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Cooperative Learning (CL) in the English as a Foreign Language (EFL) Context: Investigating, Learning Outcomes, Processes, and Experiences

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School of Education

Abstract

This study examines the effectiveness of cooperative learning (CL) in developing English as a Foreign Language (EFL) students' grammatical competence in a relatively under-researched context (i.e., Saudi Arabia) and accounts for this effectiveness with reference to students' behaviours, verbal interactions, and their perceptions about learning English lessons in a CL environment.

To identify the effect of CL in comparison to traditional small groups on EFL learners' achievements, behaviour states, and verbal interactions, a twelve week study was conducted in four government secondary schools in an EFL context. The participants in this study were 139 male students in the tenth grade, aged 14 to 15 years, in four boys' secondary schools in Al-Baha City, Saudi Arabia. Each school was randomly assigned to one of two conditions, either an experimental or a control group. The researcher videotaped eight EFL classes over a twelve week period: four classes under experimental conditions who are trained in CL principles and skills, and four classes in the comparison groups without this training.

The researcher gathered both quantitative and qualitative data in this study. The instruments used to collect data included a pre-test and post-test, English Grammar Achievment Test (EGAT) and video recordings (observation) of the EFL learners working together in a CL environment as well as in traditional small groups. After the lessons had been videotaped, two schedules were used to code the students' behaviours and the verbal interaction data in both the CL groups and the traditional small groups. The researcher also collected information during the videotape sessions on EFL learners' verbal interactions while they learned English as a foreign language. The EFL conversation data of both the experimental and control groups were transcribed and compared qualitatively. Further, the researcher interviewed ten EFL learners from the experimental groups chosen randomly at the end of the study to identify how EFL students responded to their new experiences in learning English in a CL environment.

The findings of this study indicated that the EFL learners who learned English grammar lessons in a CL environment had higher scores in the English achievement test than did their peers who studied the same English grammar lessons in a traditional small group

environment. However, there were no significant differences between the experimental and the control conditions for the scores achieved for the writing task, probably because a longer period was required to develop writing skills. The EFL learners in the CL groups depended on each other, assisted each other, asked each other for clarifications, made clarifications, asked each other questions, and gave explanations with examples, their academic achievements increased as a result of their dynamic interaction as compared to their peers in the traditional small groups.

Moreover, the EFL learners in the experimental groups worked more cooperatively than did their peers in the control groups, who learned English lessons in traditional small groups. The findings of this study highlighted that the EFL learners in the experimental condition had increased interpersonal communication and were more verbally interactive with each other than their peers in the control condition. This was particularly apparent in students making basic statements during their discussions, responding with brief statements to others' requests for basic information, providing explanations and giving examples, making positive interruptions, and supporting or encouraging others in the group. Also, the results of this study showed that the EFL learners in the experimental condition assisted each other, built on each other's ideas, and that there was a dynamic interaction between them. Moreover, their language was very rich in that they provided detailed feedback, asked questions, made statements, gave different examples, provided clarification, requested clarification, and responded to each other, which resulted in learning taking place.

The findings of this study also showed that the EFL learners believed that working in groups resulted in increased achievements and greater motivation to learn different English skills. Further, the EFL learners expressed a desire to continue to learn English skills through CL and they wished that their teacher would not return to the individual learning method of teaching. Finally, the EFL learners believed that using the CL method enabled them to develop social skills and to perform different roles in the classroom, such as a presenter or a leader. Also, it enabled them to build positive relationships with other classmates in the classroom.

The findings suggest that CL has a lot of potential and the benefits of introducing CL in the EFL context, especially in Saudi Arabia, are positive. EFL institutions are recommended to apply this teaching method in their EFL classrooms as it has many advantages for EFL

learners. This study also added further contributions to the literature review on CL in general and, in particular, the Saudi Arabian setting. The study contributes to the field of EFL and CL in identifying how EFL students interact and communicate with each other via CL groups; it describes what is happening in the cooperative groups and why CL enables EFL students to advance academically. Further research in CL and in EFL verbal interactions is required in a broader setting and in many different EFL contexts.

Declaration by author

This thesis is composed of my original work, and contains no material previously published or written by another person except where due reference has been made in the text. I have clearly stated the contribution by others to jointly-authored works that I have included in my thesis.

