



## **The effect of international email exchange on Thai high school student English writing proficiency**

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### **ABSTRACT**

At a time when the Thai Ministry of Education, together with the Thai Ministry of IT, is conducting feasibility studies regarding the introduction of email and web IT systems for all schools in Thailand, the effect of using IT tools in teaching is of great importance to students, teachers, and education institutes.

Generation Z students, or those born in the IT age of the 1990's, have been brought up with Internet sites, such as Facebook, email, and multimedia IT communication. This paper investigates the effects of using email exchange for the improvement of Thai high school students' writing skill.

This research demonstrates that asynchronous computer-mediated communication (AC communication) provides essential practice for the mastery of second language skills. Sending emails allows a student to establish contact with people from outside the student's own country, achieve a greater appreciation of another culture, attain a deeper awareness of the international community, and permits the possibility for each student to improve his fluency in English reading and writing. However, the research also notes that international email exchange benefits high achieving students more than those with limited language abilities.

This researcher also uncovered interesting analytical tools for measuring grammar and vocabulary level of student written content, in particular the Flesch-Kincaid Grade Level Readability Formula which, while it does not take into account the logic and style used by the student, indicates the grade level use of grammar and vocabulary in the written work of students.

**Keywords:** email; exchange; education; EFL; Thai; learning; writing; proficiency; Flesch-Kincaid

## 1 Introduction

Modern day students are required to not only communicate in more than one language but also build critical thinking skills in order to ask the right question, in the right way and to the right people in order to obtain valuable information. Therefore, educators today face the challenge of teaching students how to collaborate effectively online, evaluate information from every source, and publish their own information using technology resources. International email exchange can provide language learners with the needed opportunities for “pushed output” in order to develop specific language skills. (Swain 1985, p. 249).

The importance of making IT available in the classroom is heightened by the fact that teachers today are educating “digital native” children, otherwise known as ‘Generation Z’, who have grown up surrounded by technology (Bittman, Rutherford, Brown, & Unsworth, 2011). Such students are used to asynchronous communication (AC), in the form of texting and emails, as well as asynchronous discussions (AD), in the form of texting, blogging, and participation in social networks like Facebook, and Xanga. It is essential the issue of the use of IT in student development is addressed.

## 2 Literature Review

This review begins by defining the relationship between Information Technology (IT) and language acquisition, and reviews the connection between the development of socio-cultural communication skill through telecollaboration; that is, when international email communication channels are made available to students.

O’Dowd and Ritter (2006) define telecollaboration as “the use of online communication tools to bring together language learners in different countries for the development of collaborative project work and intercultural exchange” (O’Dowd & Ritter, 2006, p. 623). Many researchers suggest asynchronous computer mediated-communication increases EFL student learner motivation, participation, and interaction (Greenfield, 2003); increases second language proficiency (Floréz-Estrada, 1995); decreases learner anxiety (Beauvois & Eledge, 1996); improves the linguistic aspects of second language communication (Holliday, 1996); and brings about a positive change in cultural perspectives (Kinging, Gourvés-Hayward, & Simpson, 1999).

In a traditional language classroom, a handful of students usually volunteer to try out dialogues and create new sentences. These students benefit by practicing new vocabulary and getting immediate feedback from the teacher. However, other students remain afraid to express themselves because they may not feel comfortable with the language or the situation. Authentic email exchange allows time for everyone to construct a response and thus develop their writing skills. Fedderholdt (2001) argues that email gives students the opportunity to communicate in the target language with an authentic audience and Warschauer (1996) suggests emails offer students a low-stress environment, with few face-threatening situations due to the asynchronous nature of the medium. The importance of the real audience is to “Reiterate the role the L2 plays in the world, highlighting its potential usefulness both for themselves and their community” and “encourage the learners to apply their L2 proficiency in real-life situations” (Dörnyei, 2001, pp. 56-57).

AC communication techniques extend the time and place for language learning, expands topics of discussion beyond classroom-based topics, encourage student-centered language learning, increases learner autonomy and independent learning (Warschauer, Turbee, & Roberts, 1996), encourages equal opportunity participation, increases students' motivation (Gray & Stockwell, 1998; Ishida, 1995), promote the development of syntactic complexity and grammatical accuracy (Wu et al., 2008; Flórez- Estrada, 1995; Stockwell & Harrington, 2003), and connect learners and their email pen-pals quickly and inexpensively. It is possible that emails offer a cost-effective method for students to increase fluency in the target language when they practice their communicative skills through email, online forums, text-messaging, and instant messages.

González-Bueno (1998) found that the amount of language produced via email was greater, the topics more varied, the language functions more complex, the language accuracy higher, and the language use more personal and more expressive than in traditional writing. According to González-Bueno, the superiority of the written language produced in the email exchange over the traditional writing is attributed to the fact that learners typing their messages were able to take more time to consult references and edit their messages before sending them.

For the teacher, an obvious benefit of using AD for cooperative assignments is that it leaves a record of student participation which can be assessed and archived to improve instructional practice. This record can be analyzed by the teacher in order to evaluate student development and plan any action required to overcome language deficiencies. The teacher can also guide those students who need help expanding the boundaries in their style of communication.

However, Tella and Mononen-Aaltonen (1998) warn that email projects can discourage learners from writing more elaborate, longer messages and instead encourage them to write simple, short messages. In unguided, pen-pal type activities, learners may encounter substantial problems; their email partner might be very slow in sending a reply to their emails or, even worse, might completely lose interest and stop writing altogether (Biesenbach-Lucas, Meloni, & Weasenforth, 2000) if they are not goal oriented.

In their review of telecollaboration exchanges, O'Dowd and Ritter identified ten reasons why such projects frequently fail, such as the organization of the course study, and the relationship between the participating instructors (O'Dowd & Ritter, 2006, p. 630). Trying to align O'Dowd and Ritter's 10 variables (see figure 1) in order to make productive language development through telecollaboration exchanges may well be complicated to arrange and difficult to ensure.

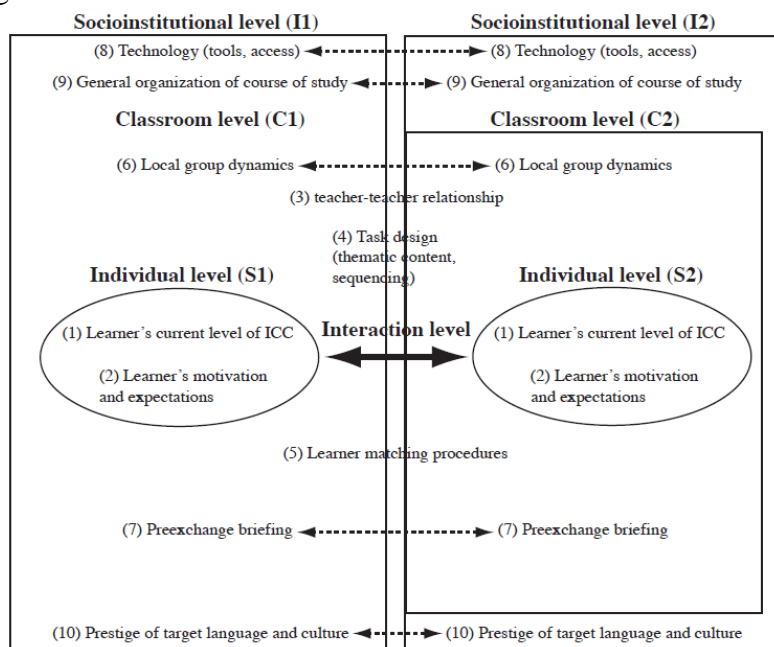


Figure 1: Inventory of Reasons for Failed Communication in Telecollaborative Projects

### 3 Method

This study was methodologically situated within a quantitative research design. All material related to the study, such as hard copies of the e-mail correspondence, each student's evaluation questionnaire, written feedback by the students, discussions with them regarding their cultural encounter experiences, was collected.

This project was intended to be conducted for twelve weeks in order that the Thai and Korean students might have more practice with their English writing. The Thai participants were expected to exchange at least three communicative emails with their Korean counterparts.

All emails were analyzed for sentence structure and grammatical correctness using 6 analytical formulae so that an indication of the level of English used in emails could be ascertained. The results were then compared to classroom assignment paragraphs written by students in order to learn whether email correspondence motivated students to improve their writing skills. A questionnaire, along with discussions with students, indicated the usefulness of international email exchange for the students in relation to cultural awareness.

#### 3.1 The participants ( $n = 59$ )

The study was conducted over three months (June-August 2012) with M3 (Grade 9) students of the English Programme at the Phitsanulok Pittayakom school in Thailand. The researcher met with the students to acquaint them with the aim of the study, to encourage them to respond truthfully to all the items in the questionnaire, and to collect the data. The researcher assured the students of the confidentiality and anonymity of their responses.

