

# Implementation of Team Teaching in an ESP Program and the Investigation of its Effectiveness on Students of Computer science ESP Vocabulary Achievement

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## Abstract

This paper presents an experiment concerning the contribution of team teaching to the better understanding of ESP terminologies. Accordingly, 40 learners majoring in computer science were selected as the participants of this study. Randomly they were divided into two experimental and control groups. While the instructional material was the same for both groups, control group was taught through team teaching. At the end of the experiment, the findings were compared through t-test. Results after the analysis of the data indicated that those who were taught through team teaching gained more ESP vocabulary than those who were taught conventionally.

## Introduction

Team teaching as a form of teacher collaboration has long been implemented in education at all levels. Sometimes synonymous with co-teaching or collaborative teaching, it features teachers' collective efforts that aim to improve teaching quality as well as students' performances. Many researchers have offered various definitions of team teaching: for example, Davis (1995) regarded team teaching as "all arrangements that include two or more faculty in some level of collaboration in the planning and delivery of a course". Not surprisingly, being

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amenable to different interpretations, the label of team teaching has been custom-tailored to suit diverse instructional purposes, functions, subjects, and educational settings.

The logistics of team teaching seem as simple as bringing two teachers together to work in the same classroom; yet, collaboration between two teachers is indeed a complicated phenomenon. In fact, a main focus of investigation by researchers in education has been the exploration of team teachers' interactions inside and outside the classroom. Researchers have attempted to disentangle issues that pose an impediment to team teaching so as to overcome obstacles that can damage teachers' collaborative relationships.

Although a myriad of definitions of team teaching may create some confusion, which Anderson and Speck (1998) called "a cacophony of voices", the literature on team teaching has confirmed the positive effect of team teaching on student learning (Anderson & Speck, 1998) and teachers' ongoing development (Bailey, Curtis, & Nunan, 2001; Eisen, 2000; Murata, 2002). Students taught collaboratively by two teachers have more access to teachers' assistance through a variety of teaching methods and materials, and opportunities for class participation (Anderson & Speck, 1998).

Various forms of teacher collaboration can serve as an important catalyst for teachers' ongoing development and school change (Welch, 1998) because teachers engage in ongoing dialogues and interactions involved in the intense collaborative work. The social constructivist view of learning provides an explanation for the development of knowledge; rather than occurring in isolation, learning takes place in social environments and situated in social activities. Learning from colleagues is therefore one strategic approach for teachers who pursue continuous development in their careers. An effective ESP teacher must possess a relevant background in the subject field, especially on some subjects totally different from English such as science and technology, so as to offer learners a successful and beneficial course. Despite the scarcity of experts with such a cross-disciplinary training, an ESP class can be conducted alternatively by team teaching. In this study, researcher elects to collaborate in ESP teaching between an experienced English teacher trained in language teaching and an instructor specializing in computer science.

### **Research Question**

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The following question is addressed in the present study:

1. Does team teaching, collaborative, enhance computer students' English achievement in an ESP program?

### **Research Hypotheses**

From the research question the following hypotheses were found:

1. There is a positive difference in English achievement between the control group and the experimental group under the treatment through team teaching in ESP program
2. There is negative difference in English achievement between the control group and the experimental group under the treatment through team teaching in ESP program
3. There is no significant difference in English achievement between the control group and the experimental group under the treatment through team teaching in ESP program

### **Literature Review**

Many researchers support the positive advantages of team teaching approach and its effects on learning. Johns and Dudley-Evans (1980) were two of the EAP teachers and researchers who found team teaching extremely useful in their study. Roth et al. (2002) considered co-teaching as an effective means of achieving deep learning of science concepts while learning alternative ways to teach the same subject-matter. Co-teaching also provides opportunities for new teachers to obtain greater opportunities of learning to teach. Eisen (2000) classified team teaching into eight team types based on central purposes of team formation as interdisciplinary or multicultural education, collaborative learning, community action and co-learning, action learning, specialized delivery, professional development, research, and writing. In the context of language education, teaching teams are most often constituted by teachers from different disciplines or different linguistic and cultural backgrounds.

ESP teachers are almost always teachers of English for General Purposes, and their switch to this field is sudden (Stevens, 1988). As Donna (2000) explicitly mentions, they get by with some basic guidelines and with a little help which ultimately proves inappropriate. Their task is to analyze students' needs, outline objectives, select and adapt teaching materials, design lessons,

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créate an adult-oriented learning environment, and assess students' progress (Schleppegrell, 1991).

Based on Little's (1990) typology, team teaching is at the end of the teacher collaboration continuum due to its closest interdependence among teachers, as teachers work together in the same classroom, sharing responsibilities of students' performance and implementing teaching activities together. This instructional practice is usually organized by policy makers or school leaders with different purposes.

