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An Experimental Study of the Effect of Student Teams Achievement Divisions (STAD) on Vocabulary Learning of EFL Adult Learners

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An Experimental Study of the Effect of Student Teams Achievement Divisions (STAD) on Vocabulary Learning of EFL Adult Learners

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Abstract;

Student Teams Achievement Divisions (STAD) has been considered as an important cooperative learning strategy in progressive pedagogy. A number of studies have supported the use of STAD in different subject areas and in different socio-cultural contexts. However, it is still an under-researched area in countries like Saudi Arabia where English is taught as a Foreign Language. This quasi-experimental study was conducted in Unaizah Community College, Saudi Arabia. Both the experimental group and the control group were tested on 2000-word vocabulary test. A vocabulary test was prepared and administered by the researchers at the beginning of the experiment as a pre-test. The experimental group was taught with Student Teams Achievement Divisions (STAD) strategy whereas the control group was taught with traditional whole-class instruction method. The treatment was carried out for two weeks. At the end of the experiment, the same vocabulary test was re-administered as a post-test. Independent samples t-test was used to analyze the data using SPSS 21. Results showed that there was a significant difference between the experimental group and the control group in favor of the experimental group ($p=0.002 < 0.05$).

Key Words: Cooperative learning, EFL learners, STAD, vocabulary learning

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Introduction

English is taught as a Foreign Language (EFL) in Saudi Arabia and it is perhaps the only recognized foreign language in the kingdom. Arabic is the official language and the medium of instruction for all subjects even at the university level. Though English may be spoken in some EFL classrooms, it is hardly used in Saudi society. Though a wide range of majors now require at least an introductory course in English, it is still struggling to find the status of a living language and not to be treated as merely a subject.

Among some other reasons for Saudi EFL learners' poor performance in English, teaching methods are most commonly discussed and critiqued. According to Al-Seghayer (2015), EFL teachers in Saudi Arabia mostly use traditional methods of teaching. Grammar-translation is the most commonly used method in Saudi Arabia. Teachers translate some passages in students' native language—Arabic and write some words on the boards. The students are required to copy them and memorize their meanings. They presuppose that their students will learn new words on their own, without much guidance or explicit instruction. However, Al-Zahrani (2011) claims that such ineffective vocabulary instruction leads to low vocabulary achievement among Saudi EFL learners. Therefore, the students are incapable of improving their linguistic skills in general and their vocabulary in particular.

Vocabulary has long been considered as one of the major contributors to learners' performance in English as Foreign Language (EFL) learning. Vocabulary knowledge is at the heart of foreign language ability (Al-Masrai & Milton, 2012). It is an increasingly important area in applied linguistics. According to Al-Darayseh (2014), EFL learners with poor vocabulary are unable to comprehend a given passage. Highlighting the importance of vocabulary knowledge, Mahmoud (2014) argues that learners with poor vocabulary are unable to perform well in other areas of language as well. Therefore, the need of the hour is that EFL teachers should recognize that vocabulary has a pivotal role to play in second language (L2) learning and try to improve their learners' vocabulary.

Saudi EFL classrooms are vibrant in translations and rote-memorization. Student-student interaction is yet to be seen in Saudi EFL classrooms. If, by chance, there is any class activity, it is often in Arabic, unless the teacher requires students to do it in English and watches them carefully while they are performing it. All class activities are done individually and usually there is teacher's feedback at the end. The students have a very passive role in such teacher-centered instruction as compared to student-centered instruction. (Struyven, Dochy, & Janssens, 2010). They are hardly given any chance of peer feedback or peer correction. However, as Tiantong and Teemuansai (2013) point out; memorizing the course content would hardly work in the 21st century; new techniques will have to find their ways in classroom practices. It seems that teaching language in this century requires teachers to be literate and well-versed in the current methods of handling classes (Ali, Mukundan, Baki & Ayub, 2012). Thus Saudi EFL classrooms may see more student-centered teaching strategies in the time to come.

Lazarus (2014) argues that there should be awareness among teachers regarding the importance and implementation of peer tutoring and cooperative learning strategies. Keeping in

mind the low proficiency level of Saudi EFL learners, teachers should try to create more student-centered classrooms. Student Teams Achievement Divisions (STAD) is a simple and flexible strategy that can be applied to a variety of subjects in different classroom settings (Ishtiaq, Ali & Salem, 2015). It is a strategy of Cooperative Learning (CL) that may become a possible alternative to teacher-centered instruction (Haydon, Maheady & Hunter, 2010). STAD was developed by Slavin (1995, as cited in Van Wyk, 2012) at John Hopkins University. Since then, it has been used in a variety of subjects and on a variety of students from grade two to college level students (Tiantong & Teemuansai, 2013). However, a great deal of previous research was conducted in native English speaking countries and STAD is still under-researched in EFL contexts (Alijanian, 2012). Saudi Arabia is one such example where cooperative learning strategies may be given a chance to perform their role in improving EFL learners' linguistic proficiency.

