

## **CHAPTER III**

### **METHODOLOGY**

This section provides the methodology of the study as it has been previewed in the introduction and literature review. The investigation of this study will be explained through the divisions in research methodology which consists of research method and design, setting, participants, data and data sources, instruments, data collection procedures and data analysis procedures.

#### **3.1 Research Method and Design**

Considering the purpose of this study, this research encompassed the characteristic of case study design combining with quantitative and qualitative data collection and analysis because the researcher would like to investigate the implementation of online collaborative writing in Argumentative texts using Synchronous and Asynchronous Computer-Mediated Communication (CMC), PBworks and Google Hangout. The case study has corresponding features to the characteristic of this research such as the focus is on a single and group of people in a specific place and an activity at university (Burns, 1994). By employing case study, this study will obtain a thick description (Dornyei, 2007), rich and in-depth insight (McMillan& Schumacher, 2001) of issues involved in the online collaborative writing in a naturalistic. He also allows the researchers to examine how an intricate set of circumstances come together and interact in shaping social world around us.

Several factors determine the choice of qualitative method with the case study approach suit to this study. First, case study approach has

proven to be useful in the study of collaborative writing. Most research on collaborative writing has utilized small groups or a case study in data collection (Corden, 2001; DiCamila and Anton, 1997; Faulkner, 1989; Stroch, 2001, 2002, 2004; Tocalli-Beller, 2003; Yong, 1998), as the approach provides a rich and thick description of events that took place. Second, the nature context of the classroom setting of the present study is in line with Robert Yin's (1984) proposal of a case study, which investigated a contemporary phenomenon within a real-life context. Third, the case study is particularly valuable when the researcher has little manipulation over events (Hitchcock and Hughes, 1995). Since it is difficult to control the nature of human collaboration, the case study is suited for the present study. The main aim of the approach is to capture the close-up reality of the collaboration and to obtain a thick description of participants' views and feeling about the experience; this approach is relevant to the current study, since the study relies heavily on real-life experiences.

### **3.2 Research Setting**

The study was conducted in one of faculties in Telkom University (abbreviated as Tel-U), School of Applied Science located in Bandung. This school has eight study programs; - Computer Engineering, Computerization Accounting, Hotel Management, Informatics Engineering, Informatics Management, Marketing Management, Multimedia System, and Telecommunication Engineering. School of Applied Science is well-established consisting of four floors, air conditioned, and systemically arrangement to ensure the quality of teaching and learning. The classes

are designed for 35 – 40 students, which have various seat arrangements. All academic activities have been computerized, including LMS and RFID system, and the students are facilitated free laptop since in the beginning of their first semester. Meanwhile, for English course itself, as it is included into general basic course, the class is held in Bangkit Building (GKU) where all general basic courses are conducted. This building consists of ten floors where English classes itself are always conducted on the seventh floor.

For the present study, the researcher took the study program of Informatics Management as the research field, which are the following reasons taken into account. First, having been nine years teaching experiences, the researcher has familiar with the condition, situation and atmosphere of the institution, including the students and the lecturers. In addition, the researcher has similar experiences in term of teaching problems and handling students with various English proficiencies. Second, as the coordinator of English Course Development of Applied Science School, the researcher has responsibility not only develop the syllabus but also teaching methods and techniques to tackle problems and barriers occurring in the classrooms. Therefore, this study was taken as a pilot study for English teaching development in Applied Science School, although the result of study cannot be generalized. Last but not least, the studies of benefits of combining synchronous and asynchronous communication tools into the design of online learning environments has grown nowadays. As Oztok et al. (2012) stated that synchronous and asynchronous communication tools rather they are evaluated in isolation, it should be how

they can supplement one another. Thus, this study will be beneficial in supporting and developing blended learning environment in Telkom University, especially in Applied Science School.

