# Let's Read Together: An Evaluation of a computer Assisted Reciprocal Early English Reading System

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**Abstract.** The purposes of this study were to evaluate the effect of a computer assisted reciprocal early English reading (CAREER) system. The results showed that these components were unable to guarantee the students to collaborate well when they lacked for the abilities to accomplish the assigned tasks. Nevertheless, with the support of the proposed mobile reading system the students were benefited by collaborating with each other.

## Introduction

Students' reading abilities play an important role in their academic achievement. Research evidence shows that training in early linguistic skills improved children's reading performance, especially for those learners who are at-risk for reading difficulties (Lovett, Warren-Chaplin, Ransby, & Borden, 1990). In the field of EFL teaching, collaborative learning (CL) has been widely used in reading programs to implement the required intensity for mastery of early reading skills and provide students with learning support because of their sophisticated features such as small group, pair-work, and peer-assisted learning. In CL model learners are put at the center of learning process, and guidance and concrete teaching are provided whenever necessary. In a review of the literature on collaborative learning also affirmed its effect upon students' reading skills, such as promoting students' motivation (Ushioda, 1996), increasing reading outcomes (Slavin, 1988), pursuing group goal (Nichols & Miller, 1994), and decreasing EFL students' feeling of school alienation (Ghaith, 2003).

Even though collaborative learning has been known as an effective teaching method in EFL reading, few studies had focused on early EFL reading. The pedagogical challenges (such as students' diversity in reading abilities, the social-economic gap between rural and country, class size, limited teaching time, and available resources) becomes a problem when EFL teachers try to adopt collaborative learning in reading instruction in traditional EFL classes (Lan, Chang, & Sung, 2004).

Mobile technology is currently a feasible approach to overcoming many of the obstacles in current methods of EFL reading instruction. Standing on the shoulder of giant CALL (computer assisted language learning, e.g., Sung, Huang, & Chang, under review), MALL (mobile assisted language learning) has the capabilities of providing EFL learners with the same opportunities for independent and targeted reading practice and immediate corrective feedback as CALL. Considering the limited number of MALL studies focusing on early EFL reading skill training and fewer studies using elementary EFL learners as participants, the purpose of this research was to investigate how mobile technology benefits to elementary EFL learners' collaboration. Rather than measuring specific learning gains, this research focused on comparing students' collaborative behaviors found in two different EFL learning environments (without and with mobile device supports), and investigated that whether mobile learning could benefit students' collaboration. The following sections will give a brief description of methodology, results, and finally a discussion and conclusion.

## Method

In order to understand elementary EFL learners' collaboration, we collected the video data from the two classes and then watched the vide data repeatedly. The video watch was focused on the how the groups behaved during the reading activities described in Procedure Section.

### Subjects

The participants of this experiment were 52 forth graders in 2 classes from an elementary school of Taipei, Taiwan. Each class was first randomly assigned into an experimental group and a control group. Then the students were grouped into heterogeneous reading groups based on their level of English achievement in the third grade.

### CAREER System

This study proposed a reading system called Computer Assisted Reciprocal Early English Reading (CAREER). CAREER consists of three modules: a sight word module, a phonetic word module, and a peer assessment module. The design strategy of the sight word module and the phonetic word module is based on a *scaffolding* foundation. When students are practicing and taking the test, CAREER provides them with the necessary scaffoldings. Students can hear and repeat after CAREER to say the sound of a sight word or a single phoneme. In contrast to the learning activities of word learning, the strategy used in the peer assessment module is *collaborative learning*. In the peer assessment module, CAREER first assigns each student a paragraph randomly drawn from the text. Next, CAREER asks the whole group to organize the complete story by sharing and discussing. Then, CAREER shows some comprehension questions on the screen and asks students to answer the questions by group discussion.

### Procedure

Five teaching packages were taught in this study. A teaching package consisted of two two-lesson activities and was over a period of 2 weeks, two lessons per week, with a total of 160 minutes for each teaching package. In the first two-lesson activities, each student was assigned a randomly chosen subset of the teaching materials which focused on the training of sight words or phonetic words. Next, students were asked to read out the assigned subset of words individually. Then, they were asked to teach the other groupmates the subset of words which were assigned to them and also learn the other subsets of words from others. Finally, one student from each group was picked, by drawing of lots, to represent their group and attend the speed reading contest. If the attendant won then her/his team won.

