EFFECT OF COMPUTER MEDIATED COMMUNICATION AND FACE-TO-FACE COMMUNICATION ON THE STUDENTS' WRITING

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ABSTRACT

This research aimed to investigate the effect of computer-mediated communication (CMC) and face-to-face (F2F) communication on the students' writing. The subjects were the English department students of the fourth semester at the private University in Madiun. The researchers employed the students in class A and B as the research subjects. The research method used was a quasi-experimental design. The research design was divided into pre-test, treatment, and post-test. Both of the two groups were given pre-test to see the homogeneity of the two groups. The experimental group was given CMC, and the comparison group was given F2F communication. Then, both of the two groups were given post-test. The data collection technique was done by giving the students a writing test. Data analysis was done by employing the independent t-test. The result shows that the students' writing after employing F2F communication is more effective than students' writing after employing CMC. The students like to share the ideas directly than they employ CMC because it is more complicated. In addition, it is because the students find difficulty in sharing the ideas through CMC, so, F2F communication is better than CMC on the students' writing quality.

Keywords: computer-mediated communication, face to face, writing

INTRODUCTION

Nowadays, many learning activities are based on the technology to support the 21st century of learning styles. Students are encouraged to corporate themselves in using technology in the digital area. The use of the internet, mobile, online videos, and others medium are demanded to gain better learning quality. Thus, the use of the computer as the medium of learning activities is usually used in the classroom. Computer-mediated communication is one of the medium used in the target of learning.

Warschauer (1997) has stated that CMC technology has the features that make it possible to promote and to provide more chances in the learning process of interaction due to the use of the internet. Furthermore, the research of CMC has been conducted by many researchers, such as Al-Olimat and AbuSeileek (2015), Becker-Beck, Wintermantel, and Borg (2005), Camacho (2008), Cha (2007), Daniels (2012), Fageeh and Mekheimer (2013); Hardaker (2010), Lo (2009), Mahdi (2014), Moloudi (2011), Perry (2010); Sapp and Simon (2005); Tidwell and Walther (2002); and Warschauer (1995).

Al-Olimat and AbuSeileek (2015) have shown the highest significant mean scores and writing performance by using computer-mediated corrective. Becker-Beck, Wintermantel, and Borg (2005) have mentioned about interaction used in CMC units that contain a direct reference. Camacho (2008) has focused on Computer-Mediated Communication (CMC) on writing, Cha (2007) has focused on communication modes on peer feedback pattern, Daniels (2012) has established a strong social presence between students and the instructor in CMC. Fageeh and Mekheimer (2013) have studied using blackboard on CMC to teach academic writing. Hardaker (2010) has studied about trolling in CMC, Lo (2009) has focused on CMC in writing, Mahdi (2014) has focused the implementation of CMC on fostering the language learning. Moloudi (2011) has focused on online and F2F peer review, Perry (2010) has studied about F2F and CMC, Sapp and Simon (2005) have studied about comparing online and F2F in writing. While Tidwell and Walther (2002) have studied computer-mediated communication effects on disclosure, impressions, and interpersonal evaluations; and the last Warschauer (1995) has focused on computer-mediated collaborative learning. All of the previous research has investigated the use of CMC and F2F communication in the teaching-learning process in the classroom.

The use of CMC facilitates the students' learning

in the classroom. There are two types of CMC, namely synchronous and asynchronous. The synchronous is done in the real time or the online discussion with one another. Then, the asynchronous is done in the delayed time such as email. Pour and Tahriri (2016) have focused on the effect of synchronous CMC on EFL (English as a Foreign Language) learners' collaboration. Cha (2007) have studied communication modes which focus on peer feedback pattern. The research has investigated the two different CMC modes namely synchronous and asynchronous on writing. The result has shown that there are different patterns on chatting as the synchronous modes and bulletin board as the asynchronous mode on EFL writing classes.