In Telkom University, English is categorized as a supplementary course supporting communication skill competence consisting of two types, - English as University Course and English as Faculty Course. English as University Course developed by PPDU, commonly called as English I, is given to the first-year students, which can be delivered in the first or the second semester. English I is general English which of the contents are Basic English aiming to enable students understand and accept different perceptions in cross-culture understanding (CCU), which is in line with University vision to be a world class university playing an active role in the development of information-technology based science and arts. English I has two credits, with one credit equaling 50 minutes classroom teaching/learning activity. The number of students in each class is quite big, around 30-40 students and four main English skills, speaking, writing, reading and listening, are taught integrated.

Meanwhile for English as Faculty Course, University gives the full authority to each study programs to develop it based on the needs of study program itself. For Informatics Management study program itself, English is given for four semesters, - English I – English IV. English I is given in the second semester, following English II in the third, English III in the fourth and English IV in the fifth semester. As English II, English III and English IV are developed by the study program; therefore, the contents and aims of

courses are to support graduates' skills in their fields as Information System Engineers. To fulfill this demand, the four skills must be integrated in teaching and learning activity, except for English IV which focuses on academic writing.

In term of course focus, English II, English III and English IV have their own specific focus, - English II is Reading, English III is English for Career, and English IV is Academic Writing. As English IV has focus on academic writing, the students are provided with basic knowledge of steps in writing process. In syllabus description of English IV (Academic Writing), the aim of the course is clearly stated as below:

*“English IV is the continued course of English III focusing on academic writing skills. This course will support students' competence in understanding English text and expressing idea by having writing skill in form of complete paragraph and producing an academic paper or proposal using proper English and based on related issues, problem solving and solution based on Information System point of view.”*

In reference to the description of the syllabus of English IV (Academic Writing) above, there are several possible background reasons for this problem. First, the insufficient time allocation, which is two credits per week, per semester. Writing should be taught as a craft, which needs a lot of practice, guidance and feedback, not as a “one shot activity”; therefore, two credits for teaching writing in big classes (30 – 40 students) is not sufficient. It makes difficult for the lecturer help the students to develop their writing skills in such a short period of time. Second, it concerns on the purpose of the course as mentioned above, which is English IV demands the students to produce an academic paper or proposal without providing sufficient

practice and opportunity for students to become competent writers of a variety of genres.

This study was conducted from September – December, 2017 in class D3MI-39-04 & D3MI-39-05. It was started from the beginning of Odd Semester; although the actual data was taken in the end of semester as the material about Argumentative text is the last academic text delivered. In this study, the students' writings of Argumentative text were taken as a task and an assessment based on scoring system of English IV syllabus.

### **3.3 Research Participant**

The participants of this study were the 5th semester students, class D3MI-39-04 and D3MI-3905, from Diploma degree of Informatics Management study program, which took part in the study upon the researcher's given information on the nature of the study and what was expected from them. The total participants were 43 students, consisting of 23 students from D3MI-39-04 and 20 students from D3MI-39-05. The reasons underlying: first, they have already taken English II and English III where the writing skill has been delivered implicitly on those English courses. Second, English IV (English for Academic Writing) is conducted in the 5th semester; where writing argumentative text is delivered in English IV syllabus. It is in line with the perspective of classroom observation in ESL or EFL, that it would have been much better if the research is taken place in an ongoing and regular class (van Lier, 1988, p. 9). This is because "in an ongoing class things are done along similar lines a number of times, and they turn into routines in which all participants know what is likely to

happen next” (van Lier, 1988, p. 10), which can lead to “a natural and undisturbed lesson” (van Lier, 1988, p. 39). In addition, the project of writing argumentative texts was taken as a task and assessment material in English IV scoring system. Finally, as argumentation is difficult, the researcher hopes that the materials or the tasks given in the class will be in line with their English and writing capacities.

The participants have different level of English proficiency ranging from elementary to intermediate level. Referring to the result of EPrt (English Proficiency Test) and ECCT (English Communication Competence Test), - tests for measuring students English when entering Telkom University, especially School of Applied Science, showed the level of their English proficiency was Low to Middle. Based on the researcher observation during her teaching experience for almost nine years in the research site, English is one of courses that many students neglect. Most of students consider English is boring, difficult, and not important compared to other core courses in their majoring, and even some students who are good at English but during the times they become demotivated.

