

# Comparing CALL approaches: Self-access versus hybrid classes

Michael 'Rube' Redfield

Peter D. Campbell

Osaka University of Economics, JAPAN

*rube@mac.com*

With the steady increase of computer laboratories dedicated to language learning in many institutions in recent years, it is hardly surprising that self-access learning materials have attracted a significant amount of attention from second language learning textbook and software development companies. As Little (2001, p. 29) describes, the development of these self-access environments over the past two decades has been the "single most important development affecting the learning of foreign languages in the world." Different researchers advocate different reasons for using self-access materials. Wolff (1997), for example, argues that CALL can be used to promote certain aspects of learner autonomy such as working at one's own pace, freedom to choose materials and one's pedagogical path. Researchers such as Jones & O'Brien (1997) and Tamburini (1999) have suggested that self-study environments give learners the opportunity to work around tight scheduling constraints that make it difficult for them set aside time required for conventional language courses. There is, however, little documented evidence at this point to show how self-access environments compare to other language learning environments, in particular when CALL is used as a component of each environment.

CALL at Osaka University of Economics (OUE) has proven to be an effective way of improving our learners' EFL proficiency (Redfield & Campbell, 1999). In two other related studies, CALL, in the form of *New Dynamic English* (NDE), proved at least as effective as unrelated (to a CALL program such as NDE) formal classroom instruction (Redfield & Layne, 2000; Redfield, Bunday & Nuefer, 2002). NDE also proved to be equally effective in raising EFL proficiency scores over an academic semester as a web search program (Redfield & Levin, 2001; Levin & Redfield, 2003). Bill Gatton, president of DynEd Japan and local distributor of NDE, in seminars often speculates that CALL should theoretically be even more effective when used in conjunction with CALL coordinated classroom instruction. This is being investigated, looking at individual structures, but so far without conclusive results (Ryan, 2004).

In a previous paper (Redfield & Campbell, in press) however, NDE in a lab only, self-access approach, proved more effective than a combination of NDE with formal classroom instruction (hybrid). In the lab only section, the learners were observed to be actively involved in the program, whereas in the hybrid section, they seemed to relax (speak in Japanese, engaging in non related activities) in the direct, hands-on section of the lesson (especially when the instructor was engaged physically in another part of the room), resulting in markedly less time spent on engaged in the activities).

NDE is a stand alone program, and does not come with an accompanying text (see <http://www.dyned.com/products/nde/> for further information about the NDE program). For the purposes of this study, it was decided that the NDE hybrid instruction therefore was not ideal for testing the effectiveness of combining CALL with contemporary EFL classroom activities. In the spring of 2004, OUE began piloting another CALL program, *Side-by-Side Interactive* (S-S), developed by Pearson Longman (see <http://www.longman.com/ae/multimedia/tours/index.htm> for more information). Since the S-S computer program was derived directly from the classroom materials found in the text form of the program, it was thought that using the S-S CALL program in a standalone self-access format and comparing with a hybrid version of S-S (i.e., using both the traditional text materials with the S-S CALL program) would be an ideal format for evaluation. The purpose of the present study therefore, is to look at S-S in a self-access program, comparing it to a S-S hybrid instructional treatment.

## Method

### *Research question*

There is one main research question posed for the current study: Would there be statistically significant gains score differences between the self-access and hybrid groups on the NCT after one semester of instruction? The method used in dealing with this research question is described below.

### *Participants*

Participants in this study were 197 Japanese undergraduates taking required EFL courses at a mid ranked local college. The self-access group was made up of two intact classes ( $n = 62$ ), while four other intact classes were assigned to the hybrid instructional treatment ( $n = 135$ ). Learners were assigned to their classes according to their last names by the administration. Only data from those students who took both the pre and post-tests were included in this study. Both groups used *Side-by-Side Interactive* as the CALL component of their respective treatments. *Side-by-Side Interactive* is the computer adapted version of the original two books in the venerable *Side-by-Side* textbook series. There are 52 lessons in each of this two part series, starting at the true beginner level and moving up to an intermediate level. At OUE we generally attempt to cover one level each academic year.

### *Instruction*

**Self access:** Learners in this section of the study were required to complete the first twenty segments of book one of the *Side-by-Side Interactive* computer-based materials. All learning

was confined to the regularly scheduled classroom period, with the instructor acting as a lab coordinator. Completion was checked by looking over each student's check-up test and writing assignment for each segment. These are integral parts of the CALL program, and are recorded to disk. There was no hands-on teaching in this treatment, although the instructor (the senior author of this paper) was available to answer questions. Due to the fact that the context in which the CALL materials were used was actually an in-class activity, it is arguable as to whether or not this particular environment may be considered as self-access, but for this study, given that there was no active instruction on the part of the teacher, we have described this as self-access for comparative purposes.

