



# The Comparative Effect of Using Competitive and Cooperative Learning on the Reading Comprehension of Introvert and Extrovert EFL Learners

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Doi:10.7575/aiac.all.v.5n.4p.206

Received: 20/06/2014

URL: <http://dx.doi.org/10.7575/aiac.all.v.5n.4p.206>

Accepted: 10/08/2014

## Abstract

This study was an attempt to investigate the effect of two types of learning, competitive and cooperative, on the reading comprehension of introvert and extrovert EFL learners. To this end, 120 learners studying at Marefat English Language Institute in Tehran, Iran were selected, after taking a Preliminary English Test (PET), to participate in this quasi-experimental research. The participants also answered the Eysenck Personality Inventory (EPI) to categorize them into two personality types of introverts and extroverts. Therefore, there were four subgroups: 30 introverts and 30 extroverts undergoing the cooperative learning treatment, and 30 introverts and 30 extroverts experiencing the competitive learning treatment. The reading part of the PET was administered as the posttest of the study after each group was exposed to the treatment for 18 sessions in seven weeks. A two-way ANOVA was run on the collected data in the posttest of four groups. The results revealed that while learners generally outperformed in the competitive setting compared to the cooperative one, the extrovert was better off receiving cooperative instruction. Moreover, introverts excelled extroverts in the competitive group. However, there was no difference between the two personality groups in the cooperative situation.

**Keywords:** competitive learning, cooperative learning, extrovert, introvert, reading comprehension

## 1. Introduction

Reading is a later acquired skill among the other three skills. As Grabe (2002) stated, we were never born to read because human being invented reading only few thousand years ago. Therefore, skills such as listening and speaking are developed much sooner than reading and writing. However, when reading was activated, people read for different purposes. For instance, some read for pleasure and find it interesting which is called extensive reading, and some read for specific and detailed information which is called intensive reading (Harmer, 2008).

One of the main purposes of reading is enhancing students' capability to read the words and grasp what they mean at the same time. In this sense, reading does not mean translating written symbols into corresponding sounds. As Barnett (2007) maintained, reading is seen "as communication, as a mental process, as the readers' active participation in the creation of meaning, as a manipulation of strategies, as a receptive rather than passive skills" (p. 71).

This objective will not be achieved unless students have purpose in mind out of their reading. Brown (2001) pointed out that, "efficient reading consists of clearly identifying the purpose in reading something in which you will know what you are looking for and can weed out potential distracting information" (p. 306).

In the recent decades, there was emphasis on different variables that have affected the field of teaching and students' reading comprehension. One of them is learner differences as every single student steps inside the class with different personality trait. Many experts and practitioners in the field agree that both the rate and the degree of success in L2 learning are influenced by individual learner differences and personality types (Ellis, 1994).

There have been several personality types in the realm of teaching research. Dornyei (2005) stated that, "the personality type that has caught the attention of experts in L2 research area is extroversion/introversion" (p. 26). Brook (2011) characterizes the introvert as a state of being wholly or predominantly concerned with or interested in one's own mental life. He added that extrovert is the act of being predominantly concerned with and obtaining gratification from what is outside the self.

In addition to the different personality types that impact L2 language learning, one cannot ignore the role of modality of learning. One established dichotomy, in this regard, is competitive and cooperative learning. Cooperative learning exists when students work together to accomplish shared learning goals (Johnson, Johnson, & Stanne, 2000). Each student can

then achieve his/her learning goal if and only if the other group members achieve theirs (Deutsch, 1962, as cited in Johnson, Johnson, & Stanne, 2000).

Cooperative learning is compared with competitive or individualistic learning. Competition is defined as the presence of a negative goal or reward interdependence (Johnson, Johnson, & Stanne, 2000).

Since the 1920s, there has been a great deal of research on the relative effects of cooperative, competitive, and individualistic efforts on achievement and productivity (Johnson, Maruyama, Johnson, & Nelson, 1981) but there was not any research considering the personality types within the different learning type settings. Therefore, in order to fill the gap in the literature, this study explored the comparative influence of practicing competitive and cooperative learning in the class to see how they can affect the reading comprehension of extroverts and introverts. In other words, the aim of the study was to find out the effect of two learning types (cooperative vs. competitive) and two personality types (introvert vs. extrovert) on the reading comprehension of the learners. In this regard, the following null-hypotheses were formulated:

**H01:** There is no significant difference between the effects of competitive and cooperative learning on introvert EFL learners' reading comprehension.

