

CHAPTER THREE - METHODOLOGY

This study involved a collaborative effort among three schools in different countries, namely, Lycee Saint Charles from Saint Brieue, France, William R. Satz School from Holmdel, New Jersey, United States of America and MARA Junior Science College (MRSM) in Jasin, Malacca, Malaysia.

The students from Lycee Saint Charles were fifteen to sixteen years old, in other words, in their junior high. They were equipped with twenty computers and video-conferencing facilities. The facilitator had never had any experience in international collaborative projects. Thus far, the Internet was used merely as an information resource.

The Malaysian students were comparable in age. All of them were sixteen years old. They were equipped only with two computers and one Internet line. The teacher advisor had no experience in networked classroom activities. The Internet had never been used in the classroom before.

The American students were much younger, ranging from twelve to thirteen years old, also considered as junior high. Forty students were involved. They had a scanner, digital camera and video conferencing facilities. Internet use was for website development and research.

For a duration of four months, the Malaysian students (the sample), met on the average three times per week. Each session lasted one hour. Collaborative work among these three schools required the students to maintain open discussion forums to decide on themes for their project, as well as plan, design and create Web pages using HTML (Hypertext Mark-up Language), publish their competing Web sites using FTP (File Transfer

Protocol) and collaborate and interact electronically across cultures and physical boundaries.

The above-mentioned web-based discussion forum was divided into the self-introduction room, the theme decision room, the work room, the self-evaluation room, the co-ordinators' room and the training room (refer to Figure 8).

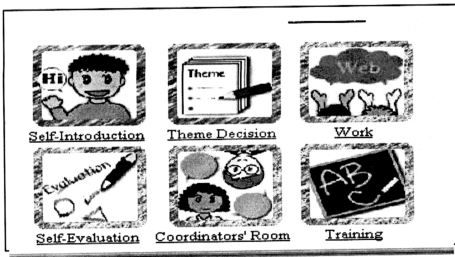


Figure 8. The AT & T Web-based discussion forum

The students utilised the self-introduction room to write a short introduction of themselves and to post their photographs so as to get better acquainted with their virtual classmates. They were free to write whatever they thought was suitable in as creative a manner as they would like to.

The theme decision room was where brainstorming, discussion and refinement of the theme took place. The participating students were given the option of combining their individual ideas together or adapting various ideas into a new topic. The final decision was up to their discretion.

Having decided on the theme, the students discussed how to divide their work, the contents of the web page, the datelines for handing in the subtopics, how to post articles, photographs and drawings as well as when and how to report their progress to other members of the group. The final product led to the three schools' web page on the AT&T Virtual Classroom server. After completing their web site, the participants reviewed and reflected on the results of their collaborative process.

Besides the web-based discussion forum, the students were also encouraged to use real time chat (Internet Relay Chat using the Palace software) and if necessary and agreed upon by all three schools, video conferencing. These facilities would be made available upon request through Universiti Telekom, Malacca.

The main purpose of the teacher in the MARA Junior Science College involved was not so much to win the contest but rather to expose the students to the potential of collaborative activities, the Internet and relevant technologies. As such, the teacher functioned as a facilitator. He did not impose his own suggestions on them but allowed them freedom to determine what they wanted to create, the content and the presentation. The students were also free to decide how they were going to solve whatever problems that might arise from collaborating with the other two schools. This problem-solving approach served to empower students to determine their own goals and direction by encouraging critical thinking skills in handling the problem posed to them.

Teachers from the respective schools were required to communicate with each other in order to iron out any problems or matters arising. Besides this,

the teachers from all three schools had to organise their group's work schedule and help them in the technical aspects of web page design.

Finally, in cases where technical support or guidance was needed, the participants referred to the program co-ordinators for South East Asia (the contest secretariat in Japan) in the co-ordinators' room. For training on how to use the forum, the students were given the opportunity to experiment in the training room. A general theme was agreed upon – water pollution. The group leader was from France and she had the final say to the contents of the web page.

SAMPLE

The sample was purposive as MRS M Jasin was chosen to enter the contest. Furthermore, the students had basic keyboarding and computer skills to handle the computer adequately.

The sample consisted of twenty five MARA Junior Science College students. The teacher advisor put up a notice calling for participants. Out of the number of students who expressed interest, twenty five were chosen at random. Twenty five was regarded as a number sufficient for group work in developing ideas for web pages and yet manageable enough to handle. Thirteen of them were boys and the other twelve girls. They were in Form Four.

To ensure that the students had adequate proficiency to communicate reasonably well, it was determined that all sample students should have a score of A2 or C3 in their Lower Secondary Assessment (PMR) English.

According to the guidelines given by the Ministry of Education during the PMR English seminar (1997), this indicated that the students were able to write with minor grammatical errors while showing a variation of simple and complex sentences, were able to use a wide variety of expressions and vocabulary, were able to develop ideas in an interesting manner and the ideas forwarded were relevant to the topic concerned.

In order to ensure mixed ability groups, the students were asked to write on their feelings in joining the contest within forty minutes during one of their English class period. This essay was then graded for proficiency according to the above criteria.