**Hybrid:** Approximately one hour of the weekly ninety minute class was used for direct, instructor lead teaching, using the *Side-by-Side* textbook and coordinate materials determined by the instructor. The remaining thirty minutes were used on the computer, following a lock step approach, with each learner working on the same materials at approximately the same time. These lab sessions were held at various times during the lesson, and not at the end of each period. An effort was made to coordinate the lab sessions with the direct instructional sessions. For example, learners would spend time on a segment, then go over the same material orally with the instructor (the junior author of this paper).

### ***EFL Proficiency Measure***

The New Campbell Test (NCT) was used as the measuring agent. This is a fifty-item paper-based multiple choice test based on a study of the most current Japanese Ministry of Education curriculum guidelines for high school English. The NCT focuses predominantly on grammar, and is comprised of two parts; the first part consists of grammar-oriented gap-filling questions, and the second part deals with word order (see Appendix A).

### ***Administration***

Data was collected, scored, tabulated, and then statistically analyzed, using the *StatView* statistical package for the Macintosh computer. Repeated measures ANOVA and post hoc Fisher's protected least significant differences (Fisher's PSLD) tests were chosen as the appropriate statistical procedures for data analysis. The alpha for statistical significance was set at .05.

### **Results**

The self-access group posted a mean of 34.048 on the pre-test ( $SD = 5.579$ ,  $n = 62$ ), with the hybrid group averaging 32.859 ( $SD = 5.698$ ,  $n = 135$ ) on the same measure. On the post-test, the results were  $x = 37.000$ ,  $SD = 5.207$ ,  $n = 62$  for the self-access learners and  $x = 34.363$ ,  $SD = 6.061$ ,  $n = 135$ ) for the hybrid group. See Table 1 for descriptive statistics.

Table 1. Pre and post-test descriptive statistics

	Count	Mean	Std. Dev.	Std. Err.
Hybrid pre test	135	32.859	5.698	.490
Hybrid post test	135	34.363	6.061	.522
Self access pre test	62	34.048	5.579	.709
Self access post test	62	37.000	5.207	.661

Because the NCT was administered both as the pre and post-test measure, a repeated measures ANOVA was selected to further analyze the data. This procedure yielded an  $f$ -value of 119.465, significant at the  $p = .0001$  level, indicating significant differences. A post hoc Fisher's PLSD was performed to pinpoint the areas of statistical significance. This measure indicated that the total (self access and hybrid taken together) gain scores for the combined groups was significant at the  $p = .0001$  level. The differences in self access and hybrid gain scores, with a critical difference of 1.688, also reached statistically significance,  $p = .0265$ . As in the previous study using *New Dynamic English* (Redfield & Campbell, in press), the self-access treatment proved more effective. See Table 2 for the ANOVA results.

Table 2. NCT repeated measures ANOVA

	DF	Sum of Squares	Mean Square	F-Value	P-Value	Lambda	Power
Treatment	1	310.997	310.997	4.996	.0265	4.996	.598
Group	195	12138.094	62.247				
NCT	1	421.683	421.683	119.465	<.0001	119.465	1.000
NCT * Treatment	1	44.536	44.536	12.617	.0005	12.617	.960
NCT *Group	195	688.301	3.530				

## Discussion and Conclusions

Non-English major students taking required undergraduate English subjects were taught over a single semester using either the CALL program *Side-by-Side Interactive* in a self-access format or in combination of lab and formal classroom instruction (hybrid). A repeated measures ANOVA found that together both programs were adapt at significantly raising EFL proficiency scores ( $p = .0001$ ), but that the self-access treatment was superior in raising gain scores on the NCT ( $p = .0023$ ).

In this study the self-access treatment proved superior in raising students' EFL proficiency over the course of a single college semester, thus replicating the results of our initial study

(Redfield & Campbell, in press). Ideally, one would expect the opposite result, with the hybrid treatment yielding higher proficiency gains. Over a single college semester, this did not however prove to be the case.