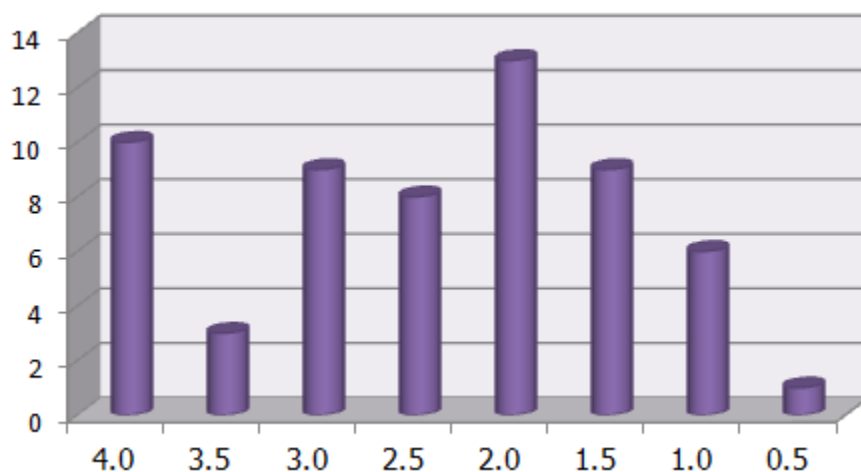


Figure 2: Student GPA Levels

The range of the student's level of English communicability varied considerably. 29 students had GPA scores in English of 2.5 and over, whereas 30 students had scores lower than 2.4.

The students were divided into three groups: the first group ( $n=30$ ) was paired with the Yeongju Middle School penpal club students, the second group ( $n=10$ ) corresponded with the Namju Email club in Seogwipo City on Jeju island, and the third group ( $n=19$ ) communicated with the Korean Singi Middle School VANK club students. All students wrote their emails outside of their regular class time.

#### 3.2 The technology

The system used was an email service by ePals. ePals.com is an established email exchange system for schools, used by classrooms in more than 200 countries, and is a useful site for setting up cultural exchange projects that cross international borders. Teachers can monitor for each student exchange, ensuring security and observation of language development (Zolt, 2012).

### 3.3 How the project was conducted

Requests for help with the international email exchange project were sent to teachers in the ePals system at the commencement of the first semester of the Thai academic year (June 2012). Despite the period being the summer holiday for the majority of classes outside Thailand, teachers from classes in South Korea responded eagerly and were willing to establish email contact between their students and students in Phitsanulok Pittayakom school. Teachers matched up students in their class to a student list and then gave students an ePals email account, a password, and the ePals email account of the corresponding international student. Each student wrote a first introductory email, followed by emails requesting five specific details that identified the exchange student's culture. Information about Thai and Korean culture, as well as photos, was exchanged between students.

### 3.4 Data collection

The study was divided into two stages. The first stage, when students exchanged emails, lasted two months. The second stage, over a 10 day period, involved students completing a questionnaire and having discussions with the researcher regarding the email exchange experience. The questionnaire provided the participants' background information, including availability of Internet at home, each student's familiarity with international exchange, along with lessons learned from the project.

### 3.5 Data analysis

Descriptive statistics from the data collected in the questionnaire survey helped assess students' perceptions of using email exchange. An analysis of student email content was conducted using the Gunning Fog Index, the SMOG Index, the Coleman-Liau Index, the Automated Readability Index, the Flesch Reading Ease Formula, and the Flesch-Kincaid Grade Level Readability Formula. Below is a description of each of these measuring instruments.

**The Gunning Fog Index** is a weighted average of the number of words per sentence, and the number of long words per word. An interpretation is that the text can be understood by someone who left full-time education at a later age than the index. The Formula has some flaws, notably, that short sentences written in Plain English achieve a better score than long sentences written in complicated language and it discounts that not all multi-syllabic words are difficult.

The mathematical formula is:  $\text{Grade Level} = 0.4 (\text{ASL} + \text{PHW})$  where;

ASL = Average Sentence Length (i.e., number of words divided by the number of sentences)

PHW = Percentage of Hard Words

The ideal score for readability with the Fog index is 7 or 8. Anything above 12 is too hard for most people to read. For instance, The Bible, Shakespeare and Mark Twain have indexes of 6 while leading magazines, like Time, Newsweek, and the Wall Street Journal average around 11.

**The SMOG Index** uses a 100% correct-score criterion, whereas most formulas test for around 50%-75% comprehension. The main premises of SMOG Formula is that a sentence is defined as a string of words punctuated with a period, an exclamation mark, or a question mark; long sentences with a semi-colon are considered as two sentences; words with hyphen are considered as a single word; proper nouns, if polysyllabic, should be counted.

Numbers that are written should be counted; if written in numeric form, they should be pronounced to determine if they are polysyllabic; and abbreviations should be read as though unabbreviated to determine if they are polysyllabic. However, abbreviations should be avoided unless commonly known.

The SMOG Conversion Table is as follows:

Total Polysyllabic Word Count	Approximate Grade Level (+1.5 Grades)	Class
1-6	5	P5
7-12	6	P6
13-20	7	M1
21-30	8	M2
31-42	9	M3
43-56	10	M4
57-72	11	M5

Total Polysyllabic Word Count	Approximate Grade Level (+1.5 Grades)	Class
73-90	12	M6
91-110	13	Year 1
111-132	14	Year 2
133-156	15	Year 3
157-182	16	Year 4
183-210	17	Masters
211-240	18	PhD

**The Coleman-Liau Index** relies on characters instead of syllables per word. Computerized assessments understand characters more easily and accurately than counting syllables and sentence length to automatically (by computer) calculate samples of hard-copy text, instead of manually hard-coding the text. Unlike syllable-based readability indicators use the following formula:

L is the average number of letters per 100 words. S is the average number of sentences per 100 words; abstract contains 4 sentences, 100 words, and 448 letters or digits; L is 448 and S is 4.

Formula:  $CLI = 0.0588 \times 448(L) - 0.296 \times 4.0(S) - 15.8 = 10.6$  grade level, or roughly appropriate for a 10-11th grade high school student.

**Automated Readability Index (ARI)** is derived from ratios representing word difficulty (number of letters per word) and sentence difficulty (number of words per sentence).

If the ARI outputs the number 10, this equates to a high school student, aged 15-16 years old; a number 3 means students in 3rd grade (ages 8-9 yrs. old) should be able to comprehend the text.

Most readability indices consist of two factors. One factor relates to sentence structure and is generally a measure of the average number of words per sentence. The other factor generally relates to word structure and is usually based on either the proportion of easy words determined with reference to a word list or the average number of syllables per word. The final output of 11 means high school students of Grade 11 (M5) should be able to comprehend this text. Ages below 16 years old (M4) will find this passage difficult to read and understand.

**The Flesch Reading Ease Formula** is considered as one of the oldest and most accurate readability formulas. The best text should contain shorter sentences and words. The score between 60 and 70 is largely considered acceptable.

The output, RE, is a number ranging from 0 to 100. The higher the number, the easier the text is to read. Scores between 90.0 and 100.0 are considered easily understandable by an average 5th grader, scores between 60.0 and 70.0 by 8th and 9th graders, scores between 0.0 and 30.0 are considered easily understood by college graduates.

The specific mathematical formula is:

$$RE = 206.835 - (1.015 \times ASL) - (84.6 \times ASW)$$

RE = Readability Ease

ASL = Average Sentence Length (i.e., the number of words divided by the number of sentences)

ASW = Average number of syllables per word (i.e., the number of syllables divided by the number of words)

The ease of readability in a document is indicated in the following ranges:

90-100	Very Easy	60-69	Standard	0-29	Very Confusing
80-89	Easy	50-59	Fairly Difficult		
70-79	Fairly Easy	30-49	Difficult		

**The Flesch-Kincaid Grade Level Readability Formula** is a new calculation to improve the original Flesch Reading Ease Formula which cites scores equivalent to the school grade necessary for the reader to understand the document. For instance, a score of 9.3 means that a ninth grader would be able to read the document. The US Government Department of Defense uses Flesch-Kincaid Grade Level formula as a standard test.

The specific mathematical formula is:

$FKRA = (0.39 \times ASL) + (11.8 \times ASW) - 15.59$  where;

FKRA = Flesch-Kincaid Reading Age

ASL = Average Sentence Length (i.e., the number of words divided by the number of sentences)

ASW = Average number of Syllable per Word (i.e., the number of syllables divided by the number of words)

## 4 Findings

Analyzing the email content of 59 Thai students over a 2-month period was a valuable and insightful project.

### 4.1 Word-count evaluation

In an attempt to evaluate opinion by the use of key words, simple word-count evaluations, together with a Flesch Reading ease evaluation, were conducted on the data. The majority of students wrote in simplified or easy English (see Figure 3), and the language did not appear to become more fluent as time went on. In discussions, students explained that simplified English was used to ensure their Korean email partners would understand them clearly.