**H02:** There is no significant difference between the effects of competitive and cooperative learning on extrovert EFL learners' reading comprehension.

**H03:** Competitive learning does not have a significantly different effect on the introvert and extrovert EFL learners' reading comprehension.

**H04:** Cooperative learning does not have a significantly different effect on the introvert and extrovert EFL learners' reading comprehension.

## 2. Review of the Related Literature

### 2.1 Reading Comprehension

Different people use the term "reading" in different ways. However, no one single definition tells the complexity inherent in the ability to read (Grabe, 2002). Although writers structure texts for their given purposes, readers interpret what they read in order to arrive at their own construction of what the text means to them. Heilman, Blair, and Rupley (1998) defined reading as the active process of constructing meaning from written text in relation to the experiences and knowledge of the reader. Snow (2002) provided somehow similar definition by saying that "reading is a process of simultaneously extracting and constructing meaning through interaction and involvement with written language which entails three elements: the reader, the text, and the activity or the purpose for reading" (p. 11).

The nature of reading decides that understanding a text varies from reader to reader and that people may have different purposes for reading. Grabe and Stoller (2002) classified the reading purposes as follows: "Reading is for general understanding, for detailed understanding, for amount of information, for integrating information" (p. 11).

### 2.2 Competitive Learning

Competition is used for the purpose of evaluating the position of people in various tasks. Dettmer (2005) stated that if the purpose is selecting the one who carries out the task more efficiently, then it can really prove to be useful since it is needed in everyday life. Generally, there are two kinds of competitive goal structures that can be seen: (1) constructive, and (2) Destructive. The desired form of competitiveness, which is called constructive, is the one in which the winner tries to assist the loser by giving him/her some tips as to how they could achieve the breakthrough stage. Quite the contrary, in the destructive form of competitiveness, the winner does not help the loser in no way at all (Deutsch, Coleman, & Marcus 2006).

According to Johnson and Johnson (1999, as cited in Akinbobola, 2009), "competitive learning is that kind of learning in which the students have got to work against each other for the purpose on achieving a good grade. So one student should achieve a goal and another one is bound to fail. Thus, the competitive learning can be inter-personal or inter-group." (p. 3).

### 2.3 Cooperative Learning

Cooperative learning was not famous in the 1940s, 1950s, 1960s, 1970s and better to say it was actually ignored at that time. The reason why in those years people were not culturally ready to use cooperative learning was the social Darwinism which paid attention more to competition in the interpersonal way.

Ghefaili (2003, as cited in Norman, 2005) mentioned that "within the environment of cooperative language learning, the teacher should be cautious not to merely use the traditional type of language teaching which is teacher-centered; rather, a teacher should try to change his/her role from being a knowledge transmitter to a coach who monitors the learners' process of learning and at the same time facilitates the learners' understanding of the various materials presented to them" (p. 13).

### 2.4 Personality Traits

The field of psychology has been attempting to achieve two different and somewhat contradictory objectives from the early days of its existence. Dornye (2005) explained that the first one is to understand the big picture of the human mind and the second one is to explore the uniqueness of every individual's mind. The latter one has led to an independent

sub-discipline within the field that has traditionally been termed differential psychology but recently it is frequently known as individual difference research.

Therefore, many of the choices we make in our lives are absolutely related to the personality trait. As Deutsch, Coleman, & Marcus (2006) indicated, throughout the history, personality has always been referred to as the fate of people which is the character trait. This definition given earlier indirectly holds the view that many of the choices we make in our lives are absolutely related to the personality trait. This view was mostly held by writers giving credits to the notion of inevitability of the personality.

Individual differences in personality are important in predicting individuals' behavior in umpteen real world conditions (Eysenck, 2004). Traits represent implicit connection between noticeable behaviors and internal dispositions or preferences to act, these associations picture the individual's unchanging patterns of behavior and delineate differences between rather than within individuals, this in turn may lead to various types of feelings, thinking, and behaving in different ways and among different people (Chamorro-Premuzic, 2007).