Hypothetically, perhaps the self-access condition leads to more time on task, and hence more learning, than the hybrid condition. Observing the respective classes, we found the self-access learners to be more diligent than hybrid learners, who often seemed to breeze through the instructor lead classroom activities, spending most of their time relaxing or doing the activities in Japanese rather than English. This was especially true when doing pair and group work far from the eyes of the instructor. It is possible, however, that the learners involved in the self-access group may have performed differently if the language learning environment was not in a classroom situation. Under conditions where learners had more freedom over their time, O'Connor and Gatton (2004, pp. 207-208) found, for example, that many of the learners that were involved in self-access learning using NDE spent an increasingly large amount of time off-task, preferring to surf the Net, send email and chat to avoid doing the assigned coursework. After receiving warnings from the teachers, students performed the activities more actively and scores demonstrated improvement. The higher score for the self-access students could, then, be attributable to the fact that learners were forced to spend the actual time on task at the computer.

Because of the close correlation between the *Side-by-Side Interactive* materials and the *Side-by-Side* textbook, it is also possible that learners were less inclined to attempt the CALL materials as seriously as the self-access group as they had already covered much of the material in the teacher-fronted component of the class. Thus, the actual time spent on task is an issue that may also have had an effect on the outcomes of the study, but they were not directly investigated here.

It should also be noted, however, that it is quite possible that another instructor might have gotten higher results from the hybrid treatment, as instructors differ in their approach and ability. Some classes of low level non-English majors also appear more open to oral English instruction than others. In this particular case self-access instruction was statistically superior to hybrid instruction, but the results certainly might have been different with other hybrid instructors or in other classrooms.

There are several areas which require further investigation. Firstly, as described above, the self-access environment was in fact a supervised self-access context, which may have had an affect on the way in which the learners used the CALL materials, particularly in terms of the time they spent on task. If the self-access sessions were unsupervised, would the study yield similar results? There is also a need to investigate how the learners in the hybrid learning environment utilized both the CALL materials and the textbook materials. That is to say, while the overall time for each group was 90 minutes per class, it is necessary to see how much of this 90 minute period in both cases was spent actually engaged in learning activities and how much was spent on other things. Furthermore, this study ran over a single semester, limiting itself thereby to the beginning stages of the CALL program.

Research is also needed to determine whether the differences between the two groups would be sustained over longer periods. Further investigation of learning in a non-supervised self-access learning environment compared with the supervised environment of the current study would also shed light on the role of teacher as facilitator even when the

teacher is not directly involved in the instructional process. Students' impressions of the two different formats is another aspect that warrants further investigation. Felix (1997), for example, showed that although learners involved in self-access learning demonstrated improvements in proficiency, they still showed a clear preference for teacher-fronted learning environments. It is possible, however, that students involved in the supervised self-access tasks may find this a preferable environment compared to the hybrid classes.

In conclusion, this study has served to shed some light on the relationship between the use of CALL as a self-access resource as opposed to being used as a component to be used in conjunction with formal classroom approaches. There still remain questions as to the significance of the amount of time spent on task in each of the two approaches, as well as role of the teacher as supervisor in self-access environments. Other approaches to the hybrid treatment, to be determined by individual instructors or in integrated language centers, might lead to significantly different results as well.

## References

- Felix, U. (1997). Integrating multimedia into the curriculum: A case study. *On-CALL*, 11 (1), 1-13.
- Jones, C. & O'Brien, T. (1997). The long and bumpy road to multimedia: Hi-tech experiments in teaching a professional genre at distance. *System*, 25, 157-167.
- Levin, D., & Redfield, M. (2003). A preliminary look into the effectiveness of the inclusion of CALL in an EFL curriculum. *Toyohashi University of Technology - The Lark Hill Bulletin*, 25, 68-75.
- Little, D. (2001). Learner autonomy, self-instruction and new technologies in language learning: Current theory and practice in higher education in Europe. In A. Chambers & G. Davies (Eds.), *ICT and language learning: A European perspective* (pp. 29-38). Lisse: Swets & Zeitlinger.
- O'Connor, P., & Gatton, W. (2004). Implementing multimedia in a university EFL program: A case study in CALL. In S. Fotos & C. Browne (Eds.), *New perspectives on CALL for second language classroom* (pp. 199-224). Mahwah, NJ: Lawrence Erlbaum Associates.
- Redfield, M., Bunday, D. & R. Nuefer. (2002). Computer aided instruction after two years: The second replica study. *Osaka KeiDai Ronshu*, 52 (5), 261-274.
- Redfield, M., & Campbell, P. (1999, May). *Evaluating New Dynamic English 2: A formal study*. Paper presented at the Calling ASIA Conference, Kyoto Sangyo University, May, 1999.
- Redfield, M. & Campbell, P. (1999). Introducing computer aided instruction into the curriculum: A pilot study. *Osaka KeiDai Ronshu*, 50 (2), 251-262.
- Redfield, M., & Campbell, P. (In press). Comparing CALL approaches: Computer lab only versus a lab-classroom instructional program. *Osaka Keidai Ronshu*.
- Redfield, M., & Layne, G. (2000). Computer aided instruction after one year: A replica study. *Osaka KeiDai Ronshu*, 51 (3), 203-217.
- Redfield, M., & Levin, D. (2001). New Dynamic English versus web search English: How does NDE measure up to a content based CAI program? *Kyoyobu Kiyō*, 19, 135-139.