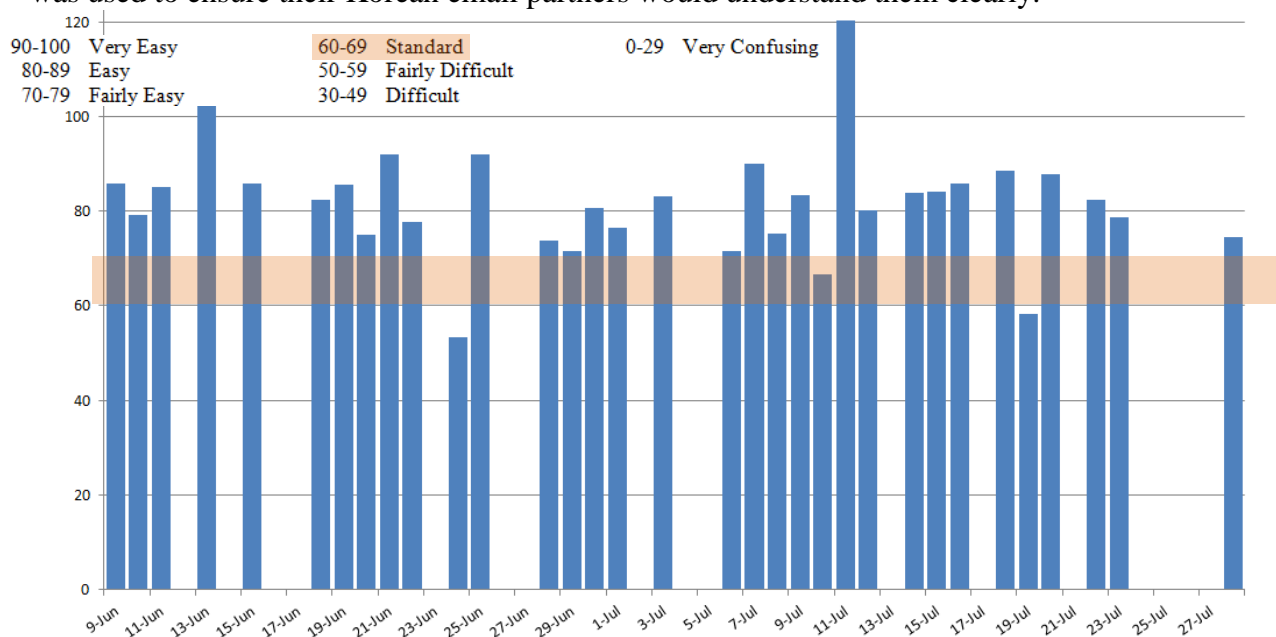


Figure 3: Flesch Reading Ease per email/day

The average length of words was only 4 characters long, which indicates that superficial discussions took precedence over exploring complex cultural questions (see Figure 4).

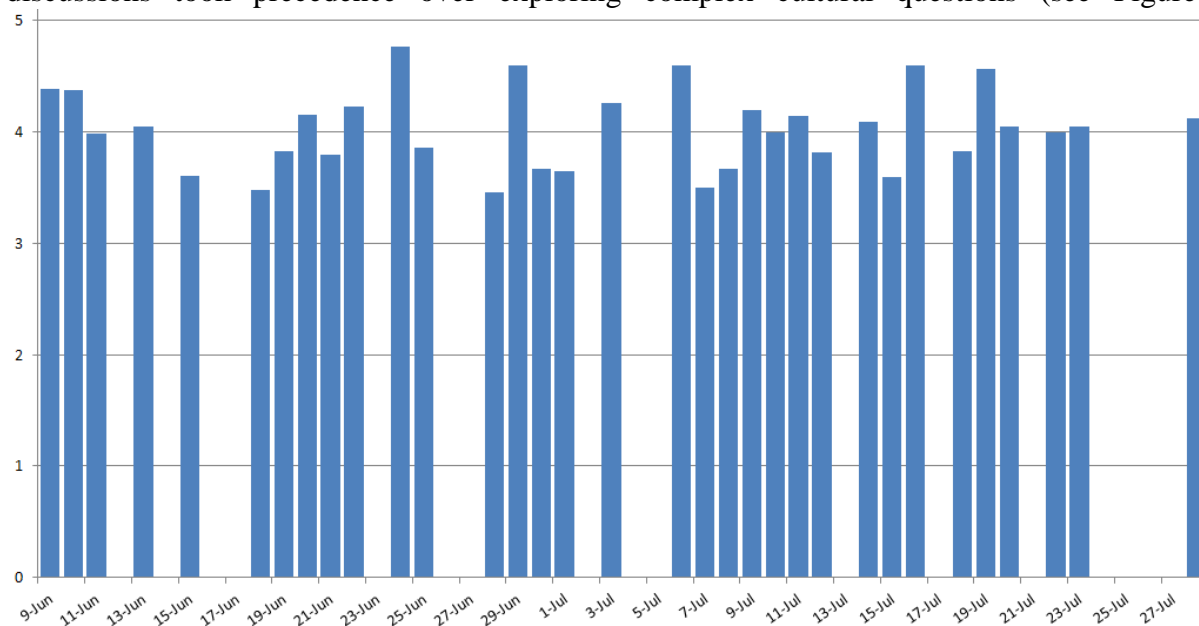


Figure 4: Average characters per word for Student email content from June 9 - July 27



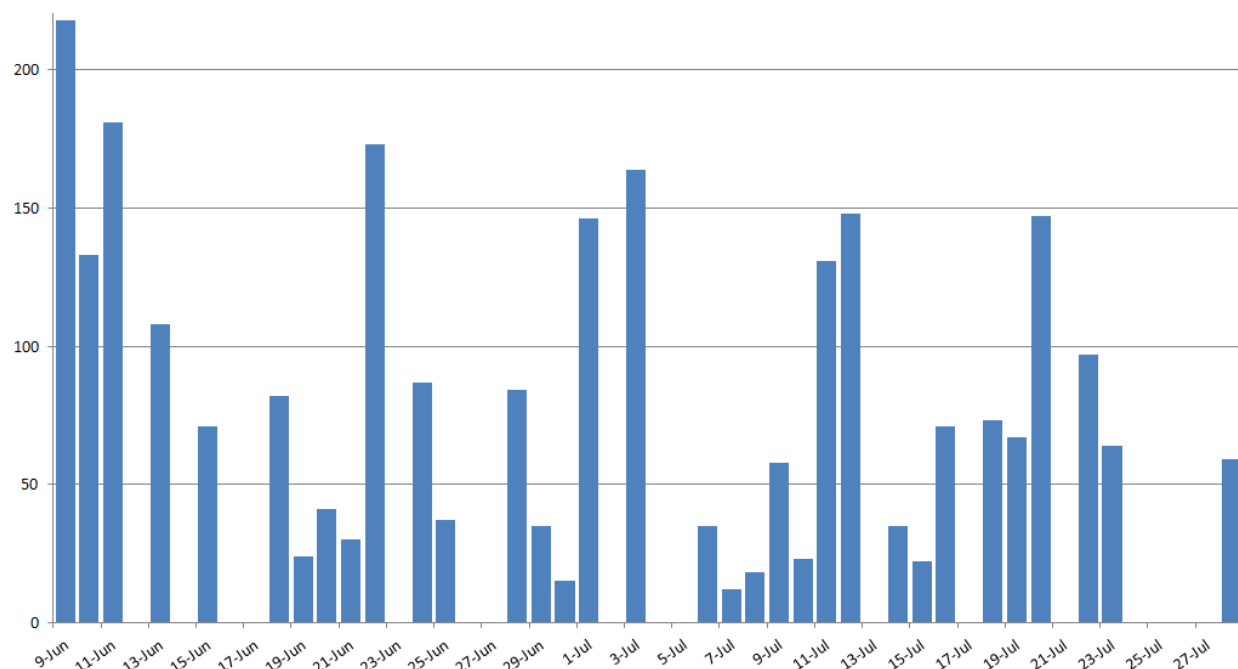


Figure 5: Average number of words per email/day

The average number of words per email was 78 words, which represents a standard paragraph length. Some emails resembled notations rather than paragraphs, but, generally, students introduced themselves and the topic for discussion in a clear manner of sufficient length (see Figure 5).