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Peer-reviewed papers

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Applied linguistics, teaching English as a foreign language, learning process, EFL discourse, verbal interaction, cooperative learning, traditional small groups, Saudi Arabia

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Table of Contents

Abstract ii

Table of Contents x

List of Tables xv

Chapter 1: Introduction 1

Research Problem 1

Significance of the Study 3

Research Questions 5

Thesis Structure 5

Chapter 2: Literature Review 8

Chapter Overview 8

Teaching English as a Foreign Language (EFL) in Saudi Arabia 8

What Is Cooperative Learning? 12

Group Composition 13

Teacher's Role in Cooperative Learning 15

Methods of Cooperative Learning 15

Benefits of CL 16

Difficulties in Implementing Cooperative Learning 18

Traditional Learning and Cooperative Learning 20

Theoretical Perspectives on Cooperative Learning 21

Constructivist theories. 21

Social interdependence theory. 24

Socio-cultural theory and Second Language Learning (SLL). 28

Cooperative learning and second language acquisition theories. 31

Empirical Studies on Cooperative Learning 37

Chapter Summary 42

Chapter 3: Research Design and Methodology **44**

Introduction *44*

Research Design *44*

Justification for using a quasi-experimental design. 45

Mixed methods research. 46

Quantitative research. 47

Qualitative research. 47

Triangulation. 48

Practical Issues of Research Design *49*

Background to the research. 49

Participants and sampling. 49

Participating schools. 50

Teachers. 50

Instruments and Data Collection *50*

Quantitative data. 51

Qualitative data. 58

Organization and analysis of video data. 58

Procedures *60*

Workshops for the experimental and control conditions' intervention. 61

Cooperative learning groups (training program). 61

Traditional learning (small groups). 63

Data Collection Process *64*

Data Analysis *65*

Study Limitations *66*

Ethical Issues *67*

Chapter Summary *68*

Chapter 4: English Grammar Achievement Test and Behaviour States Data and Analyses **70**

Introduction *70*

English Grammar Achievement Test *70*

Procedures. 70

Results. 71

Discussion. 79

Students' Behaviour States *81*

Procedures. 81

Statistical analysis. 81
Students' behaviour states (Time 1, weeks 2 to 4). 82
Students' behaviour states (Time 2, weeks 6 to 8). 83
Students' behaviour states (Time 3, weeks 9 to 11). 84
Chapter discussion. 85
Chapter summary. 87

Chapter 5: Verbal Interactional Data and Analysis **88**

Introduction *88*

Quantitative Analysis of Observational Data *89*
Procedures. 89
Statistical analysis. 90
Verbal interaction outcomes (Time 1, weeks 2 to 4). 90
Verbal interaction outcomes (Time 2, weeks 6 to 8). 92
Verbal interaction outcomes (Time 3, weeks 9 to 11). 94
Discussion: Summary of the verbal interactional results. 95

Qualitative Analysis of the Observation Data *97*
Vignette 1: Cooperative learning group 98
Vignette 2: Traditional learning small group. 100
Vignette 3: Cooperative learning group. 102
Vignette 4: Traditional learning small group. 105
Vignette 5: Cooperative learning group. 107
Vignette 6: Traditional learning small group. 110
Vignette 7: Writing task during cooperative learning group. 112
Vignette 8: Writing task during traditional learning small group. 115

Chapter Summary *117*

Chapter 6: Qualitative Interview Data and Analysis **119**

Introduction *119*

Findings from the Post-task Semi-structured Interviews *120*
Academic achievements. 120
Social skills and self-confidence. 122
Performing different roles. 123
Increased students' relationships. 123
Cooperative learning and individual learning. 124
Cooperative learning method does not work for all students. 126
Barriers to cooperative learning. 128