Low vocabulary achievement of EFL learners in Saudi Arabia is one of the major concerns of EFL teachers in Saudi Arabia. According to Guduru (2014), Saudi EFL learners neither have sufficient vocabulary nor are aware of vocabulary learning strategies. Nosidlak (2013) argues that vocabulary retention is especially important for university students who are expected to know more words as compared to younger students. The students' lack of vocabulary to a certain level is especially felt when they reach university, where they are expected to have a comprehensive vocabulary level. Liton (2012) contends that a number of Saudi EFL learners do not have sufficient vocabulary at the college level. This may affect their overall language proficiency and hinder their progress in all areas of language. Alsaif & Milton (2012) point out that in a test held by the Ministry of Education (Saudi Arabia), learners recognized only 340 words out of a list of 2000. In such a meager situation, it is expected from EFL teachers in Saudi Arabia that they should find ways to help their learners build a large lexicon through different teaching strategies.

This experimental study investigates the effects of STAD— a strategy of cooperative learning on Saudi EFL adult learners' vocabulary achievement. The study suggests a shift from teacher-centered teaching to learner-centered strategies. New interventions and strategies might find their way in EFL classrooms. The focus of the study is, of course, learners, but teachers and policy makers may also equally benefit from this study. Owing to the lack of such studies in Saudi Arabia, significance of the current study may further be enhanced. Further studies may be carried out to examine the effect of this strategy on other areas of language, for example reading, writing and grammar.

Literature Review

2.1 Vocabulary Learning

Vocabulary learning has long been an issue for research in second language (L2) learning. According to Noor and Amir (2009), this area has been ignored by researchers from 1940s till 1960s; however, research in this area has grown a lot in recent years. Over the past two decades, the research on vocabulary has increased in volume (Al-Masrai & Milton, 2012). According to Crossley and Salsbury (2011), vocabulary competence of L2 learners is a crucial area of study both in practice and in theory. Learners without sufficient amount of vocabulary may not perform well in other areas of language as well. Vocabulary proficiency of L2 learners is of great importance to language acquisition and linguistic competence (Crossley, Salsbury,

McNamara, & Jarvis, (2011a). Therefore, it is expected that EFL learners should have sufficient vocabulary especially at college level.

Vocabulary is considered as very important aspect of L2 learning. Researchers have long held the view that vocabulary plays a vital role in second language learning (Alhaysony, 2012). Schmitt (2008) contends that students, teachers, materials writers and researchers all of them are convinced that vocabulary learning is essential for learning a second language. However, Schmitt (2008) continues, that both students and teachers are unsure of the best way of learning vocabulary. Researchers have been trying hard to find different aspects of vocabulary learning to help their learners improve their vocabulary. Vocabulary development has attracted many researchers in the field of Second Language Acquisition because it has a special role to play especially in those places where there is low language acquisition (Zheng, 2012). Since English is taught as a Foreign Language in Saudi Arabia and learners' language proficiency is not up to the desired level, vocabulary learning, therefore, has a special importance in Saudi context.

A considerable amount of literature has been published to show the importance of vocabulary in L2 learning. Vocabulary learning is important for improving all the four language skills (Ahmad 2012; Alhaysony, 2012); therefore, researchers have given special attention to it (Alhaysony, 2012). In recent studies, vocabulary has been given special importance with reference to reading ability. According to Woolley (2010), learners cannot comprehend a given passage because they don't have sufficient vocabulary. Wallace (2008) also concluded that learners found difficulty in reading because of their poor vocabulary. The learners' poor vocabulary may affect other areas of language proficiency as well. According to Ahmad (2012), vocabulary development is a prerequisite for EFL/ESL learners to enhance their proficiency in English. In Short, vocabulary learning is important to improve all areas of language proficiency especially in EFL contexts like Saudi Arabia.

2.2 Components of Cooperative Learning

According to Johnson, Johnson and Smith (2007), there are five components of cooperative learning-(i) positive interdependence, (ii) promotive interaction, (iii) individual accountability, (iv) social skills, and (v) group processing.

- (i) **Positive Interdependence:** Positive Interdependence means that everyone understands that they can achieve their academic goals if every member plays his/her role (Gillies, 2007). Individual's importance was seen in connection with his/her group. According to Wallestad (2010), positive interdependence means that there are clear academic goals before the students and they make sure that everyone understands the material to achieve their goals.
- (ii) **Promotive Interaction:** According to Johnson and Johnson (2009), promotive interaction occurs when individuals help each other to accomplish group goals. They argue that promotive interaction provides the students a chance to listen to one another, gives them help and support, and enhances motivation among the group members. Gillies (2007) calls this as face to face interaction. He points out that students work in small groups and see each other during discussions which enhances interaction among them. This important factor seems to be missing in some EFL classrooms.