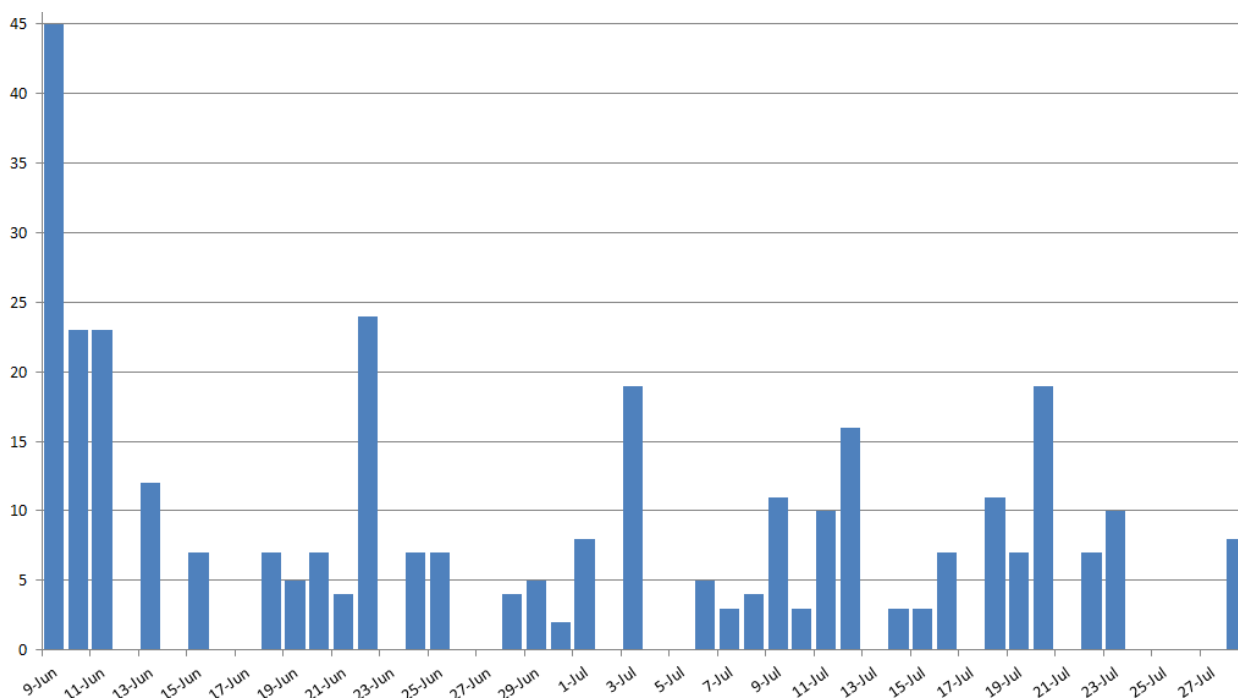


Figure 6: Average number of sentences per email/day

The average number of sentences per email was 8.5 sentences. Most of the sentences contained 9 or 10 words (see Figure 6), which indicates very few complex or compound sentences were attempted. Correspondence was kept to a basic level, ensuring clarity but lacking depth of concept.

## 4.2 Student evaluation of the email exchange project

The Thai high school participants in the international email exchange completed a questionnaire in order to provide their background information and opinions regarding their experience of the project. Questionnaires, observations and comments about the course were extracted and analyzed, and pertinent results are discussed below.

Almost all students, 58 out of 59 students (98%), had computers at home, and a significant number, 55 students (93%), also had Internet access from home. The students were asked to describe the way they used their computer. An interesting pattern began to emerge from analyzing responses to question 1, “Have you ever used a computer for: (คุณเคยใช้คอมพิวเตอร์สำหรับ?)”, in that while the students’ total choice options for computer usage was split evenly between web search, watching movies, emailing, and downloading music, individually the majority of students considered email as only the fourth most valuable activity, below web searching, watching movies, and downloading music.

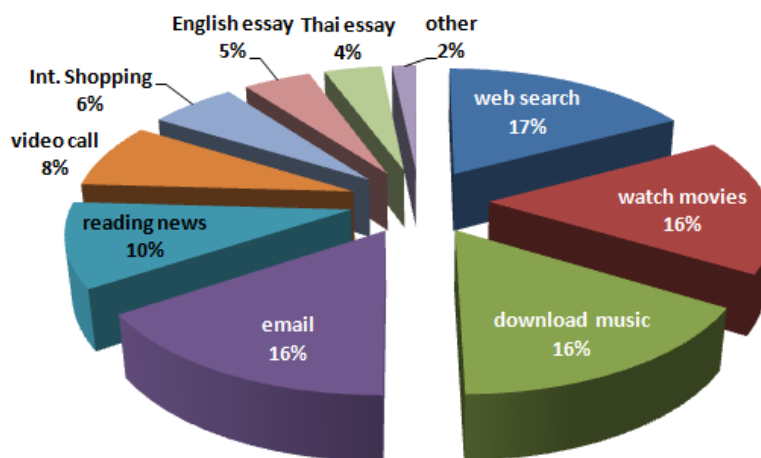


Figure 7: Students' combined choices for their computer use

web search	52	88%
watch movies	50	85%
download music	49	83%
email	48	81%
reading news	31	53%
video call	24	41%
Int. Shopping	18	31%
English essay	14	24%
Thai essay	12	20%
other	5	8%

Figure 8: Student's individual preference for his/her computer use (n=59 students)

The most dominant activities were those that did not need interaction with other people but could be conducted in private, such as conducting web searches, watching movies, and downloading music. While students checked their social media accounts every day, mostly on Facebook, the majority of writing was in response to comments and short emails. Few students used their computers to do school work or shop for products.

Unfamiliarity with using email to conduct new investigative correspondence may be the cause to the student's general reservation about the value of international email exchange. When asked question 7, “Did you find the epal project interesting? (ท่านคิดว่า โครงการ epal น่าสนใจหรือไม่)” the students revealed a surprising response.

Despite the fact that 81% of the students use their computers to email, the consensus as to the interest value of emailing a fellow student in another country was considerably lower than expected. Slightly more students were negative to the experience, but there was no clear explanation initially as to why this was the case. Further examination of the data would reveal that opinions from students with good ability in English (High Achievers) differed significantly from those with poorer English writing skills (Low Achievers).

a) Very interesting	6	10%
b) Interesting	20	34%
c) A little interesting	25	42%
d) Not interesting	8	14%

Figure 9: Student level of interest in the epal project (n=59 students)

### 4.3 High Achiever and Low Achiever perceptions

When students with a low GPA (Grade Point Average) in English fundamentals (0.5-2.0)

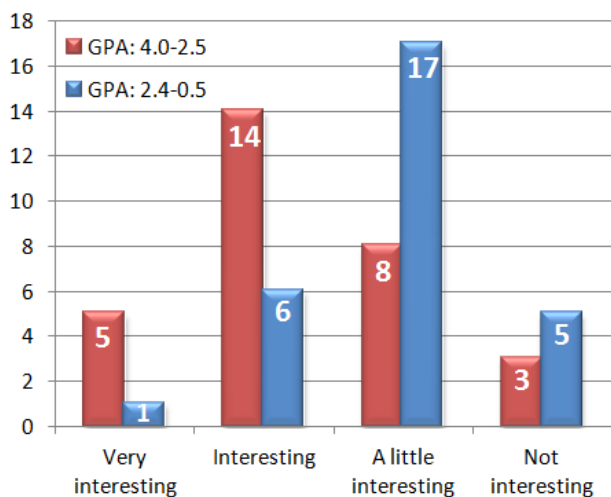


Figure 10: Student level of interest grouped in High and Low achievers (n=59 students)

are compared with students with high GPA scores (2.1-4.0), it is clear that negative responses to the email exchange project came largely from the Low Achievers. Students with high GPA levels in English clearly found the exercise slightly more interesting than the lower skilled L2 writing students. The autonomous nature of the email project, along with the self-discipline required to complete the email writing tasks individually without teacher supervision, was more challenging for the Low Achievers. This may have been why these students did not value the international exchange as it could well have been very uncomfortable for them to initiate and maintain contact with strangers from another country.

### 4.4 Familiarity with non-Thai contacts

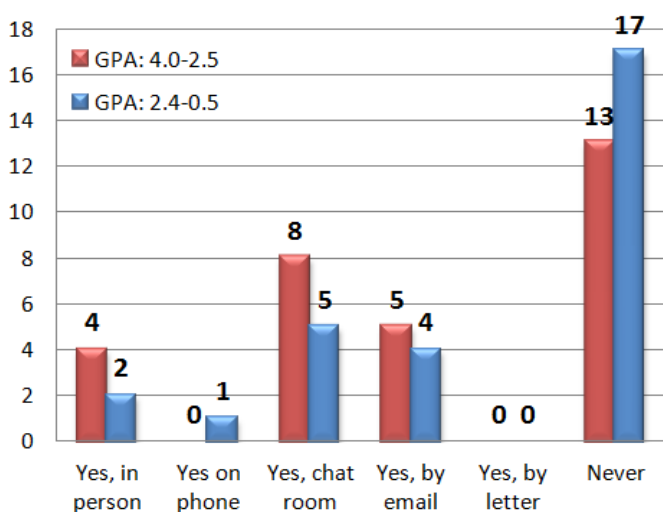


Figure 11: Student contacts in foreign countries grouped in High and Low achievers (n=59 students)

More students with high GPA English levels had had contact with people in other countries, as is indicated in answers to Question 5, “Before this class, had you ever communicated with someone from another country: (ก่อนที่จะคุณจะมาเรียนวิชานี้ คุณเคยติดต่อกับคนจากประเทศอื่นหรือไม่)”

51% (31 students) of Grade 9 (M3) students had never communicated with people who live outside Thailand. Of those that had, the majority, 22 students, communicated on computer in a chat room or by email. Only 6 students (10%) had personally met people from outside Thailand, and were familiar with developing personal contacts with foreigners.

### 4.5 Inspiration for developing English writing skills

English competency level, as well as familiarity with international contact, may well explain the divergent responses to Question 8, “Did it make you want to study English more? (มันทำให้คุณต้องการที่จะเรียนภาษาอังกฤษเพิ่มมากขึ้นหรือไม่)”

While 57% of High Achievers valued writing emails with students from another country, 55% of the Low Achievers considered it to be of little or no value at all. This may indicate limitations to an international email exchange program that encompasses all students who are learning English.