In the second two-lesson activity, six steps were carried out step by step. Firstly, students reviewed the materials. Secondly, a randomly chosen paragraph of a written text was assigned to each student, and they were asked to read out the paragraph individually. Thirdly, they were asked to tell the meaning of the paragraph to their group. Fourth, students were asked to collaboratively organize the different paragraphs into a complete story and answer the comprehension questions together. Fifthly, they were asked to do intra-group reading assessments. Each group member read out a paragraph in turn to their group and each group member would assess her/his oral reading. And finally, one student from each group was picked, by drawing of lots, to represent their groups to attend the oral reading contest.

The teaching activity flow and materials used in the experimental group and the control group are identical except that the materials were built as e-version for the former. Each student in the experimental group was provided with a Tablet PC with a stylus and a headset, and the students of the control group were given identical printed reading materials to do the same activities as the experimental group.

## Results

After the treatment finished, two respective observers first recorded the time spent on each target behavior. Then the Pearson product-moment correlation of the time proportion of the observed behaviors from the two copies of the recorded results was computed, and it was 0.908. The results of the in-class observation are shown in Table 1.

The numbers in Table 1 stand for the average time proportion which students spent on the following activities: (a) SWI (individual learning of sight word) and SWG (group learning of sight word); (b) PWI (individual learning of phonetic word) and PWG (group learning of phonetic word); (c) VR (vocabulary reviewing); (d) PR (paragraph reading); (e) ST (story telling); (f) SM (story map); (g) RC (reading comprehension); (h) IntraGPA (intra-group peer-assessment); and (i) InterGPA (inter-group peer-assessment). We found that there existed some problems that the control group had in group reading activities: *teacher-dependant*, *weak interdependent relationship*, *inefficient social interaction*, *inefficient peer-assessment*, and *absent-minded trait*. From the data shown in the lower part of Table 1, the reading behaviors of the experimental group contrast sharply with that of the control group. With the support of CAREER, the five problems found in the control group were significantly reduced. In comparison the time proportions used in learning-related and learning-unrelated behaviors, the chi-square analysis results show that

the differences between the two groups are significant. It shows that in all the reading activities the frequencies of learning-related behaviors found in the experimental group are significantly higher than that in the control group. This obviously revealed that CAREER reduced the problems that the students of the control group had when doing individual or collaborative EFL reading activities and consequently benefited elementary EFL learners' collaborative learning with their peers.

Table 1: The reading behaviors of elementary EFL students and chi-square analysis results.

| Group | Observed behaviors & Chi-square | Word Learning (%) | | | | Text Reading (%) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | SWI | SWG | PWI | PWG | VR | PR | ST | SM&RC | Intra GPA | Inter GPA |
| Control | Learning-related | 62.4 | 46.1 | 59.4 | 50.8 | 62.4 | 72.2 | 77.2 | 59.6 | 30.6 | 75.5 |
| | Learning-unrelated | 37.6 | 53.9 | 40.6 | 49.2 | 37.6 | 27.8 | 22.8 | 40.4 | 69.4 | 24.5 |
| Experimental | Learning-related | 95.3 | 100.0 | 90.2 | 91.2 | 99.6 | 85.8 | 98.2 | 100.0 | 99.1 | 100.0 |
| | Learning-unrelated | 4.7 | 0.0 | 9.8 | 8.8 | 0.4 | 14.2 | 1.8 | 0.0 | 0.9 | 0.0 |
| $\chi^2_{(1,1)}$ | | 32.26* | 73.97* | 25.29* | 38.85* | 46.91* | 5.91* | 20.16* | 57.00* | 101.63* | 28.27* |

*$p < .05$.

## Conclusion

It is supported by numerous researches that collaborative learning and peer-assisted learning are effective approaches to early reading instruction and learning. However, because of the reality of the elementary EFL environment there remains much to be explored about the possibility of mobile technology used in elementary EFL reading teaching and learning.

According to the results of observation, with the support of CAREER, elementary EFL learners were responsible for their reading tasks and actively involved in collaborative learning activities. Furthermore, because of the lack of basic abilities to accomplish the assigned missions, without the support of technology the students were unable to collaborate with their peers effectively. An opposite phenomenon was found when the mobile devices were involved in collaborative EFL reading activities. The use of mobile devices in collaborative EFL reading activities strengthened the low- and medium-ability students' essential abilities to do individual learning and consequently accomplished their assigned task. This successful opportunity of being responsible was led to the positive peer assisted and collaborative learning behaviors of the students. We can conclude that the proposed mobile reading system reduced the problems that the students had in a conventional collaborative learning environment, and the students were benefited by collaborating with each other with the support of mobile technology.

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