According to Eisen (2000), "no two teams are exactly alike because they operate along a continuum representing countless variations in goals, team membership, and members' relationships". Sometimes team teaching is implemented to utilize teachers' diverse expertise to complement each other in order to achieve better quality of instruction; at others, it is implemented for training purposes to improve new teachers' growth. As close interactions between team teachers in the classroom provide teachers with opportunities to get exposed to different views and ways of teaching, team teaching is often associated with teachers' professional development in the workplace.

Eisen (2000) classified team teaching into eight team types based on central purposes of team formation as interdisciplinary or multicultural education, collaborative learning, community action and co-learning, action learning, specialized delivery, professional development, research, and writing. In the context of language education, teaching teams are most often constituted by teachers from different disciplines or different linguistic and cultural backgrounds. In a similar attempt to Calderón's (1995), Rueda and Monzó (2002) investigated the collaborative relationship between classroom teachers and para-educators, who shared the same ethnicity and native language with students mostly from low-income Latino communities and who were hired to assist teachers. The study took place in two large public elementary schools located in southern California, with thirty-two bilingual, Latino para-educators involved in the study divided into three groups according to the range of years of work experience. They were observed in eight to ten occasions when working with students, and were interviewed by the researchers.

Different from those teachers in Calderón's (1995) study who were offered opportunities to improve their teaching through team teaching practice, the para-educators in this study, as the researchers concluded, generally played three roles in the classroom: clerical support, directed teaching, and apprentice. Most of the responsibilities for the para-educators included doing some trivial work for the teachers or providing students with lessons that had already been designed by the teachers. There were few opportunities for the para-educators to learn teaching practice from the teachers as apprentice, and interactions between the teachers and the para-educators were scarce. Translations from Spanish to English were the most common source of input that the para-educators were asked to provide. The para-educators' suggestions about teaching practice and input of students' culture were not positively valued by the teachers. Limited interactions with the teachers and unequal power relationship prevented the para-educators from learning how to teach and pursuing teaching careers.

The researchers stressed that teachers' acknowledgement of para-educators' cultural and community knowledge is critical to helping para-educators make a better contribution to student learning. They also asserted that in order to promote para-educators' professional development, schools need to encourage collaboration between para-educators and teachers in the ways of allowing interactions and time for planning lessons by both groups. Besides, since power differences negatively affect the collaborative relationship, teachers and para-educators should be accountable to each other with regard to their respective roles.

To implement team teaching with a different purpose from those of the two studies just described, Roth, Masciotra, and Boyd's (1999) studied the collaborative practice used to facilitate teacher learning of novice teachers, in which a novice teacher's development through co-teaching with an experienced teacher in a 7th-grade science class was investigated. Grounded in hermeneutic phenomenology which is concerned with understanding lived situations of being-in-the-world, the researchers argued that co-teaching is an approach to helping the novice teacher acquire tacit dimensions of teaching.

In contrast to the gap between discourse about teaching learned at universities and the experience of actually teaching a classroom which the novice teacher experienced in a teaching alone situation, Roth et al. (1999) suggested that co-teaching provided the beginning teacher with abundant opportunities to “briefly step back, take time out from the responsibilities of developing the classroom conversation, and reflect-on – but with little delay relative to the action – the questions and interactions of the master teacher”. In other words, they found co-teaching to be a more preferable teaching practice than sending pre-service teachers into a classroom where the resident teachers let them work on their own.

## **Methodology**

### **Participants**

In this study, the addressed community was 40 undergraduate male and female students enrolled in the ESP course as a part of their major in computer science department at SAMA Vocational and Technical Training School, Mahshahr Branch. The department itself divided them into two intact classes. Randomly, one class will be selected as an experimental group which includes 20 students and the other as a control group which includes 20 students. The data collected from the subjects’ performance on the post-test and pretest are described in terms of mean ( $\bar{X}$ ), standard error of measurement (SEM), standard deviation (SD), and Levene's t-test, using the Statistical Package of Social Science (SPSS) program.

### **Instruments Used in Our Research**

The main instruments used in the present study were the following: The textbook which was *English for the students of computer* published in Iran. It was developed by Barani, and Rezaei and the publisher is the Rahnama Press (Barani, Gh., & Rezaei. S. H, 2011). The textbook contains twenty lessons which due to the shortage of time ten lessons was covered. The pretest worked as a proficiency test which determined the homogeneity of the students regarding the English language proficiency and an achievement test played the role of posttest to point out the would-be impact of co-teaching on the experimental group.