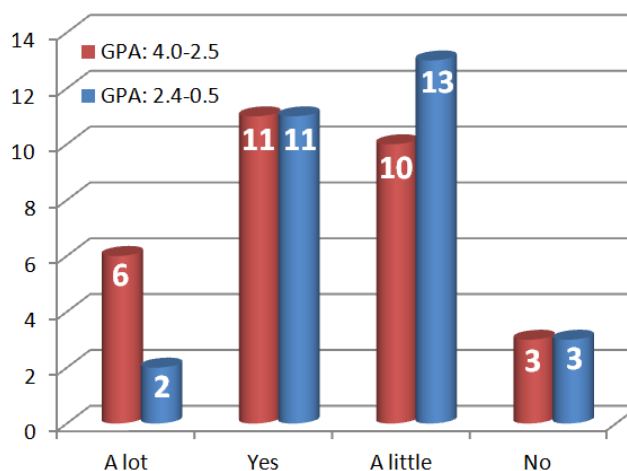


Figure 12: Student evaluation of email as a tool to improve English skills (n=59 students)

## 5 Discussions

Language teachers often focus on two types of motivation in L2 learning; *instrumental motivation*, which refers to the practical advantages that students understand regarding the learning of a language, and *integrative motivation*, or the personal interest in the people and culture of the new language group (Gardner & Lambert, 1972). There is, however, a growing interest in *intrinsic motivation*, or “reasons for L2 learning that are derived from one’s inherent pleasure and interest in the activity; the activity is undertaken because of the spontaneous satisfaction that is associated with it” (Noels, 2001, p. 45).

The popularity of social networks, such as Facebook, and Xanga, suggest that asynchronous communication (AC), in the form of texting and emails, as well as asynchronous discussions (AD), in the form of texting or blogging, simulate the interest and produce pleasure for many students on a daily basis. One would expect that using AC and AD technology in teaching forums would facilitate intrinsic motivation among L2 students.

However, most Thai students are not yet used to studies being conducted in the digital environment. Reviewing the number of emails sent per student in a high achieving class compared with a low achieving class, one can see clearly that the majority of those with low GPA levels in English language writing skills do not attempt to write emails as an academic task or participate in a school-initiated international email exchange project (see Figure 13).

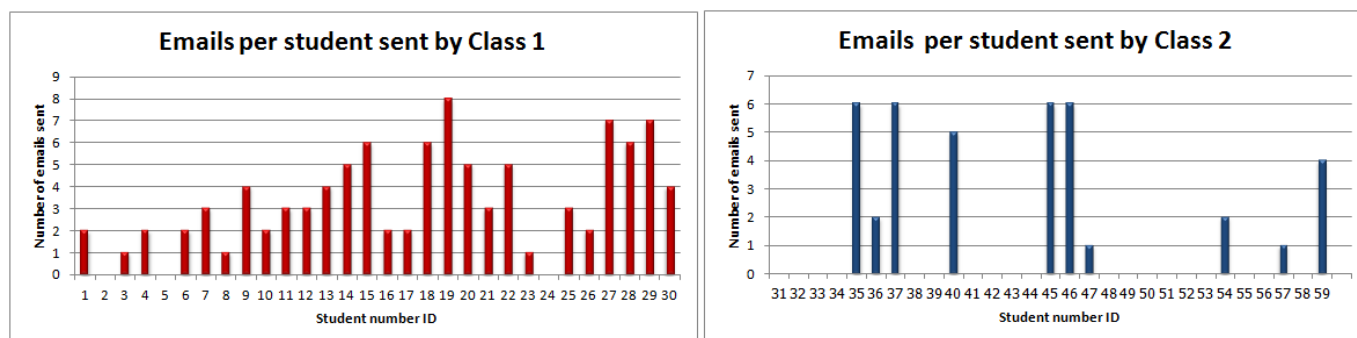


Figure 13: Emails sent by students from high achieving class and a low achieving class

Since many Thai EFL learners may not have the opportunity to go abroad because of various financial problems, theoretically, the cross-cultural e-mail exchange program is an affordable way for them to put their English learning into practice. However, a major hurdle for student’s participation seems to be that such projects appear daunting as each student takes responsibility for stepping out into the unfamiliar territory of making contact, along with the possible fear of revealing one’s own language inadequacies to students in another country.

The language teacher needs get heavily involved in an email exchange program, insert guiding questions into discussion, and following up on students more regularly than is possible in normal class time. This makes international email exchange programs extremely labor intensive for the language teachers, particularly when guiding low achieving students.

The analysis of student email content reveals that there was no noticeable improvement of writing skills, even among the High Achievers. The majority of students conducted communication only to a level necessary for basic communication to be possible. The teacher had to facilitate continued critical thinking about the topics, so that students went beyond discussions of how to complete the task and use higher level thinking skills to initiate investigative questions in their emails.

### 5.1 Depth of language used

This research uncovered interesting analytical tools for measuring the grammar and vocabulary level of student written content. While the Gunning Fog Index, the SMOG Index, the Coleman-Liau Index, the Automated Readability Index, the Flesch Reading Ease Formula were used, the Flesch-Kincaid Grade Level Readability Formula became the most useful formula as it seemed to estimate clear grade level for the readability of texts written by students in K12 schools. This formula is also considered credible by many other researchers and is widely used around the world, such as by the US government, in assessing the communicative skills in English of personnel.

When student email content was compared with student classroom assigned paragraph writing content, it became clear that paragraph, or essay, assignments encouraged students to write in more a complex manner than they did in emails. Generally, a student's e-mail message was short, describing details using only a few sentences. More effort appeared to be made in writing detailed paragraphs as students used slightly more complex content (see Figure 14 and Figure 15).

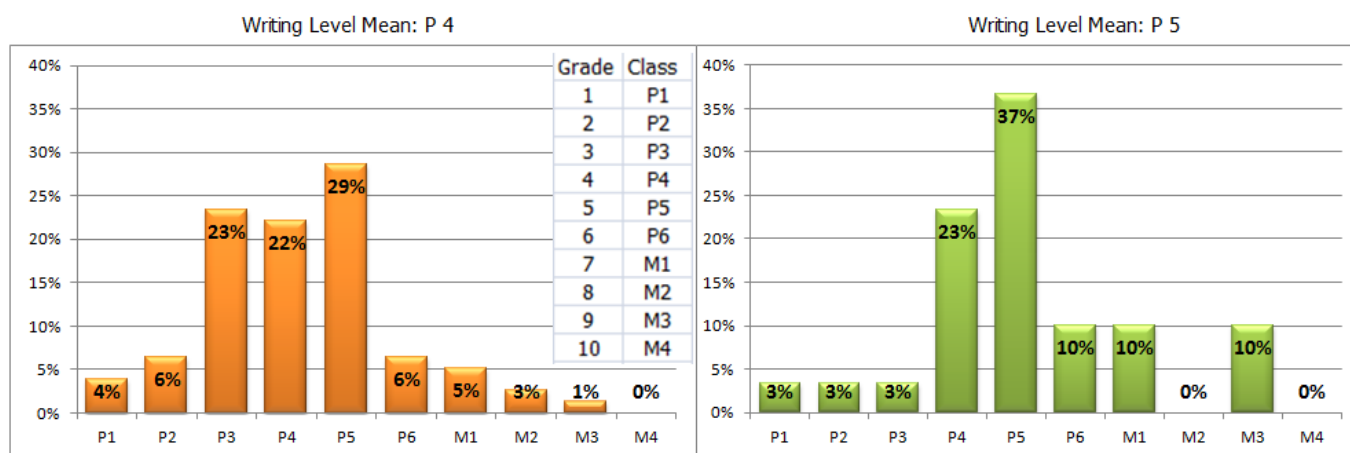


Figure 15: Flesch Kincaid Grade level for emails

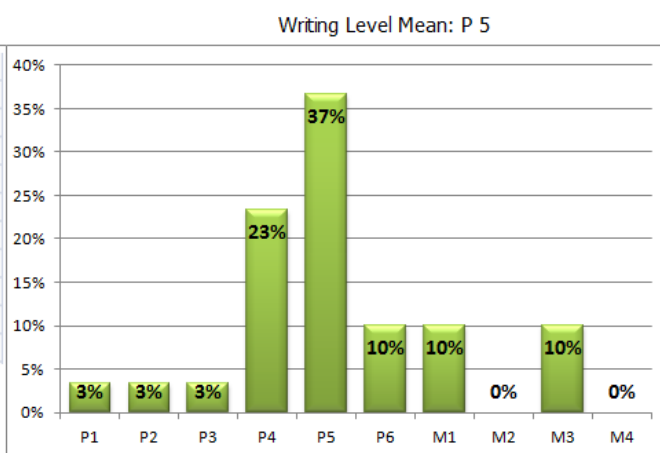


Figure 14: Flesch Kincaid Grade level for essays

Email content was one grade lower than essay content. However, the most surprising revelation from the study was that the average level of writing by M3 (Grade 9) students was at a readability level of only Prathom 5 (Grade 5). 56% of students email with level P4 (Grade 4) level English, or less, while only 35% of the same students use this level when writing essays. Only 44% of the students attempted P5 (Grade 5) or higher when writing emails compared to 65% when writing paragraphs or essays.