Then, according to Baltes et al. (2002), CMC may be an efficient mode of circulating the information. Ocker and Yaverbaum (1999) have studied asynchronous CMC. The result has indicated that asynchronous CMC is effective than F2F communication pertaining to the quality of learning, quality of the content, quality of the solution which are very satisfying. Thus, many previous pieces of research have been conducted in the area CMCby using synchronous and asynchronous.

The use of F2F communication brings the students to have better interaction directly in the teaching-learning process. It is a media communication used by the students to interact with one another in teaching learning in the classroom. The students can exchange their ideas in discussing the particular topic one another. Meyer (2003) has focused on the research on using F2F communication to dig more the higher order thinking of the students. This research has provided many themes in the discussion using F2F communication. The result has indicated that the use of F2F communication effective to have better mode communication in the teaching and learning process. It has shown that F2F communication provides some reinforcement for affirming the higher-order thinking of the students and increases the number of responses in the integration of the teaching-learning process. The students participate in the discussion pertaining to the information and various activities to reinforce the ideas and promote better discussion.

The use of CMC and F2F communication are also used in writing classroom for both of the ESL (English as Second Language) and EFL context. Camacho (2008) has investigated about Synchronous Computer-Mediated Communication (SCMC) on writing. The students in SCMC outperform well than the other group on writing fluency. The students find that using SCMC affects the positive benefit in term of linguistics on writing. Fageeh and Mekheimer (2013) have investigated on using blackboard on CMC to teach academic writing. It has aimed to improve the students' attitude on academic writing. The result has shown that the use of blackboard on CMC facilitates students' to improve the students' writing, creates interactions on collaboration, and reinforces to do scaffolding on learning within their online community.

Ho and Savignon (2007) have investigated F2F and computer-mediated peer review in EFL writing. Li and Zhu (2013) have researched small writing group using wikis to see the pattern of CMC effective or not. The results of the research indicate that the evaluation of individual work needs to be emphasized so as to facilitate equal contribution and reciprocal interaction. Furthermore, Perry (2010) has examined differences modes of communication on using F2F and CMC are experienced for individuals communicating with the other students in partner discussion. Thus, F2F

communication is formed in pair discussion for the students and used in writing class.

The researchers have found the limitation or discrepancy on the previous research on CMC and F2F communication on the students' writing. Ho (2015) has mentioned that the investigation aims to pair up the procedure on the different modes of communication in the different group. It might affect the quality of the students' learning on peer and discussion. The experimental might be conducted to see the effectiveness of the modes. Thus, the researchers formulate the research problem as, "Do the students who are taught by using CMC have better writing quality than the students who are taught by using F2F communication? Furthermore, this research is intended to know whether the effect of CMC is effective than F2F communication on the students' writing quality.

METHODS

The research investigates the effect of CMC and F2F communication on the students' writing quality. It is conducted at the university level at the English Department of Universitas PGRI Madiun. All the students at the fourth semester of English Department are the population of the research. There are 52 students in an intact class. The participants are 26 students in the experimental group and 26 students in the comparison group.

The procedures of using CMC and F2F communication are divided into different teaching practices. The two different teaching practices are conducted in the experimental group and the comparison group. The use of CMC is conducted in the experimental group and the use of F2F communication in the comparison group, the design can be seen in Figure 1.
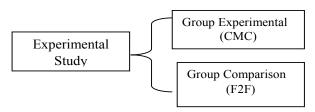

Figure1 Design Experimental Study

The activity of using CMC is divided into some stages. First, the students are given the topic to be discussed in the asynchronous or in the delayed time. The students are sent the topics to be written in good form of writing. There is no explanation in this teaching practice. The students are only asking one another with their friends during the writing time. After finishing their writing, they submit the result in the final draft to the lecturers by sending the lecturer an email. By this activity, the lecturer could assess the students' writing. It is to know whether this strategy helps the students well or otherwise, they find the difficulty in writing.

