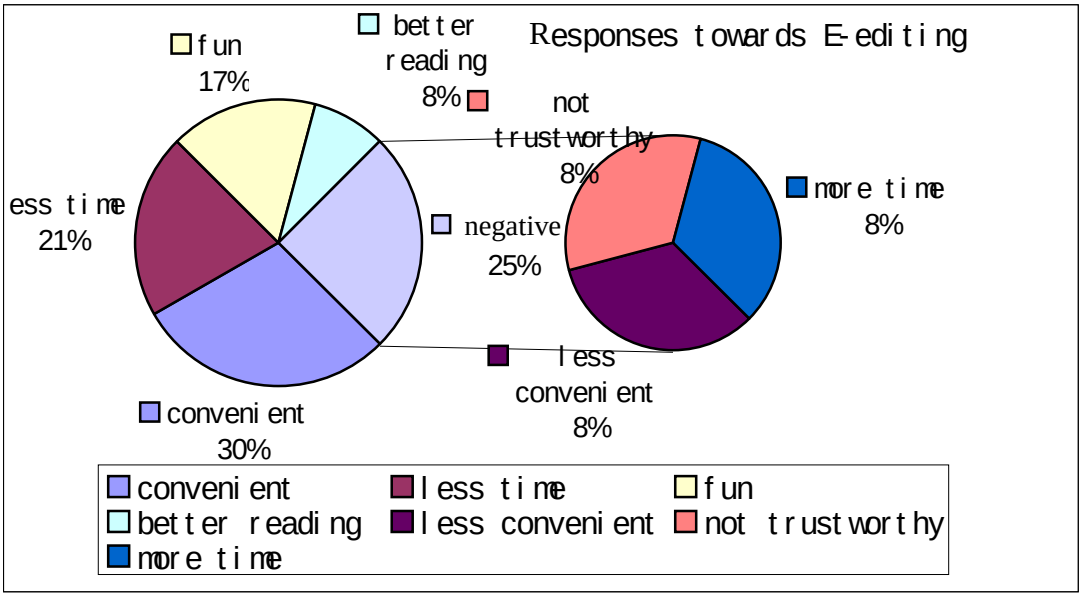

Chart VIII Students' Overall Impression of E-editing

Among the students' responses, 18 were positive. Seven students found editing using Word less time-consuming and five considered it more convenient; four students indicated that the computer mode was "more fun" and two commented that it was "easier" for them to read the peers' comments from the screen because of the problems associated with figuring out people's handwritings. Particularly, five students who used the "track changes" function in Word for the first time especially found it a "fun" experience. This was consistent with the analysis of the "effect," which suggested that students were intrigued and therefore motivated when the electronic peer review method was first introduced.

Interestingly, some other students had exactly the opposite response. Among the negative responses, some complained that CMC was more time-consuming and less convenient. A student wrote that editing using Word was at the same time more and less convenient "because it saves time from writing [on the one hand] and keeps your hand from writing [on the other]." Two other students mentioned that they found Word "not trustworthy," because it "sometimes destroys everything."

When it comes to the students' overall preference, the issue remains controversial. Three students preferred to use ACMC because it was easier to figure out the comments and they could "check them any time" and they "would never lose them". Four preferred peer editing on

hardcopies because it was “easier to read different comments on paper” and it was “inconvenient to open several windows”. However, the more common response (from five students out of the twelve) was that the different modes did not bother them. As one of them said, “What I care is about the revising and feedback part.”

Discussion of Affect

On the whole, the survey results are in accordance with findings of previous researchers. While students’ overall response towards CMC appeared positive, attitudes towards CMC were not unanimous.[13] Tannacito & Tuzi (2002) reported that the students liked using computers for e-response. But similar to our results, Jiang (2004) found that while the students responded favorably to ACMC (the email modality), some still thought it a waste of time. Students’ complaints toward ACMC also included the issues of “time-consuming,” “technical difficulties” and the inconvenience of “computer access” (Liu & Sadler, 2003, p. 218-219). In addition, Matsumura & Hann (2004) found that the students’ preference for online vs. face-to-face feedback varied as a function of their level of computer anxiety.

The current study further suggests that a good proportion of the students did not have a dominant preference for a certain mode. At the same time, when the reading and writing processes were perceived as independent processes, it appeared that reading from hardcopies and writing with computers was considered more convenient. However, in the reality of peer review processes, reading and writing cannot be separated. This may lead to some controversial and neutral attitudes towards the modes.

The survey results also support our categorizations of the comment types: local alteration was found to be different from other comments according to students’ responses. In our study, local alterations were exclusively examples of spelling, punctuation, and grammar corrections. Most (7/12) students reported that they found these comments to be the least helpful, either because they could correct these errors themselves or the classmates did not address errors correctly. Local suggestions, clarifications and evaluations were, however, often issues of the writer’s expression, and some students found comments regarding the clarity of wording valuable. The students’ answers also showed that most of them (9 out of 12) perceived themselves as benefiting most from global feedback on organization and content. The rest of them either found specific comments or the peers’ general and personal impressions (i.e., summative or end comments) most valuable. This suggests that the in-text comments and end comments are different in nature and are preferred by different writers/reviewers.