- (iii) **Individual Accountability:** Individual accountability means that students understand that they are responsible for their contributions to the group. This is because of this sense of responsibility that there is no social loafing in the groups (Johnson & Johnson, 2009). Thus CL does not mean working in groups; it means working as a responsible member of a group. Johnson and Johnson (2009) argue that individual accountability guarantees personal responsibility, if there is no individual accountability there will be no personal responsibility. This is an important point in CL that shifts the responsibility of learning from teachers to learners.
- (iv) **Social Skills:** According to Johnson and Johnson (2010), students should have social skills required for group work which means that they should know how to behave when winning or losing a competition. Social Skills involve interpersonal and communicative skill needed to cooperate in a group discussion (Gillies, 2007). This component of CL is especially useful for helping and encouraging learners who are not very confident in communication. It is not possible that all students in a group can communicate well; therefore, social skills need to be developed among the students to work in their groups effectively (Wallestad, 2010).
- (v) **Group Processing** assesses the process of cooperative learning. It assesses the students' reflection on their progress; how well they are doing, what they should continue and what needs improvement (Johnson & Johnson, 2010). Instead of teachers' feedback, CL encourages learners to give feedback on their own progress. According to Wallestad (2010), the group members need to reflect on what went wrong or what remained successful in achieving their goals. This helps the learners evaluate their groups for any mistakes that they have done and learn from their mistakes.

2.2.1 Theoretical underpinning

This study is based on Slavin's (1995) CL model as it seems to be more comprehensive and more holistic. It depicts different theoretical approaches and shows how different components work together. It shows the relationship and interdependence of different components of cooperative learning mainly focusing on group goals based on individual learning of all group members. It presumes that motivation to learn and help and encourage others to do so activates cooperation among group members that enhances motivation (Slavin, 2010). The results on the teaching practices can be very positive as learners' language input perception would improve considerably.

Slavin (1995) argues that CL succeeds because it uses convergent tasks: group goals based on individual responsibility of all group members lead to increased learning achievement. He further elaborates his model and maintains that motivation drives the behavior and attitudes that foster group cohesion, which in turn facilitates the types of group interactions—peer modeling, equilibration and cognitive elaboration—that yield enhanced learning and achievement (Slavin, 2010). In the study at hand, STAD was used as a strategy of cooperative learning. The study investigated the effects of STAD on Saudi EFL learners' vocabulary achievement. Figure 1 explains this cooperative learning model adopted from Slavin (1995).

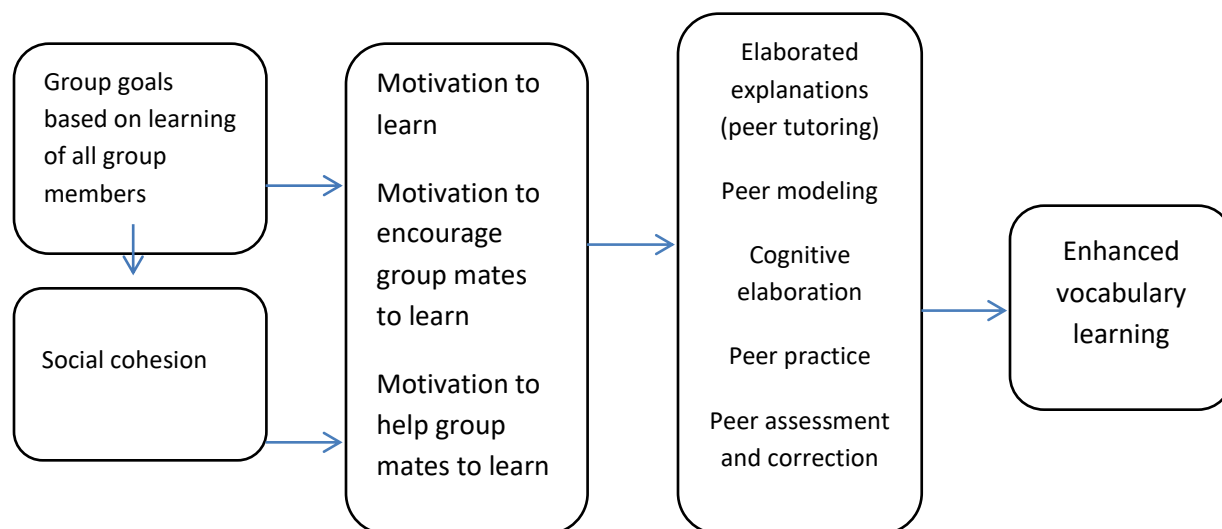


Figure Error! No text of specified style in document.1: Cooperative learning model (adoted from Slavin, 1995).

2.3 Student Teams Achievement Divisions (STAD)

Student Teams Achievement Division (STAD) is a structured learning strategy that was developed by Slavin (1995) at John Hopkins University (as cited in VanWyk, 2012). Students are assigned to small groups where they cooperate with one another to achieve a common academic goal. There are five steps of STAD-(i) heterogeneous groups are formed based on the learners' academic achievement (ii) the teacher gives the instruction (iii) learners help one another to understand the material given by the teacher in the form of worksheets (iv) learners take individual quizzes and are not allowed to help one another (v) high scoring teams are rewarded with some kind of certificate or their names are written on the bulletin board (Slavin, 1995).