The issue of personality types is as old as psychology. Boeree (2006) pointed that Eysenck original research found two main dimensions of temperament: neuroticism and extroversion-introversion

#### 2.4.1 Extroversion

The extroverted person has strong enough inhibition. Boeree (2006) said that when located in a situation accompanied by a traumatic stimulation, such as a car crash, the extrovert's brain inhibits itself, which means that it becomes numb, and so won't be able to remember all that had happened.

Sharp (1987) held that extroversion can be defined by believing that they are fully interested in the external objects, responsiveness, and a ready acceptance of external happenings. He also mentioned, they are flexible in a way that they can have effect on and at the same time be affected by events taking place around them and are tolerant of noise and crowd and also find it fascinating because their attention is mostly on their friends and the world they live in.

Comparing to introverts, extroverts are harder to condition and the consistency of their conditioned responses are less likely to be seen. Consequently, they were more likely to be impulsive and punishment does not prove to have any effect on their learning (Zuckerman, 2005).

#### 2.4.2 Introversion

Having an introverted personality points to the unwillingness of people in putting themselves forward in groups. Bergin (2006) stated that some people suffer early traumatic experiences that for example cause them to act in the background as a defense mechanism, for example and there are many different possibilities.

Passing the time with other people is a draining procedure for the introverts so they usually get their energy from within. They believe they wear themselves out if they pass their time with activities which involve other people's participation; this feeling is mostly accompanied with a sense of emptiness (Pawlik-Keienlen, 2007).

In comparison with extroverts, the introvert has weak inhibition, in case of trauma such a car crash, their brains don't protect them fast enough, and so they won't forget easily. Instead, they are highly alert and learn well, and so remember everything that happened (Boeree, 2006).

Naik (2010) put that some psychologists do suggest that being introvert to an extent especially when it interferes with your day to day activities can be referred to as a personality disorder.

### 3. Method

#### 3.1 Design

This study dealt with comparing two types of learning, namely, competitive and cooperative, and their effects on reading comprehension of introvert and extrovert EFL learners. In this regard, a non-randomized pretest-posttest comparison groups design as one of the quasi-experimental research designs was employed. The learning type and personality type were two independent variables and the reading comprehension was the dependent variable of this study.

#### 3.2 Participants

To fulfill the objectives of this study, 120 male intermediate EFL learners with the age range of 16-35 studying at the Marefat Language School in Tehran, Iran, took part in this study. These participants were chosen, out of 180 learners in this school, through a proficiency test, PET. This study had to be conducted in two semesters because of the number of participants. In the first semester, eight classes with a total of 60 learners (30 introvert and 30 extrovert learners) underwent a competitive learning modality while in the next semester, another eight classes with 60 learners (30 introvert and 30 extrovert learners) experienced a cooperative learning modality.

As the treatments were conducted in two semesters, the participants' selection procedures were also done at the beginning of each semester meaning that the PET was administered to 90 learners at the outset of the first semester through which 60 learners were chosen. Then, they underwent the EPI (mentioned above), 30 introverts and 30 extroverts, and the first phase of the treatment commenced. At the beginning of the second semester, the above procedure was conducted again among 80 different learners, 60 of whom selected for the second phase.

### 3.3 Instrumentation

To accomplish the objectives of this study, two PETs and a questionnaire were administered. Moreover, certain materials were also used in the teaching procedure throughout the both semesters which are described below.

#### 3.3.1 Preliminary English Test (PET)

The reading comprehension of PET was used for two purposes: homogenizing the participants at the beginning as the pretest and after the treatment as the posttest. The test was adopted from PET practice tests by Jenny Quintana (2010), Oxford University Press. The test consists of two papers: paper 1 for reading / writing and paper 2 for listening. Each part of the test (reading, writing, and listening) consists of 25% of the total score which is 75. The speaking part of the test was not possible to conduct because of two reasons: firstly, it required a qualified examiner from Cambridge ESOL exams. Secondly, it was not the focus of the current study. Moreover, due to the purpose of the study, listening and writing part of the test were also excluded.