While the Flesch-Kincaid Grade Level Readability Formula does not take into account the logic and style used by the student, the results of the analysis suggest the use of grammar and vocabulary by the students in this M3 research group needs developing.

### 5.2 Motivation to continue the international exchange

When asked Question 9, “Will you continue emailing your epal after our class is over? (คุณจะยังคงส่งอีเมลล์ epal หลังจากที่เรียนจบหรือไม่)?” 57% of students were not certain or would not continue emailing their international email partner when the project was over. Motivational intensity appears to have been lacking.

a) Yes	2	3%
b) Maybe	23	39%
c) Don't know	19	32%
d) No	15	25%

Figure 16: Student interest for continuing email contact. (n=59 students)

Gardner (1985) defines *motivational intensity* as “the amount of effort the individual expends (or, in some instances, is willing to expend) in order to learn the L2” such as “the amount of effort spent on homework” as well as a “willingness to take on special assignments” (Gardner, 1985, p. 53).

The High Achiever group showed a greater motivational intensity at the end of the project as 57% of them expressed a willingness to continue emailing their partner, compared with 28% of the Low Achievers. Furthermore, a significant number (83.9%) of the high GPA students said that the exchange made them want to study English a lot more, or more, while only 35.7% of the low GPA students said it did.

GPA: 4.0-2.5			GPA: 2.4-0.5	
7%	2	Yes	0	0%
50%	15	Maybe	8	28%
30%	9	Don't know	10	34%
13%	4	No	11	38%
	30		29	

Figure 17: Students who will continue to email when class is over

Student motivation in the Low Achiever group was noticeably lower after five or six weeks as they were not sending or receiving regular correspondence from their partners. This

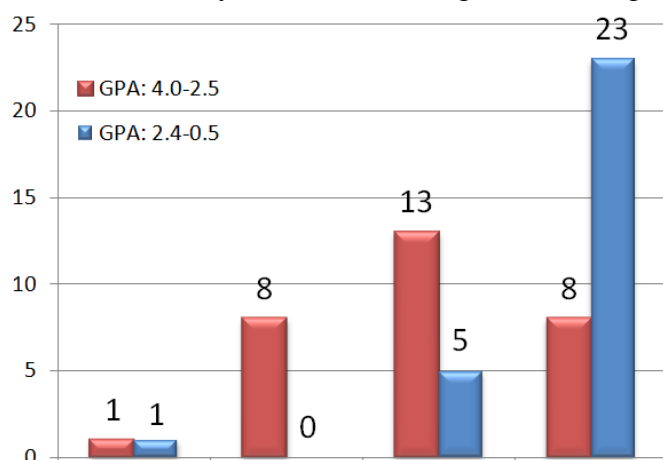


Figure 18: emails received per student grouped in High and Low achievers (n=59 students)

confirms findings by Chen who expressed that after a few weeks, some students “seemed to be a bit lazy, unconcerned, and less interested about their e-pals’ messages than others, and often skipped reading the mails or ignored answering the questions proposed by American students.” (Chen, p.167) This may well be a cultural issue regarding the sustainability of motivation among some groups of Asian students.

Student motivation may also have been affected by delays in responses from an email partner. 79% of the Low GPA group received one or less emails, while only 27% of High GPA students experienced this.

Some students did not check their email accounts while others were frustrated at the lack of response from their international email partner. It would appear that students with lower English skills found the task of emailing a foreigner too demanding or too challenging to become involved.

It is most likely that since no correspondence was initiated or shared, the lower skilled students found the experience less valuable.

GPA: 2.4-0.5			GPA: 4.0-2.5	
79%	23	0-1	8	27%
17%	5	2-3	13	43%
0%	0	4-5	8	27%
3%	1	>6	1	3%
	29		30	

Figure 19: Percentage representation of emails received per student grouped in High and Low achievers (n=59 students)



## 6 Conclusion

International e-mail exchange connects two different cultures into one sphere, providing L2 learners with authentic readers to practice ‘online talk’ in the target language, and fostering the exchange of social concepts in both the native and target cultures. By sending emails to establish contact with people from outside their own country, students can achieve a greater appreciation of other cultures, a deeper awareness of an international community, and the possibility to improve their fluency in English reading and writing.

Warschauer (1995) first proposed that the advantages of e-mail lie in that it providing the use of English “for an authentic purpose, making new friends, and learning about a new culture” (p. 47). Warschauer may have been overly optimistic at the birth of the Internet revolution in 1995 as this research, conducted with Thai high school students in 2012, indicates that emails lead to simplified ‘Twitter’ language, whereby students paid more attention to the contents of a message than the grammar or style. The “chatting-like” nature of e-mail correspondence favored high-performance learners who became more involved in enjoying language learning and improved their already high self-confidence.

The Low Achiever group experienced an exceptionally high attrition rate. This may have been due to inhibitions to send emails to strangers in another country, or that email e-learning method was too demanding on a personal level. Almost certainly, the Low Achiever group preferred teacher-led classroom English exercises perhaps because the “depth of interactions with real teachers has set the bar of learner expectations sufficiently high that many e-learning environments are perceived to be one-dimensional. Consequently, most e-learning courses have a high attrition rate, with learners giving up after one or a few sessions.” (Graesser et al., 2005)

Perhaps as much as 90% of the students’ happiness at school is directly influenced by relationships with other students and teachers, and as such local training is probably the most efficient means of language learning available today. (Zoller Booth, 2008)

While it is clear that many students preferred teacher-led English learning, it is important to take into account the large step that was made by a large number of Thai students in the research group who had never previously experienced the target culture in person. By means of e-mail exchanges, these students gained genuine communicative skills with the L2 English speakers in a totally different country and culture.

International email exchange provided opportunity for the supervising teacher to help students avoid making inappropriate comments to one another. It also offered a forum for the supervising teacher to help filter student’s thoughts and understanding academic expectations by providing examples of what the teacher was looking for and how it would be graded.

Perhaps the most valuable revelation from this research was the application of the Flesch Kinkaid Readability Level formula to evaluate student written work as a tool for measuring the level of grammar and vocabulary for Matthayom (high school) students in the English Programme. While logical argumentation and style are not evaluated, the Flesch Kinkaid does provide an indication of each student’s basic English foundation, which can be compared across the grade levels in the English Programme.

## **7 Further Research Required**

This researcher believes that teachers should engage high school students in authentic activities that encourage cooperation and the development of interpersonal skills, and that such activities are essential for those students learning another language and its accompanying culture.

International email exchange provides opportunities for students to review conversation emails while studying for exams or working on projects and teachers can use these emails to gain a better understanding of a student's individual communicative level in the target language. In this controlled environment, students also learn online responsibility, practicing responsibilities in real life international experiences.

While there were several limitations to this project, including the relatively short duration of the exchange, the sending of emails established contact with people from outside their own country, enabled students to achieve a greater appreciation of another culture, provided a deeper awareness of an international community, and the possibility for the student to improve his fluency in English reading and writing.

Since asynchronous online communication will almost certainly become more and more central to teaching programs, educators need to work to design authentic learning experiences for students in preparation for life in the 21st century.

Future research should look at long-term effects of the international email exchange, studying whether or not participants continue emailing after the project, as well as developing the Flesch-Kincaid Grade Level Readability Formula for analyzing high school student written content.



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## 9.2 Appendix B: Questionnaire

### epals Email Questionnaire แบบสอบถามอีเมล

Class: \_\_\_\_\_ No: \_\_\_\_\_

1. Have you ever used a computer for: (คุณเคยใช้คอมพิวเตอร์สำหรับ)

- |   |  |   |
|---|--|---|
| a) email <input type="checkbox"/>             | d) web search <input type="checkbox"/>           | g) writing essays in Thai <input type="checkbox"/>      |
| (อีเมล)                                       | (ค้นหาเว็บ)                                      | (เขียนบทความ)   |
| b) reading the news <input type="checkbox"/>  | e) Internet shopping <input type="checkbox"/>    | h) writing essays in English <input type="checkbox"/>   |
| (อ่านข่าว)                                    | (ช้อปปิ้งบนอินเทอร์เน็ต)                         | (เรียงความในภาษาอังกฤษ)                                 |
| c) downloading music <input type="checkbox"/> | f) video call (web cam) <input type="checkbox"/> | i) watching movies or TV shows <input type="checkbox"/> |
| (ดาวน์โหลดเพลง)                               | (สนทนาในรูปแบบวิดีโอ)                            | (ชมภาพยนตร์หรือรายการโทรทัศน์)                          |
| j) Other: (อื่นๆ) _____                       |  |   |

2. Do you have a computer at home?

(คุณมีคอมพิวเตอร์ที่บ้านหรือไม่)

YES (ใช่) ☐

NO (ไม่) ☐

3. Do you have Internet at home?

(คุณมีอินเทอร์เน็ตที่บ้านหรือไม่)