Chapter Summary *129*

Chapter 7: General Discussion **130**

Chapter Overview *130*

Research Question 1 *131*

Research Question 2 *133*

Research Question 3 *135*

Research Question 4 *142*

Synthesis of Quantitative and Qualitative Results Findings *144*

Chapter Summary *147*

Chapter 8: Conclusion and Recommendation **149**

Chapter Overview *149*

Study Conclusion *149*

Directions for Future Research *151*

Implications for EFL in Saudi Arabia *152*

Final Remarks *153*

References **154**

Appendix 1: Cooperative Learning Intervention Training Program **179**

Intervention Training Program (5 weeks) *179*

Meeting 1 179

Meeting 2 180

Meeting 3 180

Meeting 4 180

Meeting 5 180

Meeting Proformas *181*

Meeting 1: Proforma 181

Meeting 2: Proforma 181

Meeting 3: Proforma 182

Meeting 4: Proforma 182

Meeting 5: Proforma 183

Definitions and Explanations *183*

Individual Accountability 183

Positive Interdependence List 184
Positive Goal Interdependence 184
Positive Reward/Celebration Interdependence 185
Positive Resource Interdependence 185
Positive Role Interdependence 185
Positive Task Interdependence 185
Roles in Cooperative Learning 186
Common Roles in Cooperative Learning 186
Steps in Development of Social Skills 187

Appendix 2: Data Instruments **189**

A2.0 English Grammar Achievement Test (EGAT) *189*

A2.1 Observations Schedule: Behaviour States *193*

A2.2. Observation Schedule: Verbal Interaction Variables *193*

A2.3 Cooperative Learning Interview Questions *193*

A2.4 Interview Questions: EFL Learners' Cooperative Learning Experiences *194*

Appendix: 3: Test Data Analyses **195**

List of Tables

Table 2.1 ***Methods of Cooperative Learning*** **16**

Table 2.2 ***Differences between Traditional Learning and Cooperative Learning*** **20**

Table 2.3 ***Methods of Positive Interdependence within Cooperative Learning*** **25**

Table 3.1 ***Quasi-experimental Design*** **45**

Table 3.2 ***Overview of Quantitative Research and Qualitative Research Characteristics*** **48**

Table 3.3 ***Research Design*** **49**

Table 3.4 ***Content Lessons across Implementation*** **53**

Table 3.5 ***Behaviour States*** **55**

Table 3.6 ***Interaction Variables*** **57**

Table 3.7 ***Research Data Collection Process*** **65**

Table 4.1 ***Means and Standard Deviation in the Total of Pre-test and Post-test Scores for the Experimental and Control Conditions*** **72**

Table 4.2 ***Tests of Between Subject Effects for Pre-test and Post-test Total Scores*** **72**

Table 4.3 ***Student Score Mean and Standard Deviations on the Multiple Choice Test and the Writing Test at Pre-Test and Post-Test*** **73**

Table 4.4 ***Tests of between Subject Effects for Two Different Scores (Post-test Minus Pre-test)*** **74**

Table 4.5 ***Means and Standard Deviation for Item Analysis at Time 1*** **74**

Table 4.6 ***Means and Standard Deviation for Item Analysis at Time 2*** **77**

Table 4.7 ***Tests of Between Group Effects for Four Behaviour Variables at Time 1 by Condition*** **82**

Table 4.8 ***Tests of Between Group Effects for Four Behaviour Variables at Time 2 by Condition*** **83**

Table 4.9 ***Tests of Between Group Effects for Four Behaviour Variables at Time 3 by Condition*** **84**

Table A3.1 ***Frequencies*** **195**

Table A3.2 ***Frequencies*** **195**

Table A3.3 ***Condition*** **196**

Table A3.4 ***Multiple Choice Questions 1*** **197**

Table A3.5 ***Writing Task Questions 1*** **198**

Table A3.6 ***Multiple Choice Questions 2*** **199**

Table A3.8 ***Pre-test Total Scores*** **201**

Table A3.9 ***Post-test Total Scores*** **202**

Table A3.10 ***Between Groups MANOVA with Two DVs, Condition as IV, and School and Class as Covariates*** **203**