The activity of using F2F communication is conducted in the conventional teaching such as in the pair work discussion. There are three stages in this activity namely opening, whilst, and closing activity. In the opening activity, the main activity is motivating the students to join the teaching-learning process well. The whilst activities are: (1) the students are paired in randomly, (2) the lecturer explains the topics to the students, (3) they are given opportunities to discuss together to find or share the ideas

about the topic they are going to write, (4) after discussing about the topic they begin writing individually. Finally, the closing activities are given chances to the students to ask question referring to the topic and ask them whether F2F communication provides them a lot or not in preparing their ideas before they start writing.

To collect the data in this research, it is done by giving the students the test. Writing test is given to the students to see which treatment is effective in helping the students in writing. The researchers make the writing test about the argumentative essay. Argumentative essay is one of the types of the writing which the students should master well on writing skill. It is constructed before the research is employed. The validity of the writing test is obtained from the construct and content validity. The construct validity is fulfilled when the writing prompt requires the students to write, and there is a scale to assess. Then, the content validity is seen from the coverage of the task. The reliability is obtained from the use of inter-rater reliability test. The researchers involve the inter-raters to know the consistency of the test. The raters are given the training to assess the students' writing. The raters are involved to avoid the biased judgment of the writing score. The two raters are also involved in scoring the writing test. The researchers also construct the scoring rubric of writing that is based on the organization, content, grammar, punctuation, and vocabulary.

To analyze the data which are collected from the students' writing, Statistical Product and Service Solution (SPSS) 17 is used. The descriptive statistics and independent t-test are used to measure any statistically significant differences in the result of students' writing both of the two groups of CMC and F2F communication. The researchers use the significance level of .05. Two hypotheses are testing to be used to discuss the result of the research. The hypotheses are;

HO: There is no significant difference between the two groups of CMC and F2F communication.

H1:   There is the significant difference between the two groups of CMC and F2F communication.

RESULTS AND DISCUSSIONS

The description of this research is explained based on the analysis of the students' score in pre-test and post-test. The groups are treated in different treatments. The experimental group is given CMC, and the comparison group is given F2F communication. There are four tables in the following which can provide the findings' description. Table 1 provides the descriptive statistics pre-test both of the two groups which are employed computer-mediated communication and face-to-face communication. Table 2 provides the independent sample t-test of the pre-test both of the two groups which are treated by CMC and F2F communication. Table 3 provides descriptive statistics post-test both of the two groups which are employed CMC and F2F communication. While Table 4 provides the independent sample t-test of the post-test both of the two groups; CMC and F2F communication.

Table 1 shows the descriptive statistics of pre-test both of two groups which are treated by CMC and F2F. It shows the number of the subjects, mean, the standard deviation, and standard error deviation of the two groups of CMC and F2F communication. There are 26 students in

both of the two groups (CMC and F2F). The mean of the CMC is 73,0385, and the mean of F2F communication is 72,4615. The standard deviation of CMC is 6,47754, and the standard deviation of F2F is 7,42014. The standard error mean of CMC is 1,27035 and standard error mean of F2F is 1,45521. The results of the two groups show the actual difference. This means that there is no significant difference between both of the two groups of CMC and F2F. It means that the two groups are homogenous. Furthermore, Table 2 is an independent sample t-test to show the significant difference between the two groups.

Table 1 Descriptive Statistics of Pre-test Both of Groups which are Employed CMC and F2F

	F2F	N	Mean	Std. Deviation	Std. Error Mean
CMC	1,00	26	73,0385	6,47754	1,27035
	2,00	26	72,4615	7,42014	1,45521

Table 2 shows the result of the independent sample t-test of pre-test both of two groups which are treated by CMC and F2F. The independent t-test is used to see the homogeneity of the two groups. It is used to provide whether the two groups of CMC and F2F communication in the same ability to be continued in the next stages. The result of the sig. is 0,152. It can be seen from the Levene's test for equality of variances. It indicates that the result exceeds the level significance of 0,05. The complete table of the result can be seen in appendix 1. This means that there is no significant difference between both of the two groups of CMC and F2F communication. Thus, HO cannot be rejected. This result shows that the two groups are homogenous. Furthermore, the two groups are given the treatments of CMC and F2F communication.