The ages of the participants are between 18-20 years old. All the participants have advance computer proficiency since they dealt with computer in their campus daily life. The participants were formed into groups of five by the researcher, which was grouped in to high, middle and low achievers, based on the scores of their EPrt and ECCT, the performance in previous English courses, as well as their diagnostic writings in the beginning of English IV class.

### **3.4 Data and Data Sources**

The data source of this study was the 5<sup>th</sup> semester students, D3MI-39-04&05 Class, from Diploma degree of Informatics Management study program. Meanwhile for data, there were five data used to answer the three sub research questions of this study, - transcripts of synchronous chat and asynchronous wiki comment, students' writings on argumentative text, questionnaire, and interview protocols

### **3.5 Instruments of Data Collecting**

In this study, the data were collected from some instruments. The detailed explanations as the following:

#### **3.5.1 Students' Writing of Argumentative Texts**

The students' writings of argumentative texts were collected for the aim of assessing the quality of writing based on the first research question, - in what extent, can SCMC and ACMC improve the quality of students' argumentative texts. The method used was by analyzing students' writing in both essays using two scoring guides, - holistic and analytic scoring simplified by Knudson (1992) based on Toulmin's Model (1958). The holistic scoring with a five-point scale ranging from 0 (low) to 6 (high) was to assess students' first essay and second essay. The criteria for scoring included three categories: the overall quality, the rhetorical features and the language control (Appendix H). Meanwhile, the analytic scores from the first essay and the second essay were compared for the writing quality of six components of argumentative essay: claim, data, warrants, proposition, opposition, and refutation. The analytic scoring with a six-point scale



ranging from 0 (low) to 6 (high) was used to assess students' first essay and second essay (Appendix I).

### **3.5.2 Synchronous chat and Asynchronous Wiki Feedback Instruction**

To collect students' interaction during the collaboration, there were two protocols used, - synchronous chat instruction (Appendix B) and asynchronous wiki feedback instruction (Appendix C). The synchronous chat protocol was used as the guide for the students in using Google Hangout when doing discussion, monitoring, and evaluating the task during the whole writing process. Meanwhile, the asynchronous wiki feedback protocol was used as the guide in using Pbworks when giving feedback to drafts written by their group members.

### **3.5.3 Questionnaire**

Questionnaire was delivered after all the project activities are implemented to find out their opinions and perception on implementing CMCL in their classroom. A close-ended questionnaire called UTAUT 2 (Appendix K) was used to identify how students perceive on the use of Synchronous CMC and Asynchronous CMC as tools in their collaborative writing project.

This UTAUT 2 is the extended model from previous UTAUT. Venkatesh (2012) extended the model with three more constructions, - Hedonic Motivation, Price Value and Habit. As the Pbworks and Google Hangout were free of charge, thus for Price Value construction was eliminated. The questionnaires were divided into seven parts, namely:

performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, habit, and behavioral intention. The questions in the questionnaire were quantified by a Likert-scale from 1 to 7.

The questionnaire was written both in Bahasa Indonesia and English. The reason is although the English proficiency of students is mostly middle to low, the students have been accustomed to reading and written in English on their English chat group.

#### **a. Validity**

To investigate the validity of the questionnaire items, the questionnaire contents were given to two specialists who were an Expert of Pedagogy chosen from the teaching staff of State University of Jakarta and an expert of Information System of Telkom University. In addition, the questionnaire's validity was also statistically examined by Pearson Product Moment with assisting tool SPSS 17.0 version. The item of questionnaire is valid when  $R_{count} > R_{table}$  in the significance 5%, and invalid if  $R_{count} < R_{table}$  in the significance 5% as shown in Appendix B. The results show that there were three invalid questions, namely one question on performance expectancy (PE3), social influence (SI5), and hedonic motivation (HM6). Thus, there were 33 questions were valid.