#### 3.3.2 Eysenck Personality Inventory (EPI)

The EPI is a questionnaire to assess the personality traits of a person, which was devised by Eysenck and Sybil (2004). Eysenck initially conceptualized personality as two biologically-based categories of temperament which include: extroversion/introversion and neuroticism/stability. This hugely validated test consists of 57 Yes/No items. Those who fill out the EPI receive three different kinds of scores: the E score which is related to how much extrovert a person is, the N score measuring the neuroticism, and the Lie score which tries to measure how socially desirable a person has wanted to prove to be. The E score is computed out of 24 because it consists of 24 items, the N score is out of 24, and the Lie score is out of 9.

The Yes/No answers should be given based on the usual way of acting or thinking of an individual. The researcher used the Farsi version validated by Noor institute of Behavioral Sciences Research in Karaj, Iran in the year 2013 in order for the respondents to answer the questionnaire more accurately.

### 3.4 Materials

The following materials were used in the process of the treatment in all groups.

#### 3.4.1 Summit 1

The main textbook used in this research was Summit 1 (Saslow & Ascher, 2005). This textbook is used in Marefat Institute for intermediate learners and it consists of 10 units which are taught in two semesters in the language institute. Each semester, students should cover five units. The main purpose of this book is to integrate reading, grammar, pronunciation, vocabulary, listening, speaking, and writing. Each unit of this book also contains a reading comprehension text.

#### 3.4.2 Select Reading Books

Select Reading Books (Lee & Gundersen, 2004) contain reading pages of different genres used in Marefat School. Select Reading books are graded from elementary to upper-intermediate levels. The readings in this book become increasingly long and more complex as the chapters progress. Each chapter has its own exercises, namely vocabulary, grammar, cross word, discussion and writing exercises. Since the level of students in this study was intermediate, the intermediate volume of this book was chosen. Only the reading passages of the book should the teacher and students go through.

#### 3.2.3.3. Oxford Word Skills

Oxford Word Skills (Gairns & Redman, 2008) is a series of three books for students to learn, practice, and revise new vocabulary. It is available in basic, intermediate, and advanced level. Each book contains 80 units of vocabulary presentation and practice. The intermediate level includes the following:

- Various topics in real life, for example foods, communication, friendship;
- Words and phrases needed in social interaction, for example giving opinions and making arrangements to meet; and
- Areas of lexical grammar, for example word formation, suffixes and prefixes, and connectors.

Not only Common and high-frequency vocabulary used in every day English but also vocabulary from different types of written text, for example job advertisements, magazine articles, web pages, and warning signs are emphasized throughout the book. To teach this vocabulary book, the researcher provided the learners with many pictures taken from the internet and showed them on the projector in their classes. Totally the book contains 55 units out of which Each semester 12 units which are pre planned by the researcher to be matched (regarding the topic) with the four units of the main course book should be covered.

### 3.5 Procedure

In order to conduct this study, the researcher first conducted the PET among 90 intermediate EFL learners for choosing 60 learners whose scores fell one standard deviation above and below the mean. At the first phase, Cooperative learning was practiced.

The next step was to conduct the EPI among the 60 participants in order to divide into 30 introverts and 30 extroverts according to EPI questionnaire. These participants sat in eight different classes and received the same treatment of cooperative learning during one semester which lasted 18 sessions of 90 minutes throughout six weeks.

The participants knew that they were under study for the whole semester but they were not told about the introversion/extroversion component since the researcher thought it might cause certain complications for learners if they knew their personality type. To this end, they were just asked to fill out the questionnaire as part of the routine class procedure.

All the students in cooperative learning groups were exposed to the same material and the same amount of instruction. All the eight classes included two types of learners, namely introverts and extroverts, who were under this study for 18 sessions.

The teacher of the class, who was the researcher as well, tried to set up a friendly atmosphere in the classes by making the students introduce themselves to each other the very first session. All of the time teacher asked the students to keep the eye contact while speaking. They were supposed to look at each other rather than the teacher while introducing themselves.