Table 3 Descriptive Statistics of Post-test Both of Group which is Employed CMC and F2F

	F2F	N	Mean	Std. Deviation	Std. Error Mean
CMC	1,00	26	81,7308	3,21941	0,63138
	2,00	26	86,6154	1,44435	0,28326

Table 3 shows the descriptive statistics of post-test both of two groups which are treated by CMC and F2F. The results show the number of the students, the mean, the standard deviation, and standard error deviation of the two groups of both. There are 26 students in both of the two groups (CMC and F2F). The mean of the CMC is 81,7308, and the mean of F2F communication is 86,6154. The standard deviation of CMC is 3,21941, and the standard deviation of F2F is 1,44435. The standard error mean of CMC is 0,63138 and standard error mean of F2F is 0,28326. The result shows that the mean of F2F communication is higher than the group of CMC. There is significant difference means both of the two groups. Furthermore, Table 4 is the independent sample t-test to show the significance of the two groups.

Table 4 shows the result of the independent sample t-test of pre-test both of two groups which are treated by CMC and F2F. The independent t-test is used to see a

significant difference between both of the two groups. The result of the sig. is 0,000. It can be seen from the t-test for equality of means. It indicates that the result is lower than the significance level of 0,05. The complete table of the result can be seen in appendix 2. This means that there is a significant difference between both of the two groups of CMC and F2F communication. Thus, HO can be rejected. Furthermore, the result of face-to-face communication is better than the group which is treated by CMC.

The results of pre-test both of the two groups are homogenous. It can be seen from the mean both of the two groups which do not show the actual difference. The mean of the CMC is 73,0385, and the mean of F2F communication is 72,4615. It is also found that the significance level of the two groups of CMC and F2F communication exceeds the level of significance. The result of the sig. is 0,152. It can be seen from the Levene's test for equality of variances. Thus, the groups are homogenous before both of the two groups are given the treatment by using CMC and F2F communication.

The results of post-test both of the groups show the actual difference of means. The mean of the CMC is 81,7308, and the mean of F2F communication is 86,6154. The result shows that the mean of F2F communication is higher than the group of CMC. It can be stated that the use of F2F communication is better than the use of CMC. The result of the sig. is 0,000. It can be seen from the t-test for equality of means. It indicates that the result is lower than the significance level of 0,05. This means that there is a significant difference between both of the two groups of CMC and F2F communication.

The result of the research shows that F2F communication is better than CMC on the students' writing. The previous hypotheses which are mentioned that HO which stands for there is no significant difference between the two groups of CMC and F2F communication can be rejected. Thus, H1 is accepted that there is the significant difference between the two groups of CMC and F2F communication. There are many reasons and implications that the use of F2F communication is helping the students to gain better writing that succeeds to help the students in writing activity.

The use of F2F communication makes the students more understandable in communicating with one another for exchanging or sharing the ideas. Becker-Beck, Wintermantel, and Borg (2005) have found F2F communication effects the students in writing. F2F communication is better than CMC on the students' writing. It is effective in helping the students' work on writing. The students share the ideas directly without waiting for the internet connection to share with the other friends. Moreover, F2F communication makes the students interact with one another on their discussion. Unlike, the students who write by using CMC only performs better at generating tasks. It requires little richness of communication environment.

Using F2F communication can strengthen the good communication and achieve social constructivism. Vygotsky (1978) has mentioned that the discussion one another student can gain social constructivism and collaboration. Using F2F communication creates social constructivism and interact one student with another student. Daniels (2012) has found that F2F can be used to integrate the students' attitude and the students' social-emotional in the learning activity. The students are more active in writing and become competitive to assert themselves in their discussion to start writing. It considers the students become autonomy in teaching and learning community.