#### **b. Reliability**

The validity and reliability test were conducted to measure the validity and reliability of questionnaire. To investigate the validity of the questionnaire items, the questionnaire contents was given to experts and

also was statistically examined by Pearson Product Moment with assisting tool SPSS 17.0 version. The item of questionnaire is valid when  $R_{count} > R_{table}$  in the significance 5%. Meanwhile, for the reliability of the questionnaire items, it was tested by using the Statistical Package for the Social Science Program (SPSS) version 17.0, an analysis of item reliability was determined through the reliability Alpha coefficient test. The questionnaire is reliable if  $R_{count} > R_{table}$  (0.381).

**Table 3.1 Reliability Statistics**

| <b>Construction of Aspects</b> | <b>No of Items</b> | <b>Cronbach's Alpha Value</b> |
|--------------------------------|--------------------|-------------------------------|
| Performance Expectancy         | 4                  | 0.819                         |
| Effort Expectancy              | 4                  | 0.847                         |
| Social Influence               | 4                  | 0.867                         |
| Facilitating Conditions        | 5                  | 0.761                         |
| Hedonic Motivation             | 6                  | 0.951                         |
| Habit                          | 5                  | 0.892                         |
| Behavioral Intention           | 5                  | 0.949                         |

#### **3.5.4 Interview**

In this study semi-structured interview was conducted in order to get more comprehensive and deep data. The data were used for supporting and triangulating the data of questionnaire. This is the most common interview type in applied linguistics (Dörnyei 2007:136). The interview guide was planned in advance but the arrangement was unrestricted and the interviewer had the possibility to ask follow-up questions and ask the participants to elaborate on some questions. An interview guide was used for student interview (Appendix N).

For the interview session, nine student participants were selected due to time constraint and their willingness to be interviewed as not everyone was comfortable to give the required details. The respondents were interviewed for

10 to 15 minutes. All the interviewees were asked beforehand if they had preference to answer questions in English or Bahasa Indonesia. Some students preferred to be interviewed in Bahasa Indonesia because they had limited English.

### **3.6 Data Collecting Procedures**

The essential data collection procedure in a case study is multiple resource data collection because it is the major strength in case study (Burns, 1994). Another term for the data collection procedure is multi method strategies (McMillan& Schumacher, 2001) which have similar function to triangulation such as the field notes on the on-going data collection on each teaching session because the researcher acts as teacher observer. Since she is a teacher observer, the study has to be maintained a chain of evidence which was recorded as anecdotal records for collaboration.

The study was taken for five weeks. In week one and two was teaching in the classroom (in which all the topic about writing argumentative process and how to use the tools for collaboration in the present study). The teaching was conducted for two meetings, in line with the syllabus of English IV, where each meeting was 150 minutes. To ease materials delivery in the classroom, the researcher divided one meeting into two sessions, which is each session was 75 minutes. To provide participants the skill of peer response, the researcher introduced peer review procedure and present a step by step training procedures in the second week after Argumentative text material is completed. Then, the rest 2 weeks was for finishing the

argumentative writing project. In addition, there was feedback session from the researcher in the middle of project, - which was after Argumentative text 1. The project used PBworks and Google Hangout chat room as the main tool for data collection. Actual data collection was started in week three and four when the class begins their group discussion in order to select broad topic for their group essay. The complete project activities can be seen in Appendix A.

The data was gathered starting from the teaching and learning of Argumentative texts. The researcher which acted as teacher and observer used camera recording to observe the teaching process during the class sessions. The procedures of collecting data was elaborated as follow: the first one is starting collaborative writing project, distributing questionnaires to students, conducting interview to the student's representative, and the last analyzing the students' text of writing.

The transcripts data from chatting and comments session was gathered when the students the writing stages starting from prewriting, writing, revising and editing. Then students' perception on the use of ACMC and SCMC tool in their collaborative writing was from questionnaire which then was triangulated with interview. Finally, the students' two final products of argumentative writing were analyzed.