There are many practical reasons for choosing STAD as a cooperative learning strategy. The most important reason for choosing STAD, however, is that it inherits almost all the elements of Slavin's (1995) CL model. Cohesive groups are the first requirement of the CL model. STAD also lays its foundation on building a strong bond among the members of heterogeneous groups. In STAD, learners teach one another and develop a strong relationship among them (Slavin, 1992). The learners in STAD cooperate with one another in order to achieve common academic goals. They tutor one another to prepare for individual quizzes (Alijanian, 2012). This develops cooperation and interaction among the learners. Therefore, STAD was seen as a strategy that incorporates all the elements of CL and thus may help improve learning-teaching situation in Qassim University.

Like other CL strategies, motivation is one of the main elements in STAD. According to Alijanian (2012), STAD has a strong link with motivation and has contributed a lot to motivate students. Motivation to work and win for their teams, play an important role in STAD. Slavin (1995) argues that team rewards enhance both intrinsic and extrinsic motivation. When learners know that their groups will be rewarded on their performance, they not only work harder by

themselves, but also they encourage other group members to put their efforts. Warawudhi (2012) is also of the opinion that STAD has a positive effect on learners' attitudes and motivation. Thus STAD stands out as a prominent CL strategy that may help EFL learners in improving their language proficiency.

Peer practice which is the heart of STAD is another important element of CL model. Learners are given an opportunity to practice English in real-life situations with their peers of the same age and of different proficiency level. This develops student-student and student-teacher interaction in the class (Warawudhi, 2012). Learners will be at comfort if they discuss something with their group members and then with their teachers. Chim (2015) also believes that STAD not only gives socialization experience to learners, it also develops interaction patterns between high and low achievers which are yet to be discovered by researchers. This is, perhaps, what Qassim University EFL learners require. According to Mohseny, and Jamour, (2012), STAD enhances interaction among the students, improves communicative and interpersonal skills and develops self-esteem and self-confidence. Peer practice may be the first step towards enhancing Saudi EFL learners' self-esteem, self-confidence and ultimately developing their linguistic and communicative competence.

2.4 Points of Convergence between CL and Vocabulary Learning

Cooperative learning strategies engage students in different tasks that help them learn in a congenial atmosphere. This engagement is helpful in learning a new language. If it is about learning new vocabulary, there seems to be a connection between cooperative learning and vocabulary learning. Schmitt (2008) argues that learners' vocabulary can be fostered by enhancing their engagement with target vocabulary. Learners' engagement is the basic tenet of cooperative learning strategies. Basic task for students, teachers and materials writers in vocabulary learning is to promote more engagement (Schmitt, 2008). Thus, involvement of students in different class activities seems to be the basic point of convergence between CL and vocabulary learning.

Cooperative learning promotes active learning in class. According to Schmitt (2008), learners need to be active for a long period of time in order to reach a substantial vocabulary size. The more they are involved in learning new vocabulary, the more they learn. In their Depth/Levels of Processing Hypothesis, Craik and Lockhart (1972) assert that learners remember more if they pay more attention to a lexical item. Hulstijn and Laufer (2001) Involvement Load Hypothesis strengthens this view. According to this hypothesis, learners need i.e. require the meaning of the new word, search its meaning and come to the evaluation stage where they evaluate the word for comparison or to use it in that particular context. This suggests that more involvement, more attention and more manipulation of the target vocabulary can enhance a learner's vocabulary. These elements are well reflected in cooperative learning strategies.

Motivation is another key element in cooperative learning. Cooperative learning strategies enhance motivation that in turn enhances learning (Slavin, 1995). The relationship of vocabulary learning and motivation has also been established by many researchers. According to Schmitt (2008), students will not be able to master new vocabulary unless they are motivated to learn and change their attitudes towards learning. Therefore, it seems that engagement in vocabulary learning, motivation for learning and CL strategies are part and parcel of each other. They are so much intertwined that it will be hard to entangle them.

2.4 Previous Studies on Vocabulary Learning

A considerable amount of literature has been published about the vocabulary learning in L2 that shows the importance of this area of research. Vocabulary learning is important for improving all the four language skills (Ahmad 2012; Alhaysony, 2012); therefore, researchers have given special attention to it (Alhaysony, 2012). In recent studies, vocabulary has been given special importance with reference to reading ability. According to Woolley (2010), learners cannot comprehend a given passage because they don't have sufficient vocabulary. Wallace (2008) also concluded that learners found difficulty in reading because of their poor vocabulary. Learners' poor vocabulary may affect other areas of language proficiency as well. In Short, vocabulary learning is important to improve all areas of language proficiency and its importance is enhanced many folds in an EFL context.

Ahmad (2012) conducted a study to distinguish between intentional and incidental vocabulary learning in Saudi Arabia. Twenty students were divided into two equal groups. Both of the groups took a standard confirmation test and a vocabulary test. After a week, final test was administered. One group was requested to attempt intentional and the other was requested to attempt incidental vocabulary. The findings revealed that incidental vocabulary learning group outperformed the intentional vocabulary learning group. The author concluded that incidental vocabulary technique is better than the intentional method of teaching. However, the study had only 10 participants in each group. Secondly, the participants were from different professional courses and not from English majors.