Table A3.11 ***Multivariate Tests*** **204**

Table A3.12 ***Tests of Between Subjects Effects*** **205**

Table A3.13 (A & B) ***Estimated Marginal Means & Condition*** **206**

TableA3.14 ***Between Groups MANOVA with Two DVs and Condition as IV*** **207**

TableA3.16 ***Multivariate Tests*** **208**

Table A3.18 ***Tests of Between-Subjects Effects*** **209**

Table A3.18 (A & B) ***Estimated Marginal Means & Condition*** **210**
Table A3.19 ***Pairwise Comparisons*** **211**
Table A3.20 ***Multivariate Tests*** **211**
Table A3.21 ***Univariate Tests*** **212**
Table A3.22 ***ANOVA with the Total Difference Score (Pre-test to Post-test) as DV and with Conditions as the IV*** **212**
Table A3.23 ***Levene's Test of Equality of Error Variances*** **212**
Table A3.24 ***Tests of Between-Subjects Effects*** **213**
Table A3.25 (A & B) ***Estimated Marginal Means & Condition*** **214**
Table A3.26 ***Pairwise Comparisons*** **215**
Table A3.27 ***Univariate Tests*** **215**
Table A3.28 ***One Way ANOVAs*** **216**
Table A3.29 ***Test of Homogeneity of Variances*** **216**
Table A3.30 ***ANOVA*** **217**
Table A3.31 ***Descriptive Statistics for Control Condition Difference Scores*** **217**
Table A3.32 ***Descriptive Statistics for Experimental Condition Difference Scores*** **217**
Table A3.33 ***Tests of Between Subject Effects for Two Different Scores (Post-test Minus Pre-test)*** **218**
Table A3.34 ***Spreadsheet for the Test*** **219**

List of Abbreviations

CL	Cooperative Learning
CLT	Communicative Language Teaching
EFL	English as a Foreign Language
EGAT	English Grammar Achievement Test
ESL	English as a Second Language
GTM	Grammar Translation Method
MANOVA	Multivariate Analysis of Variance
MOE	Ministry of Education
SCT	Socio-cultural Theory
SLA	Second Language Acquisition
SPSS	Statistical package for Social Sciences
ZPD	Zone of Proximal Development

Dedication

To teachers, students and academic staff

Chapter 1: Introduction

Research Problem

This study examines the effectiveness of cooperative learning (CL) in developing grammatical competence for English as a Foreign Language (EFL) learners in the relatively under-researched context of Saudi Arabia. This effectiveness is accounted for with reference to the CL processes, EFL learners' behaviours states, and verbal interactions in a CL environment.

When students work together in small groups to achieve shared goals, it is called cooperative learning (CL). Research on CL over the past three decades has documented the academic and social benefits derived by students when they work together (Gillies, 2006, 2011; Gillies & Ashman, 2000; Gillies & Boyle, 2005, 2010, 2011; Gillies & Haynes, 2011; Johnson & Johnson, 1999, 2002, 2003, 2004, 2007; Johnson, Johnson, & Smith, 1991a; Sharan, 1994; Slavin, 1995; Slavin & Johns Hopkins Team Learning, 1994). For instance, previous research has shown that when CL is compared to individual learning, students who learn cooperatively obtain better academic results (Gillies, 2011). Similarly, when it is compared to lecture-directed learning, students also obtain better academic results (Johnson & Johnson, 2002). The other benefits of CL include enhanced thinking skills, more self-motivation to learn, higher self-esteem, greater respect for others and improved attitudes towards learning (Slavin, 1995). CL helps enhance thinking, acquisition of information, communication and interpersonal skills, and, most importantly, self-confidence (Johnson & Johnson, 2003). These skills and outcomes are produced by dividing students into groups and then allotting them structured cooperative tasks where students work together on homework assignments, laboratory experiments, or design projects.

Three prominent researchers on CL are David Johnson and Roger Johnson, Robert Slavin, and Spencer Kagan. These researchers have different ways of researching CL and their approaches vary from each other. Slavin (1995) merges the methods of Johnson and Johnson and Kagan into one to achieve three principles to obtain positive results in the achievements of students. Those three principles are: individual liability, group objectives, and equal chances of success for all group members.

Some advantages of the different aspects of CL that Gillies (2011) discusses are as follows. Firstly, students' time is utilized in a more productive way when they work cooperatively. Students are able to learn more effectively and the teacher is also able to teach more students at a time (Sharan, 1990). Secondly, CL positively affects the performance of students. According to Hertz-Lazarowitz (1990), the level of boredom in students is reduced significantly in the classroom when CL is used. The troubling behaviour of students is also reduced considerably. Further, working mutually on a single task enables every student to contribute ideas and information so all students are motivated to provide assistance to each other (Sharan, 1990). Finally, the involvement of every group member is critically important when each works on a common task. It leads to the development of positive social relationships among students which boosts their contribution level in a single task and this is appreciated by most class teachers (Gillies, 2003a).