YES (ใช่) ☐

NO (ไม่) ☐

4. How often do you use a computer? (คุณใช้คอมพิวเตอร์บ่อยแค่ไหน)

- |   |   |  |
|---|---|--|
| a) once/day (วันละครั้ง) <input type="checkbox"/> | c) 2-5 a day (2-5 ครั้งต่อวัน) <input type="checkbox"/> | e) more than 16 times a day <input type="checkbox"/> |
| (สัปดาห์ละครั้ง)                                  | (6-15 ครั้งต่อวัน)                                      | (มากกว่า 16 ครั้งต่อวัน)                             |
| b) once a week <input type="checkbox"/>           | d) 6-15 times a day <input type="checkbox"/>            |  |
| (สัปดาห์ละครั้ง)                                  | (6-15 ครั้งต่อวัน)                                      |  |

5. Before this class, had you ever communicated with someone from another country:

ก่อนที่จะคุณจะมาเรียนวิชานี้ คุณเคยติดต่อกับคนจากประเทศอื่นหรือไม่

- |  |  |   |
|--|--|---|
| a) Never <input type="checkbox"/>          | c) yes, in person <input type="checkbox"/> | e) yes, on the phone <input type="checkbox"/>   |
| ไม่เคย                                     | (ใช่ โดยการเจอกัน)                         | (ใช่ ทางโทรศัพท์)                               |
| b) yes, by letter <input type="checkbox"/> | d) yes, by email <input type="checkbox"/>  | f) yes, in a chat room <input type="checkbox"/> |
| (ใช่ ทางจดหมาย)                            | (ใช่ ทางอีเมล)                             | (ใช่ ในห้องสนทนา)                               |

6. How many emails have you received from your epal? (คุณมีอีเมลกี่ฉบับ ที่ได้รับจาก epal)

- |                                   |                                   |                                   |                                       |
|-----------------------------------|-----------------------------------|-----------------------------------|---------------------------------------|
| a) 0 - 1 <input type="checkbox"/> | b) 2 - 3 <input type="checkbox"/> | c) 4 - 5 <input type="checkbox"/> | d) 6 or more <input type="checkbox"/> |
|                                   |                                   |                                   | (6 หรือมากกว่า)                       |

7. Did you find the epal project interesting? (ท่านคิดว่า โครงการ epal น่าสนใจหรือไม่)

- |  |   |  |   |
|--|---|--|---|
| a) Very interesting <input type="checkbox"/> | b) Interesting <input type="checkbox"/> | c) A little interesting <input type="checkbox"/> | d) Not interesting <input type="checkbox"/> |
| (น่าสนใจมาก)                                 | (น่าสนใจ)                               | (น่าสนใจเล็กน้อย)                                | (ไม่น่าสนใจ)                                |

8. Did it make you want to study English more? (มันทำให้คุณต้องการที่จะเรียนภาษาอังกฤษเพิ่มมากขึ้นหรือไม่)

- |                                   |                                 |                                      |                                |
|-----------------------------------|---------------------------------|--------------------------------------|--------------------------------|
| a) A lot <input type="checkbox"/> | b) Yes <input type="checkbox"/> | c) A little <input type="checkbox"/> | d) No <input type="checkbox"/> |
| (มาก)                             | (ใช่)                           | (เล็กน้อย)                           | (ไม่)                          |

9. Will you continue emailing your epal after our class is over?

(คุณจะยังคงส่งอีเมล epal หลังจากที่เราเรียนจบหรือไม่)

- |                                 |                                   |  |                                |
|---------------------------------|-----------------------------------|--|--------------------------------|
| a) Yes <input type="checkbox"/> | b) Maybe <input type="checkbox"/> | c) I don't know <input type="checkbox"/> | d) No <input type="checkbox"/> |
| (ใช่)                           | (อาจจะ)                           | (ไม่แน่ใจ)                               | (ไม่)                          |

10. What did you like most about your email exchange experience?

(คุณชอบอะไรมากที่สุดกับการแลกเปลี่ยนทางอีเมลครั้งนี้)

11. What did you like least about your email exchange experience?

(คุณชอบอะไรน้อยที่สุดกับการแลกเปลี่ยนทางอีเมลครั้งนี้)

## 9.3 Appendix C: Student Essay Analysis (Class 1)

Student	Sen- tences	Avg char/wd	Avg syl/ word	Avg wds/ sentence	Gunning Fog index	Coleman Liau index	Flesch Kincaid Grade	ARI (Automated Readability)	SMOG	Words	Characters (without spaces)	Flesch Reading Ease	Flesch Kincaid Grade	Grade
1	10	4.18	1.44	9.7	7.18	5.7	5.22	3.09	8.2	97	405	74.89	5.22	5
2	8	5.04	1.7	10.5	9.91	11	8.59	7.54	9.98	84	423	52.16	8.59	9
3	7	4.14	1.59	10	9.14	5.6	7.02	3.08	9.55	70	290	62.53	7.02	7
4	9	4.97	1.66	11.89	10.36	10.96	8.68	7.93	10.3	107	532	54.03	8.68	9
5	13	4.12	1.5	7.85	6.67	4.63	5.17	1.89	7.56	102	420	71.97	5.17	5
6	13	3.93	1.47	8.62	8.45	3.86	5.15	1.38	8.68	112	440	73.46	5.15	5
7	15	4.19	1.49	7.27	6.94	4.77	4.78	1.95	7.9	109	457	73.72	4.78	5
8	17	3.82	1.44	6.71	5.84	2.25	4	-0.06	7.2	114	436	78.32	2.25	2
9	13	4.26	1.46	11.46	8.88	6.68	6.07	4.37	9.26	149	635	71.99	6.07	6
10	28	3.11	1.28	4.93	5.16	-3.58	1.38	-4.32	6.43	138	429	93.94	1.38	1
11	15	3.96	1.4	7.47	6.2	3.53	3.86	0.98	7.24	112	444	80.67	3.86	4
12	15	4.22	1.39	7	5.85	4.76	3.55	1.94	7.24	105	443	82.1	3.55	4
13	17	4.14	1.53	6.82	7.21	4.18	5.08	1.47	7.79	116	480	70.82	4.18	4
14	17	4.13	1.5	7.41	6.77	4.46	5	1.71	7.6	126	520	72.41	5	5
15	20	3.98	1.38	6.8	5.37	3.22	3.37	0.71	6.67	136	541	82.99	3.37	3
16	7	3.94	1.45	13.29	10.48	5.12	6.72	3.75	10.2	93	366	70.54	5.12	5
17	14	3.62	1.38	8.57	8.1	2.05	4.08	-0.07	8.48	120	435	81.11	4.08	4
18	11	4.33	1.47	8.45	6.39	6.17	5.09	3.21	7.67	93	403	73.63	5.09	5
19	23	4.04	1.41	8.17	6.67	4.31	4.29	1.67	7.85	188	759	78.84	4.29	4
20	16	4.11	1.41	10.94	7.8	5.69	5.33	3.42	8.3	175	720	76.33	5.33	5
21	11	4.53	1.5	9.45	8.01	7.7	5.8	4.63	8.48	104	471	70.34	5.8	6
22	11	4.17	1.41	20.55	11.58	7.29	9.08	8.47	10.4	226	942	66.57	9.08	9
23	7	3.73	1.35	12.57	7.3	3.77	5.27	2.41	8.07	88	328	79.67	5.27	5
24	13	4.09	1.49	10.62	10.62	5.45	6.16	3.13	10.3	138	564	69.77	6.16	6
25	10	4.09	1.46	8	6.7	4.53	4.79	1.82	7.9	80	327	74.99	4.79	5
26	22	4.01	1.44	8	7.52	4.08	4.49	1.46	8.09	176	706	77.1	4.49	4
27	10	4.65	1.67	6.9	9.14	7.25	6.77	3.93	8.74	69	10	58.83	6.77	7
28	10	4.19	1.44	6.8	7.43	4.47	4.07	1.71	7.9	68	285	78.01	4.07	4
29	10	4.32	1.6	5	7.6	3.64	5.24	1.42	7.58	50	216	66.4	5.24	5
30	11	4.45	1.49	12.45	8.78	7.97	6.84	5.73	9.4	137	609	68.22	6.84	7