### **3.7 Data Analysis Procedures**

The procedures of analyzing the data involved organizing, accounting for and explaining the data. The descriptive techniques were used in the process for the following instruments:

### **3.7.1 Students' Writing of Argumentative Texts**

In this case, the students' writing from essay 1 and essay 2 were collected. The comparison of both essays was conducted in this study. Several developments in students' writing were also listed. In the scoring, the scoring system was used to give specific range and criteria in each aspect of writing so that it eased the researcher to score, - holistic and analytic scoring simplified by Knudson (1992) based on Toulmin's Model (1958). The holistic scoring with a five-point scale ranging from 0 (low) to 6 (high) was to assess students' first essay and second essay. The criteria for holistic scoring included three categories: the overall quality, the rhetorical features and the language control (Appendix H). Meanwhile, the analytic scores from the first essay and the second essay were compared for the writing quality of six components of argumentative essay: claim, data, warrants, proposition, opposition, and refutation. The analytic scoring with a six-point scale ranging from 0 (low) to 6 (high) was used to assess students' first essay and second essay (Appendix I).

### **3.7.2 Transcripts of synchronous chat and asynchronous wiki**

To find out the types of interaction occurring during the collaboration the framework proposed by Nguyen (2011), which is based on the three levels (theme) in collaboration suggested by Margenot and Nissen (2006).

The transcripts of both CMC were coded into episodes. An episode in SCMC was taken as the unit of analysis which could be as short as a single turn, or as long as several turns, provided that these turns focused on a

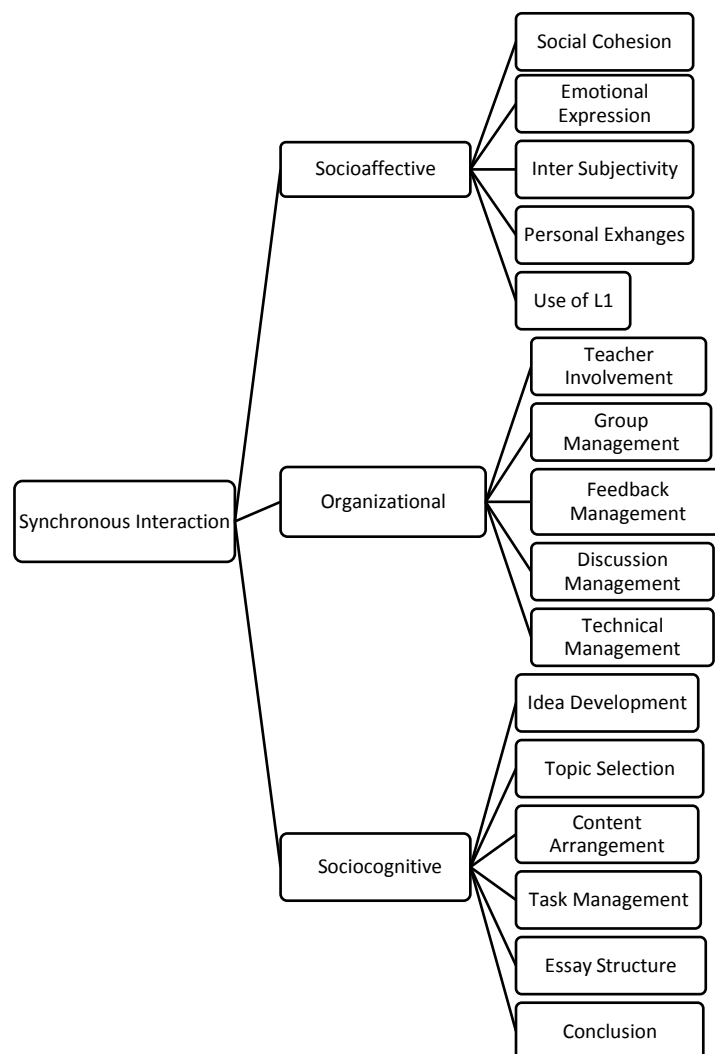
certain topic. Meanwhile, an episode in ACMC was coded based on sentential meaning units. An entry could consist of several sentential comment units. A turn or entry was identified as a line of conversation sent by a member by pressing the return key or by clicking the send button on the Google Hangout or Pbworks.