While there are many benefits that apply to students when they work cooperatively, some researchers question and some disagree as to how CL methods can help students to achieve such positive results (Johnson & Johnson, 2004). They also question the type of classroom conditions required to achieve successful CL. For example, some believe that there is a need to undertake further research at different year levels and in different subject areas in different socio-educational contexts to verify the positive outcomes associated with CL reported in the literature (Slavin, 1995). Moreover, there has been relatively less research on the processes through which these benefits are produced. This is the case largely because the majority of studies have used quasi-experimental design in which post-test outcomes were compared to pre-test performance. There is still not much known about what students actually do in a CL class and how their behaviours and conversations contribute to academic and other outcomes. In the context of Saudi Arabia, where the present study is located, there have only been a few studies on CL (Alanazy, 2011; Alhaidari, 2006; Alharbi, 2008; Basamh, 2002) and none of these studies have used have sought to understand student behaviours, verbal interactions, or CL processes in the classroom.

Many of these studies on CL have relied on achievement test data only to determine whether CL is helpful or not. It might be that students' behaviours and interactions were not cooperative and that students' achievement increased because students in traditional small groups do not get training in CL, as compared to what happened in the groups as the students

worked together. The study that is proposed here not only involves pre-and post-measures but it also involves looking at what may be mediating the learning that is occurring in the groups. Moreover, while some researchers have identified the factors that mediate and moderate learning in small cooperative groups, this has not been done before in the context of learning EFL. Against this background, the present study was conducted to pursue the following objectives:

1. To identify if there are differences in the achievements of grammatical knowledge, the behaviour states and the verbal interactions of EFL learners in CL or traditional small groups; and to seek and explain why CL students may end up with higher academic levels;
2. To identify, compare, and qualitatively explain common categories that are found in in CL and traditional small groups when EFL learners interact and communicate with each other; and to explain what is happening in the cooperative groups and how EFL learners depend on each other to gain different English skills;
3. To identify EFL learners' responses and perceptions to their new experiences in learning English in a CL environment; and
4. To identify whether CL can be introduced in the EFL context, particularly in the EFL context in Saudi Arabia.

Significance of the Study

This study is significant because CL has many benefits for EFL learners, including reducing anxiety, increasing students' motivation, increasing students' learning outcomes, enhancing students' social skills and classroom participation, fostering students' independence and increasing students' self-esteem (Ghaith, 2003; Jalilifar, 2010). Specifically, this study looked at the EFL learners' behaviours, interactions, and processes in the CL classroom. The aim of the project is to investigate the impact of CL on students' achievement in learning English grammar in comparison to traditional instruction methods. This study contributes to the knowledge about how EFL learners learn English grammar as a foreign language when they work cooperatively in comparison to peers who work in traditional small groups. Moreover, this investigation of the processes, behaviours, and interactions within CL groups is expected

to provide explanations of academic and other benefits associated with CL learning as reported in the literature.

This study is also significant because it investigates how EFL learners interact with each other when they learn English in a CL environment. It provides information about EFL learners' behaviours and processes in the CL classroom. As there have not been studies on EFL learners' behaviours and verbal interactions in CL groups, this researcher designed a new observation schedule that will be a reference for other researchers who wish to investigate learners' behaviours, learning processes, and verbal interactions in CL and traditional small groups learning in the context of EFL.

Investigating the potential of CL in the context of EFL teaching and learning is important for several reasons. There is substantial evidence from different social contexts on the academic advantages and other advantages of CL pedagogy in different subject areas. On the other hand, EFL teaching and learning in many parts of the world have reported massive failure, which is largely attributed to EFL pedagogy. Teaching EFL has been encouraged in Saudi Arabia where students regard English as a difficult language to learn. Consequently, they do not generally achieve good grades in this subject at secondary and intermediate levels (Alghamdi, 2008). Researchers have conducted many studies to shift from traditional learning to a more interactive environment for EFL learners' to facilitate language learning. For example, Ling (2008), after observing Chinese students, declared that although English had been a syllabus subject for about eight years, students still felt uncomfortable communicating in this language. Chang (2002) believes that the primary objective behind students' learning is to pass the examination in the situation where traditional teaching methodology such as an audio-lingual approach and grammar-translation is used; ultimately, this prevents them from learning at a deeper level.