### **Design and Procedure**

A quasi-excremental design was exploited for the present study. Accordingly, Two intact English classes in the ESP context were used in the study. The first class comprised 20 students and was held on Tuesdays. It was the experimental class co-taught by a pair of teachers group in which an ESP teacher will teach technical terms and EFL teacher instruct general terms. The other class, considered as control group, included 20 students who came to the class on Saturday group in which just an EFL teacher will conduct the instruction.

The language proficiency of the control and experimental groups was assessed by a proficiency test. In the control group ESP lessons were instructed by just one teacher, EFL teacher, while in the experimental group, they were taught by two instructorsm both EFL and ESP teacher. These two teachers cooperatively co-taught the ESP lessons based on team teaching model which made the study distinguishable from the traditional view of teaching. Collaboration and consensus between co-teachers determined every issues of the teaching process. In short, these groups were worked with for 10 sessions; each session taking almost one hour and quarter.

### **Data Analysis**

The data collected from the subjects' performance on the post-test and pretest are described in terms of mean (X), standard error of measurement (SEM), standard deviation (SD), and Levene's t-test, using the Statistical Package of Social Science (SPSS) program.

### **Results and Discussion**

The aim of this chapter is to present the results of the quantitative analysis. Therefore, The preliminary descriptive statistics for the ESP vocabulary knowledge test(posttest) appears in the following Tables.

**Table 1. Descriptive statistics of posttest for the experimental and control groups**

Group	Test	N	Mean	SD
Experimental	posttest	20	50.8	2.37
Control	posttest	20	47.85	4.55

As displayed in Table 1, experimental group's performance in the posttest was better than those in the control group. It was also revealed that after the instructional treatment, the mean of the posttest scores for experimental group was 50.8, while for the control group it was 47.85. In the case of SD, for the experimental group, it was 2.37, whereas that of the control group was 4.55. So, the findings suggest that there was a difference between experimental and control groups after the treatment, collaborative teaching.

**Table 2. Results of t-test between Experimental groups and Control groups in Posttest**

Group	N	Mean	SD	t- value	Df	P
Experimental	20	50.8	2.37	2.56	38	0.014
Control	20	46.85	4.52			

**\*Significant at .05**

In order to compare the effectiveness of the collaborative teaching on ESP vocabulary leaning , Levene's t-test demonstrated in Table 2 indicated that the mean difference between the experimental and control groups' scores measured at the time of posttest was significant ( $t = 2.56$ ,  $p < .05$ ). The mean difference between the experimental group ( $M=50.8$ ) and control group ( $M=46.85$ ) was 3.95. This indicates that the experimental group who were under the treatment at the collaborative teaching gained more ESP vocabulary than the control group. Therefore, it can be claimed that this difference is due to the kind of instructional environment where the experimental group was taught there and this gives further evidence for accepting the first hypothesis and rejecting the other two hypotheses.

1. There is a positive difference in English achievement between the control group and the experimental group under the treatment through team teaching in ESP program.( accepted)
2. There is negative difference in English achievement between the control group and the experimental group under the treatment through team teaching in ESP program.(rejected)



3. There is no significant difference in English achievement between the control group and the experimental group under the treatment through team teaching in ESP program.(rejected)

## **Conclusion**

This study aimed at investigating the effect of collaborative teaching on ESP terminologies promotion in the field of computer . To this end, the following question was under consideration:

Does team teaching, collaborative, enhance computer students' English achievement in an ESP program?

To perform this research, subjects were randomly put in one control group and one experimental group and were assigned to one of the two following instructional conditions:

Experimental group was taught through the collaborative or team teaching, while Control group was taught traditionally. For data analysis, Levene's t-test was used. The calculated t-test proved that ESP vocabulary can be learnt better via collaborative teaching. The experimental group gained considerable amount of vocabulary than the control group. So, the computation and analysis of the t-test provided researcher with the judgment to reject the negative and null hypotheses of this study which stated that collaborative or team teaching would not significantly promote learners' ESP vocabulary knowledge. Results of this study indicated that teaching ESP courses through collaborative or team teaching at the university or instructional institutions might become a useful way for students to improve and facilitate their learning of ESP words. Based on the findings, one concludes that team teaching has much influence on the learning of computer ESP terminology.

## **Pedagogical Implication**

The current study may provide some support for the idea that collaborative teaching can have powerful effects on the learning of computer ESP terminology. Findings of this research paved the way for the acceptance of this belief. The major implication to be drawn from this

research is that students need to learn technical words through the collaboration between EFL and specialized teachers.

### **Suggestion for Further Research**

This study aimed to answer just one question: Does teaching ESP course via team teaching , collaborative teaching, enhance computer learners' ESP terminology?

However, another question may be raised as the follows:

1. In this study, only computer students were involved. It is suggested that learners of other majors participate in further studies.

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