Conclusion

From our study, we find that the electronic mode of peer editing and paper editing does not necessarily cause a qualitative and quantitative change in the peer editors’ feedback. On the contrary, there is evidence that feedback elicited by both modes could be similar in comment amount, distribution, and the writers’ style of expression. Thus, in our study, most peer editors did not vary their way of reviewing simply because of the change of mode, and most writers benefited from both modes.

The project reaffirms previous studies on students' attitudes towards CMC in that their responses are generally positive. At the same time, however, there is no evidence that students would clearly prefer one mode over another. Researchers and teachers should bear in mind that the students' willingness to accept the technology is by no means an indication of their preference.

Our study also indicates that while the students do not necessarily benefit more (nor less) from e-editing itself, they do benefit from new experiences in the classroom. They tend to treat assignments more seriously when the assignment appears to be "new" and "interesting." It is hypothesized that the initial introduction of the computer mode in the classroom could result in a positive increase in student motivation. At the same time, when the e-mode becomes a regular practice, the effect and affect of the innovation may decline to the point that the mode does not make a difference any more.

Due to the small sample size and the limited time frame, the findings of this project are not meant to be over-generalized. However, some implications may be useful. For one, studies on the effect and affect of CMC in ESL writing classes may be applicable to regular (native speaker) writing classrooms too (Tannacito & Tuzi, 2002). Secondly, given the students' different preferences, it seems most advisable to use a combination of the technological method as well as the traditional method in a language or writing classroom. This is also suggested by other researchers (Liu & Sadler, 2003; Tannacito & Tuzi, 2002). Thirdly, the electronic mode of peer review may be beneficial for various reasons, but it is probably best received when it is introduced into the classroom as a "new" experience. Therefore, innovations and different practices (not limited to CMC) in the classroom should be encouraged. ACMC can also be encouraged for logistic reasons, since we would be saved from photocopying multiple drafts; collaborative information sharing and data maintenance could be also be made easier. But while the technology certainly offers us a new tool and an available alternative, there is no evidence that one should replace the traditional methods of peer review with the technology-aided ones.

Notes

[1] An earlier version of this project was presented in May 2006 at the *Computer Assisted Language Instruction Consortium (CALICO)* Conference at the University of Hawaii.

[2] In old versions of Word, an added comment could only be seen when the cursor arrow was placed over the commented (highlighted) text. In newer versions of Word, comments are shown in the margins of the text, with lines connecting the comments to the relevant part of the text. It is suggested by previous literature that the "invisibility" of the comments in the old versions of Word may have resulted in students' giving less attention to electronic responses (Liu & Sadler, 2003).

[3] Caucus functions like a bulletin board system and is used for asynchronous e-communication. It is often effective for posting class syllabi, announcements, assignments and handouts. More information on Caucus can be found at the <http://www.caucuscare.com>.

[4] It should be pointed out that comments for each draft did not always come from the same nine students. Because the writer himself/herself did not participate in the peer review process, this group of "reviewers," though all from the same small class of twelve, were not held constant throughout the semester.

[5] The completion of the survey was voluntary and it was made clear to the students that their responses towards the survey questions would not affect their grade in the course.

[6] The distinction between different "natures" of comments is often murky. The coding strategy adopted here is that if one single comment appears to have characteristics of more than one nature, only the predominant nature is considered. For instance, in this comment "Poor people? Explain," "suggestion" is more important than "evaluation."

At the same time, there are some comments that contain more than one response unit. The following is an example:

Till here, you are still presenting the problem and contemporary issue. But did not mention why we need to raise the tax and why your opponents' ideas are false. Since the paper requires 8-page long, I think you can still maintain what you have done, and put all your effort to argue your points in the remaining 5 pages. Stop citing so many figures, pay attention to the reasoning part.

While the first two sentences are rated as "global evaluation," the rest is considered "global suggestion."

[7] It was suggested by Liu & Sadler (2003) that the easier access to a peer review sheet in the traditional mode may have made students to rely more on peer review questions in the t-mode, resulting in more global comments.

[8] A similar research project by Liu & Sadler (2003) also reported no global alterations and that local ones were mostly grammar/spelling checks in both modes.

[9] Alteration comments were not included in these word and comment counts.

[10] The numbers of students giving end comments to drafts A, B, C, and D are 7, 6, 4, and 7, respectively.

[11] Because "having good ideas" is vague and is not one of the requirements listed on peer review sheets, such notes were considered friendly gestures only. Students often use such expressions to lead to their actual responses. On the other hand, a positive response like "good organization" was regarded as an evaluative comment addressing peer review questions.

[12] The first part of this comment, though written on the margin, was counted as an "end comment" because it did not address specific issues but the essay as a whole. Meanwhile, this student gave no other in-text comments.