Some research proposes certain modifications in the classroom teaching practices of countries where EFL teaching methods are used. For example, in Taiwan (Liao, 2005; Yang, 2005), in Turkey (Gömleksi˙z, 2007; Muhammad, 2010), in Vietnam (Dang, 2007; Le Ha, 2004), in Saudi Arabia (Alabbad, 2009; Alanazy, 2011; Alhaidari, 2006; Alharbi, 2008; Basamh, 2002), and in China (Sachs, Candlin, & Rose, 2003), research advocates a transfer from traditional teaching methods to new methods, such as CL, that encourage greater interaction between students and their teachers. Countries such as Saudi Arabia tend to

employ an orthodox academic structure. It would be idealistic for such places to make use of CL as a way of making the system worthwhile with benefits to both students and teachers alike without evidence of such benefits. This study will increase the possibility of persuading individuals and policy makers in Saudi Arabia to accept the importance of CL methods in classrooms and update discussions on both content and other academic matters across the Saudi educational system. For such a purpose, this thesis helps to examine the progress of CL in secondary education in Saudi Arabia.

Research Questions

1. What is the effect of cooperative learning in comparison to traditional small groups on the achievement of grammatical knowledge of EFL learners?
2. What is the effect of cooperative learning in comparison to traditional small groups on the behaviour states of EFL learners?
3. What is the effect of cooperative learning in comparison to traditional small groups on the verbal interaction of EFL learners?
4. How do EFL learners respond to their new experience in learning English in a cooperative learning environment?

Thesis Structure

The thesis consists of eight chapters. Chapter 1 provides an introduction to the study, and presents the research problem and the aim of the study. It provides the motivation for the work, discusses the study rationale, explains its significance, and states the research questions.

Chapter 2 provides a review of the relevant literature on teaching English as a foreign language in Saudi Arabia, definitions of CL, teachers' roles in CL, methods of CL, benefits of CL, and differences between traditional learning and CL. Secondly, it discusses group composition and difficulties in implementing CL. This chapter, in addition, discusses theories behind CL, such as constructivist theory and social interdependence theory. Moreover, it discusses some relevant theoretical perspectives on second language acquisition, such as social culture theory and second language learning, the input hypothesis, the interaction hypothesis, and the output hypothesis. Finally, it presents a review of empirical studies that have been conducted in the field of CL.

Chapter 3 discusses the methodology and commences with the research questions. It then moves to the research design and the rationale for using the quasi-experimental design in this study. In addition, a review of the mixed methods research is discussed and a summary of both the qualitative and quantitative approaches for collecting data are presented. The benefits of triangulating the data to strengthen the study are presented. Further, this chapter provides a discussion of the practical aspects of the research such as the participants and the research setting, and describes the CL program and the intervention that was implemented. Then, the data instruments such as achievement test, observation, and interviews are discussed in detail. Next, data collection procedures and data analysis are presented. Finally, the ethical issues involved in this study are identified in this chapter.

Chapter 4 discusses the results of the students' achievement scores on the English achievement test. It compares the pre-test and post-test results of the control condition and the experimental condition and displays the statistical results of their English achievement test. It also presents the results on the components of the English achievement test: the multiple choice grammar test and productive grammar (writing) task. Secondly, it presents the findings of the students' behaviour states when they learn English in a CL environment as compared to traditional small groups. It discusses the quantitative results for the video data and displays the statistical results for both control and experimental conditions.

Chapter 5 presents and discusses the results of the students' verbal interactions in the two conditions. The main focus of the chapter is the linguistic forms of the students' interactions. In the first section, the researcher presents and discusses the data collected from the videos, while, in the second, he presents the results of the analyses of these data and then explains students' verbal interactions in both conditions during the 12-week intervention.

The interactional data and students' conversations in the eight classrooms were collected to examine their learning processes thoroughly. The students' verbal interactions are analysed in the experimental and control conditions and conversational examples are provided and discussed to show the differences between these two learning conditions. This is followed by an explanation and interpretation of the related examples. Finally, this chapter concludes with a summary of the students' performances in both conditions.

Chapter 6 presents and analyses the findings based on the data from the interviews. The purpose of this chapter is to identify how EFL learners respond to their new experiences in learning English lessons in a CL environment. The student interviews were conducted individually in Arabic and were audio-recorded by the researcher and then translated into English.

Chapter 7 discusses the findings from both the quantitative and the qualitative strands of the research. The findings presented in Chapters 4, 5, and 6 are discussed with reference to the literature reviewed in Chapter 2. This chapter begins with a discussion of the findings from the EFL learners' achievement on the English Grammar Achievement Test (EGAT) before and after the implementation of CL. It also discusses the EFL learner achievements in the pre-test and post-test to identify the impact of CL on their achievements as presented in Chapter 4.