Depending on the number of students, they were divided in groups of three or four. The teacher made them aware of the purpose of cooperative learning. Each group member knew that each correct or incorrect answer was of great importance for all members of the group. The students also experienced being in different groups rather than being in one specific group during one semester to work cooperatively with different individuals. Competitiveness was de-emphasized while group work was encouraged.

Every session about two pages of the main book (Summit 1) were taught in each class. Therefore, it took six sessions for a unit to be finished. The first two pages of each unit contained topic preview of some short reading passages and a short conversation which gave a whole point of what would be presented to the students. Each group were asked to read the topic preview in cooperation. They should read it with each other and paraphrase what they read and comprehend.

Each unit contained one or two grammar focus. Having completed the instruction for this part, the teacher gave some extra exercises. These exercises and those of the book were practiced and checked in groups. After doing the exercises, they had to first decide on turn-taking, that is, to choose the one who was going to read the answer first. The teacher had no interrupting force on them.

Short readings of each unit of Oxford Word Skill were worked on in a way that each group was responsible for one part (each unit contains parts A & B) of each unit. After they read each part, they were responsible for changing their seats and explaining each part to the other groups.

Every other session, participants were asked to study one unit of the Select Reading book at home and prepare some questions about that unit in groups within the context of the class. The participants were also given sufficient time to decide on the correct answers and then express their ideas. Both positive and negative scores were given to all the members of each group.

Another technique which was done in the cooperative groups was the use of role play on the reading comprehension text. In other words, in each group, one of the members, for example, was responsible for reading the first paragraph of a text and the other one was to say aloud his comprehension to the other members of the group, he can ask for help from teacher in case he needed. The next paragraph was read by the other member and the same procedure was taken by the other learner to say his comprehension loudly. Therefore, through this technique, the participants were helping each other in the process of role play to achieve a shared goal with one another. No one wanted to prove to be the best. Rather they helped each other to have a satisfactory outcome.

Immediately after the treatment, the first group of this study which was practicing English in a cooperative way underwent the posttest of reading comprehension, which was the reading part of the PET test.

The subsequent semester, the same participant selection procedure was conducted again with another 90 learners undergoing the PET, 60 of whom were chosen and subsequently sat for the EPI to be divided into 30 introverts and 30 extroverts. This time the participants received competitive learning modality. All of them were exposed to the same amount of instructions and the same materials.

In this condition, the teacher again divided the participants into groups of three or four randomly, thus having 30 introverts and 30 extroverts in each group. These students knew that even if they were in groups, they would be assessed based on their individual efforts and outcomes. To do so, the researcher helped them from various groups differing from one session to the other. Comparing to the previous treatment, this treatment included less group work.

The teacher's instruction method did not change at all. Instead, the way the students practiced every single part was changed in comparison with the previous treatment.

When the grammar part of the book was taught, the extra exercises and the exercises of the book were done individually in each group. They had to read their answers when they were called. The teacher himself selected the person to reply to the questions and not the students themselves.

The first two pages of the book, as mentioned earlier which was topic preview and a short conversation, were read and practiced individually. The participants did not do anything in specified groups. Rather, one of them responded to the questions and the other learners put their own views forward.

Oxford Word Skills was exercised in a different way this time. One half of the class was required to read part A and the second half was required to study part B but not in groups. Having studied the reading part, they sat in pairs and

described what they got to each other and their teacher. After that, they asked their teacher to correct if any problem arises.

Participants were asked to study one unit of Select Reading book at home every other session. When in the class, one of them started to read the passage and he himself said his comprehension aloud but this time whenever they were ready for answering the questions, they did not have time for sharing their ideas and they had to buzz to answer the questions.

Their questions were made in groups but at the time of answering, they acted individually. They competed against each other on being number one. The one who buzzed sooner would answer sooner and received the positive point only for himself as an individual. They did not have to worry about the wrong answer of one of their group members because the negative point just went to one person.

Role play was also used in this group with the teacher's choice of partners. The outcome of that role play was assessed with praising one of the partners as the best one regarding the amount of attaining the course objectives.

This group also underwent the reading part of PET (as in the cooperative group) as the posttest of the study at the end of 18 sessions of competitive learning.