Al-Darayesh (2014) investigated the impact of explicit/implicit vocabulary strategies on Saudi students' vocabulary and reading comprehension. The study utilized the pre-test post-test quasi-experimental design. Results showed a significant difference between the experimental and the control group in favor of the experimental group. However, participants in this study were not majoring in English. Secondly, two different instructors taught the experimental and the control group which raises some questions about the internal validity of the study.

Baniabdelrahman and Al-shumaimeri (2013) studied the strategies used by Saudi EFL students to determine the meanings of English words. It was a survey study with pre and posttest of vocabulary. The authors concluded that Saudi students are weak in guessing the meanings of unfamiliar words. They further explained that the students are not taught the strategies to guess the meanings; instead the teachers translate the words in Arabic or tell the students to use their dictionaries. However, the authors themselves directed the students to write the meanings of the words in Arabic in the pre-test. Secondly, here again, the authors selected non-English majors for their study.

Bilen and Tavit (2015) conducted a study of the effects of CL strategies on vocabulary skills of 4th graders in Turkey. The study aimed at finding the attitudes of the experimental group towards the CL. The findings revealed that the experimental group significantly outperformed the control group on the post-test. The authors concluded that CL strategies have positive effects on students' vocabulary skills. However, participants were school students. Secondly, only 48 students participated in the study.

Pan and Wu (2013) researched the effect of cooperative learning on reading comprehension and motivation of EFL learners. This quasi-experimental study had 44 students in the experimental group and 34 in the comparison group. The experimental group was taught with reciprocal cooperation learning (RCL). The findings indicated that students in the cooperative learning group outperformed students in the traditional learning group in reading comprehension in all the three achievement tests. Motivation scale also showed a significant difference in favor of the experimental group. However, the participants were not from English majors; they belonged to different departments.

Dabaghmanesh, Zamanian, and Bagheri (2013) investigated the effect of cooperative learning on Iranian undergraduate students' English language achievement. This quasi-experimental study used the pre-test post-test design. Results indicated that cooperative learning group significantly outperformed the traditional teacher-fronted group. However, the authors did not explain which cooperative learning strategy or strategies were used in the study. They explained that some cooperative learning methods were used but they only mentioned jigsaw. Secondly, here again, participants were not majoring in English.

Alijanian (2012) studied the effect of STAD on English achievement of Iranian EFL learners. The study lasted for eight weeks. The experimental group was taught using STAD whereas the control group was taught using traditional method of teaching. The results indicated that there was a significant difference between the experimental group and the control group in favor of the experimental group at 0.001 level. Both the inter group and the intra group comparisons revealed a significant gain in favor of the experimental group. However, the participants in this study were junior high school students.

The studies discussed above reveal that a considerable amount of literature has been published on vocabulary learning. However, majority of the previous studies focused on dichotomy of vocabulary—incidental/intentional vocabulary (Ahmad, 2012), explicit/implicit vocabulary (Al-Darayesh, 2014) and receptive/productive vocabulary (Zheng, 2012) or finding the strategies used by students to guess the meanings (Baniabdelrahman & Al-shumaimeri, 2013). Moreover, a large number of studies focused on non-English majors (Ahmad, 2012; Al-Darayesh, 2014; Baniabdelrahman & Al-shumaimeri, 2013; Pan and Wu, 2013; Dabaghmanesh, Zamanian, and Bagheri, 2013) who may have different outlook than English majors. In addition, majority of these studies primarily focused on the strategies of vocabulary. There are hardly some studies that investigated how to use different teaching strategies to give students an opportunity to practice the target vocabulary. In addition, some studies have weak description of CL strategies (Dabaghmanesh, Zamanian, & Bagheri, 2013) while some studies used very small sample size (Ahmad, 2012; Bilen & Travil, 2015) and thus were unrepresentative of the population they claimed to represent.

The current study investigates the effect of STAD on vocabulary learning of EFL adult learners. It focuses on English majors and uses comparatively larger sample size.

Hypotheses:

The following null hypotheses were formulated:

- H_{01} : There is no significant difference in vocabulary achievement between the mean scores of the cooperative learning group and that of the traditional learning group on the post-test.
- H_{02} : There is no significant difference in vocabulary achievement between the mean scores of the cooperative learning group on the pre-test and that of the same group on the post-test.
- H_{03} : There is no significant difference in vocabulary achievement between the mean scores of the traditional learning group on the pre-test and that of the same group on the post-test.

Methodology

This section presents information on research design, treatment, and the instrument used in this study.