The section that follows discusses how the EFL learners behave with each other in the two conditions. It also reports on the statistically significant differences between the EFL learners who learn English through CL and their peers who learn same lessons in traditional small groups.

The next section presents the results of the EFL learners' verbal interactions when they learn English in the two conditions. The following section presents and highlights the EFL learners' perceptions and experiences of learning cooperatively and how this affected their achievements and socialisation.

Chapter 8 presents and summarizes the main conclusions of the study. The following section addresses the directions for future research. Finally, the last section presents the implication of this study.

Chapter 2: Literature Review

Chapter Overview

This chapter begins with a review that discusses the current situation of EFL instruction and the relevant challenges faced by most EFL learners, including English teacher-centrism and the lack of interaction and cooperation between students. In addition, the review presents the main aims of teaching English at secondary school in Saudi Arabia.

The chapter then presents definitions and educational affordances of CL, followed by a description of group composition and an explanation of how students form different groups. Further, this chapter highlights the teachers' role in CL and what they should to do to provide good leadership in the CL classroom. This chapter then presents the different methods of CL, the benefits of CL, and some obstacles encountered both by EFL learners and teachers in implementing CL. The differences between cooperative and individual learning methods are also discussed in this chapter.

Following this discussion, this chapter presents and discusses the theories that underpin CL: constructivist theories, social interdependence theory, socio-cultural theory, second language learning (SLL) and CL theories, and, finally, second language acquisition (SLA) theories. Furthermore, this chapter presents and discusses empirical studies and research on CL and seeks to demonstrate why CL students achieve higher levels academically. Finally, this chapter concludes with a short summary of the key issues raised.

Teaching English as a Foreign Language (EFL) in Saudi Arabia

There are five stages in the Saudi education system: nursery schools, elementary schools, intermediate schools, secondary schools, and university (Alghamdi, 2008). The Ministry of Education in Saudi Arabia commenced teaching English as a foreign language in 1930. Learning English is a mandatory subject in Saudi public schools, beginning in the sixth grade and continuing until the twelfth grade. To advance to the next level, students have to pass English exams; they study English four periods a week and every period lasts for 45 minutes. They are taught speaking skills, writing skills, grammar skills, listening skills, reading skills and vocabulary.

The three-year secondary-stage syllabus aims to (MOE, 2009):

1. Create a taste for English language through encouragement of reading of texts that are easily comprehensible by both science and art students;
2. Provide a strong basis for English in order to facilitate the student at later stages of university or higher institute education;
3. Provide an imaginary dimension to the language learning through teaching of poetry and character visualization;
4. Teach students to engage in critical thinking and intelligent reading of English texts; and
5. Ensure that the student, by the end of his third year, is proficient enough in the English language to carry out his vocation and pursue it.

The objectives include:

1. Helping students become accomplished in all four areas of language mastery;
2. Highlighting the significance of learning foreign languages and how they can serve as tools for understanding the social, cultural and economic dimensions of society; and
3. Creating an interest in reading, so that the pupil can, at later stages, read and learn from various reference books, periodicals, and pamphlets pertaining to the future specialization field that he chooses to undertake.

The final stage of pre-tertiary education in Saudi Arabia is the secondary level when students are 13 to 17 years of age. It is the most important stage because students can enrol in higher education when they graduate from secondary school. At the end of this stage, students are required to demonstrate a satisfactory level of English proficiency. However, most students do not speak English fluently and they also have difficulty writing one paragraph correctly (Alghamdi, 2008).

The English language is given a high degree of importance in Saudi Arabia. Most of the subjects, including science, medicine, engineering and aviation, at the tertiary level are taught in English (Alabbad, 2009). The only foreign language taught in Saudi public schools is English (Al-Shumaimeri, 1999). However, students' English proficiency is still not satisfactory and is considered to be low by achievement standards. Most EFL learners in Saudi public schools get low marks, from 60 to 70 out of 100, in the English languge achievement test that has been designed by the Ministry of Education.

Because of this low achievement rate, the researcher conducted this study to look at new methods which may improve standards.

There are a few studies that have examined the disappointing results achieved by students in EFL education in Saudi Arabia (Alghamdi, 2008; Al-Hajailan, 2003). Due to study limitations, they fail to provide suggestions to improve academic results and ensure the EFL teaching program is successful. The factors contributing towards the failure of this program are poor teaching skills due to weak methodology and the late introduction of English in the education system.