[13] It may be relevant to point out that many studies on SCMC in foreign language teaching find students' attitude towards SCMC very positive. See Beauvois & Eledge (1996), Coniam & Wong (2004), Kern (1995), Warschauer (1996), and Alvarez-Torres, & Zhao (2003), among others. However, as Liu & Sadler's (2003) project reports, students' attitudes towards the SCMC and the ACMC modes can be vastly different.

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Appendix

1. Examples of comments according to area type and nature type

Alteration		Suggestion		Clarification		Evaluation	
L	G	L	G	L	G	L	G
Thus, this causes me to become more independent than ~~other same age children~~ children who has the same age [sic.]	//(Split a paragraph into two.)	Ease transition from languages to talking how are you grown. [sic.]	Explain a little why it was good when it was time to study mathematics	Not any more ?	Why were you intimidated by your color? How were you challenged?	Spoken language	This is a bit far from the topic.

2. Comparison of the total number of comments (alterations excluded), comparison crossing different units (Unit Two essay peer reviews versus Unit Three peer reviews) and modes and comparisons between each draft.

Comparison of total number of comments

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Draft A	9	7.0000	3.53553	1.17851	4.2823	9.7177	1.00	13.00
Draft B	9	5.7778	2.10819	.70273	4.1573	7.3983	2.00	8.00
Draft C	9	3.5556	2.40370	.80123	1.7079	5.4032	.00	6.00

Draft D	9	3.7778	3.52767	1.17589	1.0662	6.4894	.00	10.00
Total	36	5.0278	3.18466	.53078	3.9502	6.1053	.00	13.00

Comparison of Comment Numbers Crossing Different Units and Different Modes

Contrast	Value of Contrast	Std. Error	t	df	Sig. (2-tailed)
Comments to Unit Two essays versus comments to Unit Three essays	5.4444	1.97672	2.754		.010
Electronic comments versus traditional comments	1.0000	1.97672	.506		.616

Comparison of Comments Between Each Draft

			Mean Difference			95% Confidence Interval	
	(I) ESSAY	(J) ESSAY	(I-J)	Std. Error	Sig.	Lower Bound	Upper Bound
LSD	Draft A	Draft B	1.2222	1.39775	.388	-1.6249	4.0693
		Draft C	3.4444(*)	1.39775	.019	.5973	6.2916
		Draft D	3.2222(*)	1.39775	.028	.3751	6.0693
	Draft B	Draft A	-1.2222	1.39775	.388	-4.0693	1.6249
		Draft C	2.2222	1.39775	.122	-.6249	5.0693
		Draft D	2.0000	1.39775	.162	-.8471	4.8471
	Draft C	Draft A	-3.4444(*)	1.39775	.019	-6.2916	-.5973
		Draft B	-2.2222	1.39775	.122	-5.0693	.6249
		Draft D	-.2222	1.39775	.875	-3.0693	2.6249
	Draft D	Draft A	-3.2222(*)	1.39775	.028	-6.0693	-.3751
		Draft B	-2.0000	1.39775	.162	-4.8471	.8471

	Draft C	.2222	1.39775	.875	-2.6249	3.0693

* The mean difference is significant at the .05 level.

3. Survey Questionnaire

You are invited to voluntarily participate in this research study. The purpose of the study is to investigate the effectiveness of peer review sessions in the first-year composition classroom, and the difference, if there is any, between electronic modes of peer editing and the traditional mode. If you have more input on the issue, feel free to add anything. Your response and answers will not affect your grade in your first-year composition class. Your name will not appear on the questionnaires, and there is no cost to you except for your time. (On the other hand, you will not be compensated for participation.) By responding to the questionnaires, you are giving permission for the investigator(s) to use your responses for research purposes only.

Demographic questions

Age _____ Sex _____ Ethnic Origin _____

Questions

1. Do you find peer review sessions helpful? (Yes, a lot/A little/Not sure). Why? Do you trust your classmates' comments? (Yes, always/Usually/Depends/Not really) Why?
2. What kind of feedback do you often get from your classmates?
3. What kind of feedback is most helpful for you?
4. What kind of feedback is less helpful for you?
5. To what extent do you use computers to complete your academic work?
6. When you read, do you prefer reading from the computer screen or reading on paper? Why?
7. When you write, do you prefer using pen and paper or typing into a computer? Why?
8. Have you ever used Microsoft Word's 'track changes'/ 'add comment' features before we introduced them in class? How often do you use these functions and for what purposes?
9. What do you think of editing using Word? (More/less interesting? More/less convenient? More/less time-consuming? More/less effective? Makes no difference, etc.) Why?
10. On the whole, do you have any preferences between peer editing using Word and editing on

hardcopies? Do you have any preferences between getting comments from Caucus and from hardcopies? Explain.

11. Do you think it is necessary that we include a discussion session after the sample papers are peer-edited? (Absolutely important/Not necessary/I don’t care, etc.) Explain.