The episodes are alternatively categorized and allocated into three large themes, namely socioaffective, organizational, and sociocognitive according to their purposes in the discussion. The three themes were then subcategorized into smaller topics. Emergent topics in each theme were used to organized analysis of the focus and purpose of each episode. All the coding process were conducted using NVivo 10, a qualitative analysis computer program (Appendix O).

#### **3.7.1.1 Transcripts of synchronous chat from Google Hangout**

The qualitative level of data analysis involved intensive content and discourse analyses of all the transcripts in order to measure the extent of interaction. Principles of computer-mediated discourse analysis (CDMA) were also applied. CDMA, according to Herring (2004), is any analysis of online behavior that is grounded in empirical and textual observation about language and language use. In other words, this stage of interactional analysis involved the coding and counting method of content analysis, followed by the examination of various features of interaction, such as ‘turn-taking, topic development, and other means of negotiation interactive exchanges’ (Herring, 2004, p.340).

Following the discussion of the interactional analysis procedure, the transcripts were coded into episodes. These episodes which might vary in length from a single turn to a number of turns (Storch, 2005) were classified according to their primary focus or purpose in the conversation. In other words, each episode was coded for what the students seem to focus on. This level of analysis of episodes contributed to understand how the discussion will be related to the task. The details of coding can be seen in Figure 3.1 below and Appendix D.