It contrasts with the previous research findings from Lo (2009). He has reported that using online mode helps the students seek the solution to solve the problems in teaching activity. The use of CMC is suggested to use the tool and open sources relating to the material. CMC affects the students' task in the classroom. It is used to communicate, discuss, and co-build the knowledge from the collected information by using technology and using the internet connection. It is the weakness of CMC that the students cannot discuss directly. This means that the communication is delayed until the students have found the connection to exchange their information.

Ho (2015) has found F2F communication is effective in helping the students to solve their writing problem. It constructs their thinking before the students start to write. Then, the use of F2F communication also affects the students' preferences in interacting with others. The students feel that F2F communication is directing them to share the ideas directly than using the online mode of communication such as CMC. The students' behaviors are also affected during the entire discussion in F2F communication. So, F2F is better to help the students in sharing the ideas to build the social constructivism.

Using F2F communication can improve the component of writing such as grammar, vocabulary, organization, and style. Jones et al. (2006) have found that the students' writing in F2F communication is closed on the main issues of grammar, vocabulary, and style. F2F communication helps the students to write effectively according to the writing aspect specifically on grammar, vocabulary, and style. In addition to, Wichadee (2013) has mentioned that using F2F communication can support the students in one another in writing activity. The students review and give suggestion directly on how to start writing. The students can motivate one another directly in writing activity. The use F2F communication can promote interaction with one another in giving review and suggestion on the aspect of grammar, vocabulary, and style of the students' writing. Furthermore, it can be said that F2F communication is more effective in producing writing quality than CMC.

F2F communication is easier and more natural than in online discussions. Qiyun and Huay (2007) have reported that F2F communication is the efficient medium of communication in writing. It supports multi-communications, provides more social interaction, and leads the direct clarifications. In addition to, Ho and Savignon (2007) have investigated the global issue of writing on F2F communication that has focused on peer review. The students have to give the review, comment, and also the suggestion to others students' writing that helps the students to improve the writing. The students are not only provided written feedback but also given chances to clarify ideas and exchange opinions one another. On the other hand, using CMC makes the students have to rely only on feedback on the document itself without communicating directly. Furthermore, the use of F2F communication is effective in giving the students peer review, easier, and more natural than CMC.

In conclusion, the effect of F2F communication is better than CMC on the students' writing. There are many reasons to support the result of F2F towards the students' writing quality. The reasons are: (1) F2F communication makes the students more understandable in communicating with one another for exchanging or sharing the ideas, (2) F2F communication can strengthen the good communication and achieve social constructivism, (3) F2F

communication can improve the component of writing such as grammar, vocabulary, organization, and style, and (4) F2F communication is easier and more natural than in online discussions.

CONCLUSIONS

This research depicts that there is the significant difference between the use of CMC and F2F communication towards on the students' writing quality. The use of F2F communication is better than the use of CMC that the result is different from the hypotheses testing which is ample in the beginning. There are many reasons that the effect of F2F communication is effective. It makes the students more understandable in exchanging or sharing the ideas before the students start writing. Besides that, it can strengthen the communication of the students and improve the students writing component, and it is more natural and easier done in the classroom.

This research has the limitation that can be done for the future research or investigation. It is suggested to do the research on the CMC and F2F communication on the writing quality and writing performance. It can incorporate the students' learning styles and the different task of writing in using CMC and F2F communication. It is hoped better result for the future research.

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Appendix 1

Table 2 Independent Sample t-test (Pre-test both of group which is employed CMC and F2F)

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
VAR00001	Equal variances assumed	2,118	0,152	0,299	50	0,766	0,57692	1,93169	-3,30299	4,45683
	Equal variances not as-sumed			0,299	49,105	0,766	0,57692	1,93169	-3,30474	4,45859

Appendix 2

Table 4 Independent Sample t-test (Post-test both of groups which is employed CMC and F2F)

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
VAR00001	Equal variances assumed	10,680	0,002	-7,059	50	0,000	-4,88462	0,69201	-6,27456	-3,49468
	Equal variances not as-sumed			-7,059	34,672	0,000	-4,88462	0,69201	-6,28994	-3,47929