They were later assigned to groups of five according to Slavin's (1983) co-operative learning method of grouping. The students' names and English proficiency scores were first listed side by side. For the high proficiency range, students' scores were arranged from the highest to the lowest. For the average proficiency range, the scores were inverted in order, with the lowest on top and the highest at the bottom of the range. In a similar manner, for the lower proficiency category, the students' scores were again inverted, from the highest to the lowest. After this was done, group alphabets were assigned in the order of A to E for all three categories.

This grouping established the subgroups or the nucleus. They brainstormed and developed their ideas within their respective subgroups before presenting their ideas to other subgroups. A consensus was then reached and this was presented to the other two groups in America and France. As such, this grouping did not indicate their grouping at the computer.

The students could use the computers in the MRSM or in Universiti Telekom. They were given a choice to introduce themselves to their collaborative counterparts one by one or in groups. Similarly, the students discussed among themselves first and then decided whether to communicate individually or in groups during discussions in the theme and work rooms. Since the purpose of this study was on the collaborative process among the three schools and not the co-operative process within the subgroups, the instruments chosen reflected on evaluation of the collaborative and not the co-operative process.

INSTRUMENTATION

Preliminary study

A preliminary study questionnaire was administered to establish whether the students were positive towards the use of the Internet and whether they were willing to collaborate (Please refer to Appendix I). The sections dealt with usage of the Internet, collaborative and individual work and their opinion of the importance of audience and revising. The concerns of each section are listed below:

Section 1 : Familiarity with the Internet

Section 2 : Frequency in using the Internet and means of learning about the Internet

Section 3 : Current purpose for using the Internet

Section 4 : Students' perception of the advantages and disadvantages of using the Internet

Section 5 : Students' perception of the use of the Internet to improve their writing skills

Section 6 : Students' perception of collaborative and individual learning and

Section 7 : Students' perception of the importance of audience and revising

Qualitative data collection and analysis

Learning journal and electronic communication transcript (e-mail)

Qualitative data was used to determine whether the networked classroom was capable of creating a supportive learning environment by providing an actual audience and by stimulating a positive learning environment.

Evidence of the existence of this supportive environment was whether the students were more aware of the audience in terms of whether they (the students) elaborated their ideas such as by giving examples, clarified matters which might be unfamiliar to the audience due to cultural differences and

geographical locations, requested for confirmation when doubtful and whether they revised their writing based on the feedback received.

Another evidence of a supportive environment was whether the collaboration in the networked classroom stimulated a positive learning environment. This took into consideration whether there was increased sharing and enrichment of ideas, allayment of fears regarding the use of new technology, facilitation in delegation of tasks and stimulation of students' interest to learn more by carrying out their own research.

Not denying that there were limitations to collaborative efforts and the use of technology, qualitative data also considered the obstacles that might hinder successful use of collaboration in networked classrooms. The first consideration was whether there were problems in collaborative partnerships among the three schools. The second consideration was whether there were problems within subgroups and the third consideration was whether there were problems in using the e-mail, the Internet Relay Chat software, the web page design software as well as in accessing the server.

Researcher and the teacher advisor's observations

Throughout the contest, the researcher's and the school co-ordinator's observations, experiences, and impressions of the whole collaborative process from its inception to its conclusion were noted down in a journal. These encompassed technical considerations and pedagogical concerns related to the objectives of this study. The purpose of these observations was to determine

whether collaboration among classrooms facilitated or hindered the writing process.

Quantitative data collection and analysis

Pre-post test questionnaire

A pre-and post-test questionnaire derived from Warschauer's 1996 study on motivational aspects in using computers for writing and communication was administered. Content validity was determined by Warschauer's factor analysis and principal components analysis study on the thirty variables. Factor analysis established how the questions/variables were grouped together into categories. In order to extract the factors, a principal components analysis was done. The number of factors to be extracted was based on a root curve method followed by an oblique rotation to determine the nature of each factor.

The aim of this questionnaire was to determine the students' opinion of motivational aspects in using computers for writing and communication before and after the contest (Please refer to Appendix II for details of the questionnaire).

A mean motivation score for each student was established by calculating the mean responses to all thirty questions. The mean motivation score for all students was further determined in order to identify whether the students were positively or negatively inclined towards the use of computers for communication and writing by comparing their mean motivation scores with the group's mean motivation score.

Next, in order to identify whether the responses were positive or negative by chance, the mean Likert score for each question was calculated and contrasted with a hypothetical mean of three (3) using two-tailed t-tests. The significance level was at $p < 001$.

To further confirm the above findings on mean motivation scores, a correlational study between the students' mean motivation score and the above independent variables was carried out.

It must be acknowledged that the students' prior experiences with computers, the instructor' commitment and attitude towards the contest and the students' level of familiarity with the technology involved had an effect on the students' perception of Internet collaborative activities and its effectiveness in facilitating the writing process. As such, this study recognises that there was a possibility of multiple factors affecting the results of this study. Future research should therefore involve a larger sample size.