#### 4. Data Analysis

To test the four null hypotheses of the study, the researcher conducted a two-way ANOVA due to two independent variables, that is, learning types (cooperative versus competitive) and personality types (extroverts and introverts) and one dependent variable (reading comprehension). The criterion for significant value was set at  $p < .05$ .

#### 5. Results and Discussion

##### 5.1. Descriptive Statistics of 120 Participants in the Four Groups Prior to the Study

One hundred twenty learners whose scores fell one standard deviation above and below the mean were selected out of 180 learners. Table 1 displays the descriptive statistics of these 120 participants.

Table 1. Descriptive Statistics of 120 Participants in Four Groups Prior to the Study

	N	Minimum	Maximum	Mean	Standard Deviation
Participants scores prior to the study	120	37.00	52.00	44.0376	2.88065
Valid N (listwise)	120				

According to the aforementioned selection, 120 students were randomly assigned into four experimental groups including 30 students in each group (it was talked about in detail). Having finalized the participants' selection process, the teacher-researcher began to do the four different treatments in each group

##### 2. Descriptive Statistics of all Four Groups on the Posttest

Once the treatment in each group was over, the posttest (the reading part of PET) was conducted. The table 2 below displays the descriptive statistics for all four subgroups on the posttest for easier reference.

Table 2. Descriptive Statistics of All Four Groups on the Posttest

	N	Min	Max	Mean	Std. deviation	Skewness	
						Statistic	Std. error
Introverts/ Cooperative	30	42.0	58.0	48.25	4.6515	.121	.425
Extroverts/ Cooperative	30	42.0	56.5	48.25	4.7321	-.125	.425
Introverts/ Competitive	30	44.5	60.0	53.00	4.2440	-.512	.425
Extroverts/ Competitive	30	42.0	56.5	46.73	4.1594	.55	.425
Valid N (listwise)	30						

As it is clear from Table 2, the Skewness ratio of all subgroups fell within the acceptable range of  $\pm 1.96$ . Therefore, the assumption of normality was met for the distribution of data in four groups of the study. Tables 3 also demonstrate the internal consistency or reliability of the PET in the posttest of four groups.

Table 3. Reliability of PET Administration as Pretest for homogenizing

Cronbach's Alpha	N of Items
.822	35

As Table 3 shows, the obtained reliability coefficients through Cronbach Alpha for all groups of the study are at the acceptable level.

The next step was to check the Leven's test of equality of error variances. Therefore, table 4 below shows that the variances among the four subgroups were not significantly different ( $F(3,116) = 0.326, p = 0.806 > 0.05$ ).

Table 4. Leven's Test of Equality of Error Variances

F	df1	df2	Sig.
0.326	3	116	0.806

Consequently, administering a two-way ANNOVA was legitimized. Table 5.6 shows the results of the tests of between subject effects.

Table 5. Tests of Between-subjects Effects

Source	Type III sum of squares	df	Mean Square	F	Sig.
Corrected Model	911.250a	3	303.750	15.622	.000
Intercept	280333.333	1	280333.333	14418.031	.000
Learning Type	140.833	1	140.833	7.243	.008
Personality Type	385.208	1	385.208	19.812	.000
Learning Type*	385.208	1	385.208	19.812	.000
Personality Type					
Error	2255.417	116	19.443		
Total	283500.000	120			
Corrected Total	3166.667	119			

a. R Squared= 0.288 (Adjusted R Squared = 0.269)

As table 5 indicates, the significance value was less than 0.05 ( $F(3,116) = 15.622, p = 0.000$ ). There was a significant difference between the impact of two learning modes on all the participants ( $F(1,116) = 7.243, p = 0.008 < 0.05$ ). Furthermore, there was a significant difference between the extroverts and the introverts who participated in this study in general ( $F(1,116) = 19.812, p = 0.000 < 0.05$ ).

Finally, as the interaction of the learning type and personality type proved significantly different ( $F(1,116) = 19.812, p = 0.000 < 0.05$ ), the overall conclusion was that the interaction of two learning types (cooperative and competitive) with the two personality types (extroverts and introverts) proved significant.