Ryan, K. (2004, June). *Blended vocabulary learning: An initial investigation*. Paper presented at the Far East English Language Teaching Association Annual Conference (PAC5), Vladivostok, Russia, June, 2004.

Tamburini, F. (1999). A multimedia framework for second language teaching in self-access environments. *Computers and Education*, 32, 137-149.

Wolff, D. (1997). Computers and new technologies: Will they change language learning and teaching? In J. Kohn, B. Ryschoff & D. Wolff (Eds.), *New horizons in CALL, Proceedings of EuroCALL 96* (pp. 65-82). Somebathely.

## Appendix: NLT Test B

**Choose the correct answer. Only one answer is correct.**

- 1 Where is the moon?
  - (a) The sun is in a sky.
  - (b) Sun is in a sky.
  - (c) The sun is in the sky.
  - (d) Sun is in the sky.
- 2 What \_\_\_\_\_ Jane doing?
  - (a) are
  - (b) is
  - (c) does
  - (d) did
- 3 John and Mary \_\_\_\_\_ television.
  - (a) are watching on
  - (b) are watching
  - (c) are looking to
  - (d) are looking on
- 4 Jane and I \_\_\_\_\_ here.
  - (a) we're
  - (b) we
  - (c) we are
  - (d) are
- 5 Jane, what \_\_\_\_\_ doing?
  - (a) he is
  - (b) are you
  - (c) are
  - (d) is
- 6 Jane's \_\_\_\_\_ the park.
  - (a) in
  - (b) at
  - (c) on
  - (d) into

- 7 Are there six pens on the table?  
(a) No, there are three. (c) No, are five.  
(b) No, there's the one. (d) No, there are any.
- 8 Kathy often sings, but \_\_\_\_\_?  
(a) sings Sarah? (c) Sarah does?  
(b) Sarah sings? (d) does Sarah?
- 9 John is looking at \_\_\_\_\_.  
(a) she (c) her  
(b) he (d) they
- 10 Who's that girl?  
(a) Is Jane. (c) It's a Mary.  
(b) It's Joan. (d) Naomi's that.
- 11 Where's the newspaper?  
(a) There's it. (c) There's under the chair.  
(b) It's here. (d) They're on the chair.
- 12 Are you sad?  
(a) Yes, I'm (c) Yes, I am.  
(b) No, I aren't (d) No, I not.
- 13 What's her name?  
(a) It's name is Jane. (c) It's a Jane.  
(b) It's Jane's name. (d) It's Jane.
- 14 Do you dance or sing?  
(a) I'm dance but I'm not sing. (c) I sing but I don't dance.  
(b) I'm dancing but I'm not sing. (d) I sing but I'm not dancing.
- 15 Is that a book?  
(a) Yes, there is. (c) Yes, it is.  
(b) Yes, that's. (d) Yes, is a book.

- 16 Is that dog big?
- (a) No, that's a little. (c) No, that's little dog.  
(b) No, it's little dog. (d) No, it isn't.
- 17 What's her sister doing?
- (a) Playing volleyball. (c) Is playing volleyball.  
(b) He playing volleyball. (d) She's playing volleyball.
- 18 How many chairs are there in the room?
- (a) Are four. (c) Are five chairs there.  
(b) There's one. (d) There's a chair.
- 19 The lamp is \_\_\_\_\_ the television.
- (a) at (c) near of  
(b) next to (d) between
- 20 The tree is \_\_\_\_\_ the door.
- (a) between (c) beside  
(b) in front (d) next
- 21 What's that girl?
- (a) It's a student. (c) She's student.  
(b) She's a student. (d) She's a student girl.
- 22 Do the girls know John?
- (a) Yes, they knows him. (c) No, they isn't.  
(b) Yes, they know. (d) No, they don't.
- 23 My sister is writing \_\_\_\_\_.
- (a) by a pencil. (c) in a paper.  
(b) with pen. (d) in a book.
- 24 Monday is the first day.
- (a) Tuesday is the second. (c) The second in Tuesday.  
(b) Tuesday is the fourth. (d) The fourth is Tuesday.