3.1 Research Design

The study used a quasi-experimental pre-test and post-test control-group design (Ary, Jacobs, & Sorensen, 2010; Creswell, 2009). Two intact groups of zero semesters were selected for the study. The groups were randomly assigned to either the experimental group or the control group by tossing a coin (Ary, Jacobs, & Sorensen, 2010). A standard confirmation test was administered at the beginning of the experiment to find out whether the two groups were equal with reference to their vocabulary level. Schmitt, Schmitt and Clapham (2001) test at 2000 word level, version 1 and 2 (combined) were administered at the beginning of the study as the standard confirmation test. The test contained 36 items. The original test (both versions 1 and 2) aimed at testing receptive vocabulary. However, this test combined both receptive and productive vocabulary. In addition, it had equal number of adjectives, verbs and nouns (12 each). Question 1 asked the students to match the words with their meanings and question 2 required them to complete the sentences. Both of the groups were found equal at the beginning of the treatment ($p = 0.84 > 0.05$). Kuder Richardson-20 was used to find out the reliability of the standard confirmation test and the vocabulary test. The reliability of the standard confirmation test was 0.90 whereas reliability of the vocabulary test was found to be 0.96.

The experimental group was taught with the cooperative learning strategy—STAD whereas the control group was taught with the traditional teacher-fronted whole class instruction for two weeks. “Reading and vocabulary building” (a subject of the curriculum) was taught by the same instructor- one of the researchers, to both of the groups. The same text book was used to teach both the groups. A pre-test was administered to both of the groups at the beginning of the experiment. After administering the pre-test, the treatment was carried out for two weeks. The first two chapters were covered during this period. The thematic vocabulary taught in these chapters is about cities and shopping. Both of the groups were taught in the morning sessions. Both of the groups had their classes in the same building and were provided with air-conditioner, multimedia and white board facilities. The number of lectures was also the same for both of the groups (5 hours per week). At the end of the treatment, the same vocabulary test was re-administered as a post-test to both of the groups.

3.2 Population and Sampling

Students in their zero semesters in Unaizah Community College (Qassim University, Saudi Arabia) volunteered to participate in the study. All these students were Saudi citizens. Though students from other nationalities are allowed to study at Qassim University, there are usually no foreign students in the college. Their first semester is termed as zero semester as the students are promoted to level 1 (semester 1) after passing zero semester exams in order to

complete their bachelor's degree in English. The zero semester is also known as intensive course because students are required to pass five subjects with 25 contact hours per week.

The experimental group comprised 33 students, whereas the control group comprised 32 students. All participants were male because of the gender-segregation policy at all levels in education system in Saudi Arabia. The classes are usually heterogeneous having high, average and low English proficiency levels of students. Before joining the intensive course, students study English in their schools for eight years from grade five to grade twelve (5th primary to secondary school). They get admission in colleges and universities after passing the secondary school examination. There is no other requirement for getting admission in any of the departments including English department.

The study was conducted in Unaizah Community College which is a branch college of Al-Qassim University. It is located in Unaizah- a small town in Al-Qassim province, Saudi Arabia. Qassim province is considered as a conservative Muslim society that is trying to adopt modern education and new technology while preserving its culture and Islamic values at the same time.

3.3 Instructional Treatment

The experimental group was taught using Student Teams Achievement Division (STAD). After the introduction and warm up, instruction was given to the students. They were divided into teams of fives and sixes ($5+5+5+6+6+6=33$) comprising high, average and low achievers based on their scores on the pre-test. Students were asked to help one another to understand and answer activities given in the textbook. At the end of the class, the students were given individual quizzes. The instructor collected worksheets and compared their scores with the previous scores. Individual scores were accumulated and contributed to their team scores. At the end of the week, the high scoring team was announced and their names were written on the bulletin board.

a. The CL Group

The CL group was taught using Student Teams Achievement Division (STAD). STAD was first developed by Robert Slavin in 1995 (as cited in Warawudhi, 2012). Using Slavin's guidelines, the following steps were carried out:

1. After the introduction and warm up, instruction was given to the students.
2. The students were divided into teams of six members each, comprising high, average and low achievers based on their scores on Standard confirmation test and pre-test. They were assigned different roles—material monitor, recorder, coach, checker and reflector (Kagan, 2009). Their roles were rotated for different activities; however, they remained in the same teams throughout the treatment. Table 1 explains the students' roles and their responsibilities in their groups.
3. At the end of the class, students were given individual quizzes similar to the activities they had practiced in the textbook.
4. The quizzes were collected and the students' scores were compared with their previous scores.

5. Individual scores were accumulated and contributed to their team scores. At the end of the week, high scoring teams were announced and their names were written on the bulletin boards to acknowledge the students' efforts which may enhance their motivation.

Table 1 *Cooperative Role and Social Skills*

Cooperative Roles	Responsibilities
Material monitor	Distributed the material
Recorder	Recorded ideas
Coach	Helps team-mates learn the material
Checker	Made sure everyone in the team had mastered the material
Reflector	Reflected on the progress of his team

Source: Kagan and Kagan, 2009.

Learners in the CL group were given some orientation of how to work in CL groups. As this was a new experience for the students, the instructor explained to them what they were actually required to do in the groups. They were later on divided into heterogeneous groups according to their score on the standard confirmation test and the vocabulary test. The students who scored 90% or above on the standard confirmation test and pre-test were considered as high, those who score 60% or above were considered as average and those who scored less than 60% were considered as low scorers (according to the university grading system). Their roles were explained to them and they were told that they would be responsible for playing different roles when they would be asked by the instructor.