Table 6. Descriptive Statistics for Learning Type on the Posttest

Posttest	Learning Type		Statistic	Std. Error
	Mean	95% Confidence Interval for Mean		
Cooperative	Mean		47.250	.5874
	Lower Bound		46.075	
	Upper Bound		48.425	
	Std. Deviation		4.5496	
	Minimum		40.0	
	Maximum		57.5	
	Skewness		-.004	.309
Competitive	Mean		49.417	.7140
	Lower Bound		47.988	
	Upper Bound		50.845	
	Std. Deviation		5.5305	
	Minimum		40.0	
	Maximum		60.0	
	Skewness		-.073	.309

Table 6 shows that the mean for cooperative group was lower than that of competitive group (48.25 Compared to 50). Therefore, the competitive group outperformed the cooperative group significantly.

Regarding the table 2, significant differences were revealed. The first hypothesis of the study that there is no significant difference between the effect of competitive and cooperative learning on introvert EFL learners' reading comprehension was rejected because introverts exposed to competitive learning modality outperformed significantly those exposed to cooperative learning modality.

The second hypothesis which states that there is no significant difference between the effect of competitive learning and cooperative learning on extrovert EFL learners' reading comprehension was also rejected as the extroverts exposed to cooperative learning outperformed significantly those exposed to competitive learning.

The third hypothesis which states that competitive learning does not have a significantly different impact on the reading comprehension of introvert and extrovert EFL learners' reading comprehension was rejected again as introverts outperformed extroverts significantly.

Finally, the fourth hypothesis which indicated that cooperative learning does not have a significantly different impact on the reading comprehension of introvert and extrovert EFL learners was not rejected though because both subgroups undergoing cooperative learning gained the same mean score on the posttest.

After this step, the researcher calculated the parameter to estimate eta squared to see how much of the obtained difference could be explained by the two modalities of the independent variable. Table 5.8 provides that information.

Table 7. Estimates of Effect Size for the Posttest

Source	Partial Eta Squared	Noncent. Parameter	Observed Power b
Corrected Model	.288	46.867	1.000
Intercept	.922	14418.031	1.000
Learning Type	.059	7.243	.797
Personality Type	.146	19.812	.993
Learning Type Personality Type	.146	19.812	.993

a. R Squared = 0.288 (Adjusted R Squared = 0.269)

b. Computed using alpha = 0.05

To determine the strength of the findings of the research, that is, to evaluate the stability of the research findings across samples, effect size was also estimated. The Partial Eta Squared as shown in Table 7 came out to be .06 and .15 for the learning and personality type respectively. According to Cohen's (1988) criteria ( $\eta^2 = .01$  is small;  $\eta^2 = .06$  is Medium;  $\eta^2 = .138$  is large), the effect sizes of .06 and .15 are medium and large. In other words, 6% of the variance in the reading comprehension of the participants is explained by the learning type (i.e., cooperative vs. competitive), and 15% of the variance in their reading comprehension is explained by their personality type (i.e., introvert vs. extrovert). Therefore, the findings of the study can be considered strong enough for the purpose of generalization.

## 6. Discussion & Conclusion

While many studies generally portray the higher effectiveness of cooperative learning (Johnson, Johnson, Stanne, 2000; Deutsch, Coleman, Marcus, 2006; Norman, 2005) showed that cooperative learning led to better results, without including the personality factor, this study did not prove categorically that cooperative learning is more advantageous.

At first sight, one might think that the results revealed a contrary result to the above statement and that competitive learning proves more efficient than cooperative learning. However, this result is not an absolute finding of this study. The results of the study revealed that although students in competitive group were more successful than those in the cooperative group, the extroverts in cooperative group achieved more than the extroverts in the competitive group. The reason for the latter statement is that extroverts have a great tendency to be engaged in group activities.

Another conclusion of this study was that introverts outperformed extroverts in the competitive group meaning that competitive learning does not match the personality of extroverts. According to the finding, extroverts did not benefit so much from competitive learning. Hence, introverts were generally better readers than extroverts. This is very much understandable if the paradigm of extroversion and introversion is put together in context: extroverts outweigh introverts in amount of speech but they do not necessarily gain more than introverts when it comes to reading comprehension.

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