- 25 Sarah is in front of John. John is \_\_\_\_\_ Sarah.
- (a) beside (c) before  
(b) between (d) behind
- 26 (a) Come here to us! (c) Go here to we!  
(b) Go there to us! (d) Come here to my!
- 27 (a) Don't look at us! (c) Don't looking at us!  
(b) No looking at we! (d) Not look at us!
- 28 John is Mrs. Smith's son.
- (a) She is his son. (c) She is his son.  
(b) He is his son. (d) He is her son.
- 29 Whose CDs are those? They are \_\_\_\_\_ CDs.
- (a) he's (c) Mrs' Smiths  
(b) Mr. Smith's (d) she's
- 30 (a) Where are you going to put the cups? (c) Where are you going put cups?  
(b) Where you're going put the cups? (d) Where you are going to put the cups?
- 31 Sarah is tall and \_\_\_\_\_ .
- (a) Jane's too. (c) Jane is, too.  
(b) Jane is to (d) Jane is, two.
- 32 Does Jane play volleyball?
- (a) Yes, and Sarah doesn't too. (c) No, but Sarah doesn't.  
(b) Yes, but Sarah doesn't. (d) No, and Sarah does too.
- 33 Jane is talking to \_\_\_\_\_ .
- (a) they. (c) them.  
(b) she. (d) your.
- 34 These pens are \_\_\_\_\_ .
- (a) Johns. (c) John's.  
(b) of John. (d) to John.

- 35 Sarah \_\_\_\_\_ money in her pocket.
- (a) haves a (c) has some  
(b) haves some (d) has a
- 36 This is \_\_\_\_\_.
- (a) second lesson. (c) the lesson two.  
(b) lesson second. (d) lesson two.
- 37 164 is \_\_\_\_\_.
- (a) hundred sixty four. (c) a hundred sixty four.  
(b) hundred sixty and four. (d) a hundred and sixty four.
- 38 It's 21.00.
- (a) Yes, its nine in the evening. (c) Yes, its nine a.m.  
(b) Yes, it's nine in the afternoon. (d) Yes, it's nine hours.
- 39 (a) Sarah cans have John's radio. (c) Sarah can has John's radio.  
(b) Sarah can have John's radio. (d) Sarah can has Johns' radio.
- 40 (a) The girls don't do the homework. (c) The girls don't the homework.  
(b) The girls doesn't do the homework. (d) The girls don't does the homework.
- 41 Do Mr. And Mrs. Matsumoto speak English?
- (a) He does, but she doesn't. (c) He speak but she can't.  
(b) He do a little, but she don't. (d) He speak and she can't.
- 42 Who are those boys? One is my brother and \_\_\_\_\_.
- (a) the big boy is Peter. (c) a big boy is Peter.  
(b) the big boy is a Peter. (d) a big boy is a Peter.
- 43 (a) Jane's looking at you and I. (c) Your looking at Jane and I.  
(b) I'm looking at you and Jane. (d) Jane and I am looking at you.
- 44 (a) That girl is some of my friends. (c) That girl is one of my friends.  
(b) That girl is me friend. (d) This girls are friends.

- 45 (a) This is Mr. Smith there. (c) That is the Mr. Smith there.  
(b) This is the Mr. Smith here. (d) That is Mr. Smith there.
- 46 (a) Is that table big brown? (c) Is that big brown table?  
(b) Is that big table brown? (d) Is brown that big table?
- 47 (a) Mary can swim tomorrow. (c) Mary tomorrow swim.  
(b) Mary she can swim tomorrow. (d) Mary can tomorrow swim.
- 48 (a) Some girls are listening to the old mens. (c) An old man is listening to the girl.  
(b) An old men are listening to the girl. (d) The old man are listening to a girl.
- 49 (a) Listen to he and he's sister! (c) Listen to he and his sister!  
(b) Listen to him and his sister! (d) Listen to him and he's sister!
- 50 (a) Who now in Osaka lives? (c) Who in Osaka now live?  
(b) who live now in Osaka? (d) Who lives in Osaka now?

<<< THAT IS THE END OF THE TEST>>>