The students were arranged in semi circles so that every student could see the board and the instructor. They were encouraged to play their roles and were monitored during different activities. Though they remained in the same teams, they were asked to rotate their roles. During the activities, the instructor took round and offered his help when and if needed. The students were encouraged to play their roles and exchanged their questions and ideas. They helped one another to answer the exercises in their books and the worksheets. At the end of every activity, the instructor gave his feedback.

b. The Control Group

Learners in the control group remained in their seats for the entire intervention time. They followed the instructor's instructions and worked on different tasks individually. The instructor gave his feedback at the end of the every activity. The students wrote their answers in their notebooks.

The TL group was taught with traditional teacher-fronted instruction also known as whole class instruction. First three minutes were given for introduction and warm up. The target vocabulary was taught using a strategy known as meaning, form and pronunciation strategy. New words were written on the board one by one and their meanings were elicited from the students. Then, 'form' i.e. part of speech were elicited. Finally, the students were asked to practice saying the words individually and as a whole class. The students worked individually and practiced the exercises given in their text books. This whole process took 38 minutes while recapitulation took another 4 minutes.

3.4 Data Collection

Data was collected during the second semester of the academic year 2014-2015. A vocabulary test, prepared by the researchers, was used as a pre-test and later as a post-test to find out if there was any difference between the experimental and the control group with reference to their vocabulary. The vocabulary test comprised 40 items of one mark each. Each correct item was given one mark. No mark was given to the item where more than one choice was circled. Minor spelling mistakes were counted as correct giving a benefit of doubt to the participants. The test was marked by the researcher and was rechecked by two fellow colleagues.

The vocabulary test used as a pre and post-test covered the first four chapters of the students' textbook-Interactions Access by Hartman, Mentel, and Motala (2007). Question number 1 (complete the sentences) and question number 3 (fill in the blanks) attempted to measure active vocabulary. Ali (2012) argues that completing the sentences and filling in the blanks assess the active vocabulary of the learners as they test words in context. Question number 2 'Match with the opposite' tried to measure passive vocabulary. As Mokhtar et al. (2010) point out that matching questions are an attempt to measure the learners' passive vocabulary. Question number 4 is a multiple choice question which also assessed the learners' passive vocabulary (Ali, 2012). Kuder Richardson -20 was used to calculate the reliability of the vocabulary test. The reliability of the vocabulary test was found to be 0.96. After the treatment, the same test was re-administered as post-test. The data was analyzed using SPSS 21. Independent Samples t-test was used to compare the means of the two groups.

Results and Analysis

The following findings emerged from the statistical analysis of data. Table 2 shows the results of the independent samples t-test between the experimental and the control groups after the treatment. As mentioned above, both the groups were found equal at the beginning of the treatment ($p = 0.84 > 0.05$).

Table 2: Result of independent-samples t-test of the post-test comparing the experimental and the control groups.

Treatment		N	Mean	St. D	t	Sig
STAD	Post-test Experimental	33	23.58	11.05	3.29	.002
Whole class instruction	Post-test Control	32	14.90	10.15		

Table 2 illustrates the result of the independent samples t-test of the experimental group and the control group on the post-test. Comparison of the experimental group and the control group on the post-test revealed that there was a difference between the two groups in terms of vocabulary. The mean score of the experimental group (23.58) was higher than the mean score of the control group (14.90). This difference was significant at 0.05 level ($p = 0.002 < 0.05$). Therefore, it can be concluded that there is a significant difference between the mean scores of the experimental group and that of the control group on the post-test in terms of vocabulary.

Table 3: Results of Independent-samples t-test of experimental group on the pre-test and the post-test

Treatment	N	Mean	St. D	t	Sig
STAD Pre-test	33	16.78	6.26	-3.01	.004
Post-test	33	23.58	11.05		

Table 3 illustrates the results of the independent samples t-test of the experimental group on pre-test and post-test. Comparison of the pre-test and post-test of the experimental group by applying statistical analysis revealed that there was a difference between the pre and post-test scores of the experimental group in terms of vocabulary. The mean score of the experimental group on the post-test (23.58) was higher than the mean score of the same group on the pre-test (16.78). This difference was significant at 0.05 level ($p = 0.004 < 0.05$). This means that there is a significant difference between the mean scores of the experimental group on the pre-test and that of the same group on the post-test in terms of vocabulary.

Table 4: Results of Independent-samples t-test of the control group on the pre-test and the post-test

Treatment	N	Mean	St. D	T	Sig
Whole class instruction Pre-test	32	12.06	6.90	-1.31	.195
Post-test	32	14.90	10.15		

Table 4 shows the results of the independent samples t-test of the control group on pre-test and post-test. Comparison of the pre-test and the post-test scores of the control group by applying statistical analysis showed that there was a very small difference between the pre-test and post-test scores of the control group. However, the difference between the mean scores of the pre-test (12.06) and that of the post-test (14.90) was not significant at 0.05 level ($p = 0.195 > 0.05$). This means that there is no significant difference between the mean scores of the control group on the pre-test and that of the same group on the post-test in terms of vocabulary.