**Figure 3.1 Coding Matrix for the Synchronous Interaction**

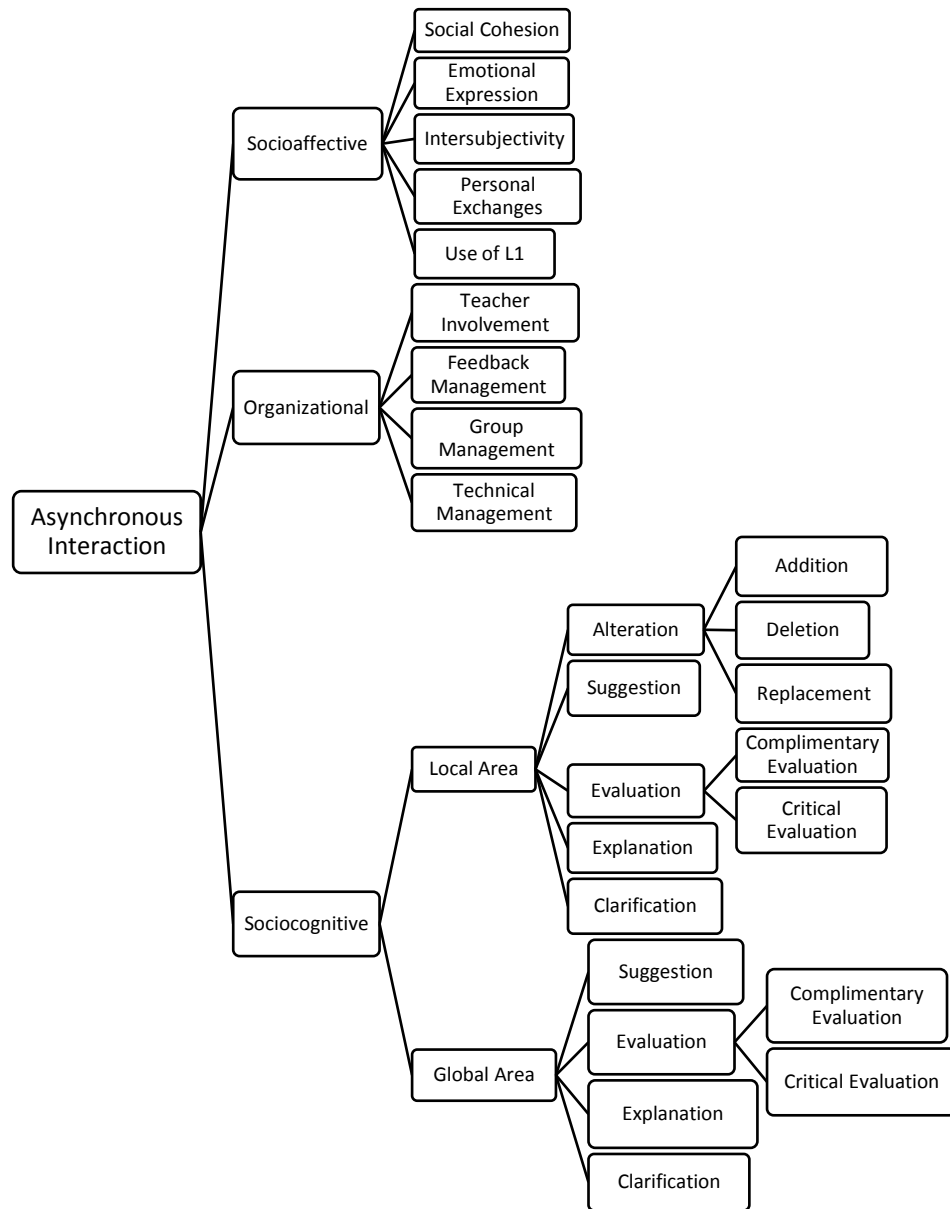


### **3.7.1.2 Transcripts of Asynchronous Comment from PBworks**

The peer review or feedback data analysis aims to answer the first research question. Peer response was considered as one of the final steps in the collaborative learning process as it helps evaluate and edit the drafts, leading to the synthesis of information in the final products. All comments made by the students within their own group were collected and entered into NVivo 10 to make them ready for coding.

Unlike the synchronous discussions, where an episode is taken as the unit of analysis, the asynchronous peer review coding was based on sentential meaning units. An entry could consist of several sentential comment units. Comments were first classified in accordance with their general focus into the three broad themes, - socioaffective, organizational, and sociocognitive, which were recorded into emergent subcategories according to the focus and purpose of each comment

More attention was paid to the sociocognitive theme. In this Comments in this theme was further coded into global versus local areas, which was then classified into various types of comments, such as clarification, explanation, suggestion, request, evaluation, addition, deletion and alteration (Liu & Sadler, 2003). Evaluation comments were also coded as complimentary or critical evaluations (Liou & Peng, 2009). This classification of type comments helped to decide the revision orientation nature versus the non-revision-oriented nature of comments. The details can be seen in Figure 3.2 below and Appendix E.



**Figure 3.2 Coding Matrix for the Asynchronous Interaction**

### 3.7.3 Questionnaire and Interview

The overall analysis of questionnaire and interview followed two steps: coding the obtained data and interpreting the findings. In the first step, the researcher began to scan the recorded data of observations, interviews, and questionnaires then developed them into categories phenomena. Meanwhile, in the second step, interpretation involves making sense of the data.

Creswell (2007) stated that “interpretation in qualitative research means that the researcher steps back and forms some larger meanings about the phenomenon based on personal views, comparison with previous studies, or both.” In this study, the interpretation involved a review of the major findings and how research questions were answered, personal reflections of the researcher about the meaning of the data, and personal views compared or contrasted with the literature.

The findings from the questionnaires were presented in tabular form and they were divided into seven constructions of UTAUT 2; performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, habit and behavioral intention. Before that, the questionnaires were examined for its validity and reliability. Then, they were analyzed descriptively. The data collected from the questionnaire provided information about the respondents’ perception and reflection on the use of CMC in collaborative writing. The information that was gathered from the questionnaires was used to conduct the semi structured interview with the selected participants. The interviews were written down almost verbatim and the respondents were asked to repeat where necessary to make it easier to note down what they said as well as to clarify their answers.