**9.4 Appendix D: Student email Readability Analysis**

Student	Date	Sentences	Average characters /word	Avg syllables / word	Avg words/ sentence	Gunning Fog index	Coleman Liau index	Flesch Kincaid Grade level	ARI (Automated Readability Index)	SMOG	Words	Characters (without spaces)	Flesch Reading Ease
1	11-Jun	13	3.55	1.35	7.46	5.05	1.07	3.26	-1	6.4	97	344	85.01
1	20-Jun	7	4.15	1.49	5.86	5.27	3.5	4.25	1.03	7.14	41	170	75.02
2	11-Jul	6	2.95	1.3	3.33	1.33	-7.42	1.05	-5.87	3	20	59	93.47
3	09-Jun	18	3.52	1.34	7.28	5.66	0.81	3.1	-1.22	6.87	131	461	85.79
4	09-Jun	11	3.79	1.46	13.55	9.71	4.28	6.88	3.17	9.81	149	564	69.88
4	01-Jul	8	3.65	1.32	18.25	10.31	4.06	7.13	4.89	9.42	146	533	76.48
6	09-Jun	8	3.53	1.37	7.5	4.33	1.01	3.46	-1.04	5.74	60	212	83.6
7	09-Jun	45	4.05	1.44	4.84	6.16	1.84	3.35	0.05	6.92	218	882	79.67
7	19-Jun	5	3.83	1.38	4.8	1.92	0.53	2.51	-0.98	3	24	92	85.64
7	20-Jul	19	3.65	1.31	7.74	5	1.8	2.92	-0.39	6.32	147	536	87.91
8	11-Jun	4	3.62	1.41	8	6.95	1.8	4.12	-0.36	7.74	32	116	79.75
9	11-Jun	15	3.98	1.47	6.93	6.62	3.32	4.47	0.79	7.47	104	414	75.34
9	25-Jun	4	3.81	1.25	9	4.71	3.28	2.67	0.99	5.74	36	137	91.95
9	16-Jul	7	3.72	1.39	9.57	5.02	2.96	4.52	0.86	5.93	67	249	79.69
10	09-Jun	10	4.39	1.5	6.2	6.35	5.2	4.53	2.33	7.24	62	272	73.64
11	09-Jun	15	4.01	1.46	7.33	6.57	3.72	4.54	1.12	7.47	110	441	75.57
11	12-Jul	16	3.82	1.39	9.25	5.32	3.44	4.36	1.18	6.35	148	565	80.26
12	28-Jun	4	3.46	1.32	21	11.26	3.18	8.19	5.39	9.71	84	291	73.73
12	11-Jul	4	2.4	1.17	8.75	4.64	-5.09	1.65	-5.75	5.74	35	84	98.85
12	11-Jul	1	4	1	2	0.8	-7.24	-3.01	-1.59	3	2	8	120.21
13	09-Jun	5	3.74	1.37	5.4	6.6	0.68	2.69	-1.11	7.24	27	101	85.42
13	22-Jun	3	3.33	1.47	5	2	-2.17	3.67	-3.23	3	15	50	77.68
13	11-Jul	6	3.24	1.22	6.83	3.71	-1.08	1.47	-2.73	5.24	41	133	96.73
14	09-Jun	7	3.88	1.5	6	5.26	2.06	4.45	-0.15	7.14	42	163	73.85
14	10-Jun	8	3.98	1.57	6.12	6.53	2.74	5.34	0.38	7.33	49	195	67.68
14	21-Jun	4	3.8	1.27	7.5	4.33	2.58	2.28	0.22	5.74	30	114	92.06
14	08-Jul	4	3.67	1.5	4.5	4.02	-0.87	3.87	-1.91	5.74	18	66	75.37
14	18-Jul	4	3.57	1.36	3.5	1.4	-3.34	1.79	-2.86	3	14	50	88.47
15	10-Jun	13	4.38	1.58	5.08	7.49	4.08	4.98	1.73	7.56	66	289	68.37

Student	Date	Sentences	Average characters /word	Avg syllables / word	Avg words/ sentence	Gunning Fog index	Coleman Liau index	Flesch Kincaid Grade level	ARI (Automated Readability Index)	SMOG	Words	Characters (without spaces)	Flesch Reading Ease
15	20-Jun	2	4.06	1.65	8.5	10.46	4.58	7.16	1.94	9.71	17	69	58.87
15	09-Jul	1	4.2	1.6	5	2	2.94	5.24	0.85	3	5	21	66.4
16	13-Jun	4	3.44	1.16	6.25	2.5	-0.34	0.54	-2.1	3	25	86	102.36
16	09-Jul	11	4.14	1.4	5.27	4.18	2.88	2.95	0.7	5.86	58	240	83.33
17	09-Jun	6	3.78	1.37	10.83	5.56	3.72	4.79	1.81	6.16	65	246	80
17	11-Jul	2	4.06	1.47	8.5	5.75	4.58	5.08	1.94	6.87	17	69	73.8
18	11-Jul	8	4.13	1.39	5.75	5.78	3.31	3.07	0.9	6.87	46	190	83.29
18	14-Jul	3	4.09	1.31	11.67	5.81	5.69	4.47	3.65	6.16	35	143	83.8
19	09-Jun	8	3.53	1.37	7.5	4.33	1.01	3.46	-1.04	5.74	60	212	83.6
19	18-Jul	11	3.83	1.38	6.27	2.51	1.95	3.1	-0.27	3	69	264	83.99
20	10-Jun	6	4.03	1.47	6.33	4.64	3.18	4.27	0.7	6.16	38	153	75.73
20	19-Jun	1	3.56	1.44	9	8.04	1.81	4.96	-0.18	8.48	9	32	75.5
20	15-Jul	3	3.59	1.36	7.33	2.93	1.26	3.36	-0.85	3	22	79	84.03
21	03-Jul	19	4.26	1.46	8.63	7.6	5.83	4.97	2.96	8.18	164	699	74.78
21	03-Jul	7	3.72	1.41	4.57	5.58	-0.46	2.79	-1.63	6.59	32	119	83.23
21	28-Jul	8	4.12	1.47	7.38	7.02	4.39	4.69	1.66	7.74	59	243	74.6
22	18-Jun	7	3.48	1.33	11.71	6.64	2.11	4.66	0.8	7.14	82	285	82.49
22	22-Jun	4	4.23	1.55	5.5	7.65	3.64	4.79	1.23	7.74	22	93	70.51
22	11-Jul	8	3.79	1.38	12.25	7.35	4.05	5.44	2.53	7.74	98	371	77.86
23	19-Jul	7	4.57	1.64	9.57	11.59	7.97	7.52	4.87	10.5	67	306	58.22
24	10-Jun	11	4	1.5	7.82	7.31	3.92	5.16	1.32	8.22	86	344	72
24	25-Jun	7	3.86	1.43	5.29	4.28	1.29	3.37	-0.58	6.59	37	143	80.29
24	29-Jun	5	4.6	1.51	7	6.23	7.01	5.01	3.74	7.24	35	161	71.62
24	06-Jul	5	4.6	1.51	7	6.23	7.01	5.01	3.74	7.24	35	161	71.62
24	10-Jul	3	4	1.57	7.67	6.54	3.85	5.87	1.24	7.47	23	92	66.64
24	16-Jul	5	4.6	1.51	7	6.23	7.01	5.01	3.74	7.24	35	161	71.62
26	11-Jun	23	3.69	1.35	7.87	5.14	2.09	3.45	-0.14	6.43	181	667	84.33
26	11-Jul	10	4	1.48	8.1	6.2	4.06	5.05	1.46	7.9	81	324	73.28
27	10-Jun	23	3.88	1.48	5.78	4.72	1.86	4.14	-0.27	6.61	133	516	75.66
27	18-Jul	8	3.55	1.42	9.12	5.29	1.81	4.78	-0.16	6.35	73	259	77.05

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27	20-Jul	17	3.94	1.38	8.47	5.05	3.89	3.94	1.38	6.51	144	568	81.91
28	13-Jun	12	4.05	1.49	9	7.3	4.7	5.51	2.13	8	108	437	71.58
28	16-Jul	7	3.66	1.31	10.14	5.18	2.81	3.82	0.89	5.93	71	260	85.73
28	23-Jul	1	3.9	1.4	10	8	4.17	4.83	1.94	8.48	10	39	78.25
29	09-Jun	19	3.77	1.38	4.58	3.21	-0.15	2.47	-1.38	5.51	87	328	85.5
29	10-Jun	12	3.63	1.45	5	4.67	-0.4	3.47	-1.82	6.16	60	218	79.09
29	22-Jun	24	4.04	1.45	7.21	6.35	3.84	4.34	1.2	7.33	173	699	76.78
29	30-Jun	2	3.67	1.4	7.5	3	1.8	3.86	-0.41	3	15	55	80.78
29	07-Jul	3	3.5	1.33	4	1.6	-2.69	1.7	-2.95	3	12	42	89.98
29	14-Jul	2	3.86	1.38	14.5	5.8	4.88	6.34	4.01	3	29	112	75.43
29	20-Jul	6	4.05	1.47	6.33	6.74	3.33	4.27	0.82	7.47	38	154	75.73
30	10-Jun	15	4.08	1.46	7.8	6.88	4.37	4.7	1.67	7.69	117	477	75.27
30	24-Jun	7	4.77	1.67	12.43	10.95	9.88	8.92	7.25	10.8	87	415	53.22
30	11-Jul	9	4.14	1.41	14.56	8.26	6.51	6.75	5.33	9.32	131	542	72.59
30	23-Jul	10	4.05	1.44	6.4	5.69	3.35	3.87	0.83	7.24	64	259	78.73
45	22-Jul	5	3.78	1.41	13.6	8.38	4.25	6.37	3.17	8.48	68	257	73.6
45	22-Jul	7	3.55	1.33	13.86	8.02	2.92	5.51	2.2	8.07	97	344	80.26
45	22-Jul	5	4	1.41	5.4	3.64	2.2	3.12	0.11	5.45	27	108	82.29
47	15-Jun	7	3.61	1.31	10.14	6.31	2.48	3.82	0.62	7.14	71	256	85.73
58	20-Jul	1	3.42	1.31	55	24.18	3.79	21.31	22.17	12.5	55	188	40.26