Discussion

The post-test scores of the experimental group and the control group indicated that there was a significant difference between the two groups. The experimental group outperformed the control group in vocabulary learning on the post-test. The difference between the mean scores of the experimental and the control group was significant at 0.05 level.

H_{01} : Table 1 above revealed a significant difference between the mean scores of the experimental group and that of the control group in vocabulary learning on the post-test in favor of the experimental group. Therefore, the null hypothesis “there is no significant difference in vocabulary learning between the mean scores of the experimental group and that of the control group on the post-test” was rejected. The students in the experimental group performed better than those in the control group in terms of vocabulary. The result is in line with those reached by Alijanian (2012), Khan, Javaid and Farooq (2015), Tiantong and Teemuangsai (2013), Wang

(2012), and Zarei (2012) that showed that there was a significant difference between the students using cooperative learning strategy and those using the traditional method.

Ho₂: Table 2 above showed a significant difference between the means scores of the experimental group on the pre-test and that of the same group on the post-test. Thus the null hypothesis “there is no significant difference between the mean scores of the experimental group on the pre-test and that of the same group on the post-test in terms of vocabulary” was rejected. The experimental group students on the post-test performed better than they did on the pre-test. This result is supported by the study of Alijanian (2012), Marzban and Alinejad (2014), Pan and Wu (2013) and Wang (2012) that showed that cooperative learning had positive effects on students’ achievement.

Ho₃: Table 3 showed no significant difference between the mean scores of the control group on the pre-test and that of the same group on the post-test. Thus the null hypothesis “there is no significant difference in vocabulary learning between the mean scores of the control group on the pre-test and that of the same group on the post-test” was accepted. The control group students on the post-test performed no better or worse than they did on the pre-test in terms of vocabulary. This result is in line with the ones reached by Alijanian (2012) and Pan and Wu (2013) that showed that control group did not show a significant improvement in achievement on the post-test.

The results of the present study are consistent with previous studies Alijanian (2012), Marzban and Alinejad (2014), Khan, Javaid and Farooq (2015), Pan and Wu (2013), Tiantong and Teemuangsai (2013), Wang (2012), and Zarei (2012). All these studies concluded that CL had positive effects on students’ achievement. Students perform better when they are taught with CL. It develops social cohesion among the students that may enhance motivation that ultimately improve learning. This is what Slavin (1995) suggested in his CL model that CL enhances motivation and thus learning is enhanced.

Conclusion

From the above discussion, it can be concluded that application of CL is effective in enhancing Saudi EFL learners’ vocabulary. The students in the experimental group significantly outperformed the students in the control group on the post-test in terms of vocabulary achievement. Moreover, the experimental group significantly improved its own score on the post-test as compared to the pre-test on vocabulary achievement. On the contrary, TL group could not show significant improvement in vocabulary on the post-test. Therefore, it can be concluded that CL has positive effects on vocabulary learning of EFL adult learners.

The components of cooperative learning—positive interdependence, promotive interaction, individual accountability, social skills and group processing are highly motivating because they encourage learners to work hard, attend classes regularly and put efforts to help one another to achieve common academic goals. These components may have changed a passive teacher-centered classroom into a lively student-centered one. Learners cooperated with their group members to compete with other groups; thus they learnt intra-group cooperation and inter-group competition at the same time. They recognized that their success depended on one another, therefore; they tried to help one another to attain victory for their teams. High achievers became

responsible for helping low achievers who in turn felt confident with their team-mates' support. Thus, Saudi EFL learners may be more motivated and perform better if the CL strategies are applied in their true soul.

Saudi EFL classes are usually heterogeneous that may be seen as an opportunity for using different CL strategies. Small heterogeneous teams of five-six members may produce better results as compared to individual whole class instruction. Learners may concentrate more while working in cooperative groups due to their peers' support as compared to working individually where it is easy to lose concentration. However, Alijanian (2012) argues that individual tasks have their own importance in education and they should not be overlooked altogether. Therefore, it will be safe to conclude that CL should be used as an alternative strategy and not as a replacement for all the other teaching strategies.

This study was conducted to investigate the effect of STAD on Saudi EFL learners' vocabulary. Though the study was conducted for two weeks, it showed some positive results on Saudi EFL learners' vocabulary. If STAD and other CL strategies are used in other courses as well, Saudi EFL learners may benefit more. However, time management, students' willingness to work with other students and teacher training are some of the issues that instructors should consider while applying CL strategies. The students' willingness to work with others should be specially considered as some students may perform better while working individually. In short, we can conclude that STAD has positive effects on Saudi EFL learners' language proficiency. Therefore, future researchers may try to find the effects of STAD on other areas of language learning, for example, writing, grammar, listening and speaking.

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