English teaching methods in Saudi classes are traditional; students study only to pass exams and not to learn the language; thus, they quickly forget what they learn (Alghamdi, 2008). Al-Hazmi (2003, 2008) pointed out that the EFL contexts have been described as settings in which EFL teachers lead the learning process, and learners are passive receptors of different knowledge. EFL learners' are often passive in the classroom and tend not to participate with their teachers. Chen (2011) stated that the EFL teachers used traditional methods of learning in their classrooms in which the teacher's role is dominant; learners just listen to their teachers and there is a lack of valuable discussions (Alshahrani & Al-Shehri, 2012). Aliumah (2011) indicated that students do not raise different topics in front of their classmates because they want to avoid making errors that may cause embarrassment.

Al-Shammary (2005) revealed that, even after receiving EFL instruction for six years in Saudi public secondary schools, the students were not able to use the language correctly. He believes that the reason EFL education does not attract the interest of students is a lack of encouragement and incentive. Further, no progress is seen in the attitudes of the students towards EFL learning.

Two studies have been conducted which helped to investigate the connection between students' interest towards EFL and their success in the EFL program. One such investigation was conducted by Alghamdi (2008), who concluded that there was a lack of relationship between the students' approach and their accomplishments, which was reflected in the students' underachievement in EFL studies. A primary reason for the low level of student enthusiasm towards learning English was that many students did not find EFL to be of any use (Alabbad, 2009).

In an investigation of the textbooks used in secondary schools, Al-Shumaimeri (1999) came to the conclusion that the students' purpose in studying English was simply to pass the final exam. In order to pass the exam, the students considered grammar and writing skills important. Alghamdi (2008) investigated and found four main reasons for the low level of student achievement in learning English: poor teaching methodology, inadequate professional skills in teachers, a lack of motivation to learn English, and a poor selection of the contents of the EFL program.

Traditional learning, known as the 'grammar-translation method' where the teacher gives the lecture and students do not actively participate, is the major teaching method in Saudi Arabia; the majority of teachers prefer to use it in their classrooms. Freeman and Freeman (1994) stated that there are many traditional methods in learning English as a Foreign Language (EFL); for example, the grammar translation method. GTM has three main characteristics (Richards &Rodgers, 1986), these are summarized as: The students' native language is the medium of instruction in the EFL classroom. Learners' native language is used to highlight new words and learn language skills with less practice of English. Moreover, in order to read difficult texts, the EFL learners learn vocabulary through memorization and word lists. Finally, the EFL learners pay little attention to speaking, listening and pronunciation in the EFL classroom.

In contrast, Communicative language teaching (CLT) is a method that seeks to (a) "make communicative competence the goal of language teaching and develop procedures for the teaching of the four language skills" (Richards & Rodgers, 1986, p. 66). CLT depends on three main principles by which activities and language use assist EFL learners to learn various tasks: the communication principle; the task principle; and the meaningful principle (p. 72). These principles enhance the interactive role of communication. The interactive nature is seen through the "collaborative nature of meaning making" such as giving and getting different messages from other learners (Savignon, 1991, p. 261). Similarly, cooperative learning has a strong chance to increase and enhance the EFL learner's ability to acquire the target language. One of the main purposes of using cooperative learning may be to enable EFL learners to practice of the target language. The incorporation of CL methods in the Communicative language teaching classroom may provide EFL learners with the

opportunity to interact with each other to achieve different academic skills in the EFL classroom.

In this study, the researcher seeks a new method that might assist students to increase their achievements and enable them to interact with their peers**.**

The cooperative learning method might be the solution because students have the opportunity to communicate with each other and they can learn from each other. In the following sections, CL will be defined and its principles and other issues of CL will be highlighted**.**

What Is Cooperative Learning?

"Cooperative learning is the instructional use of small groups through which students work together to maximize their own and each other's learning" (Johnson, Johnson, & Holubec, 1994, p. 4). It consists of small groups of students who work together on a common task (Johnson, Johnson & Holubec, 2007). It improves the way of learning as students work in cooperation and discuss their problems with each other (Johnson & Johnson, 2002). Kagan (2010a) defined CL as "a teaching arrangement that refers to small, heterogeneous groups of students working together to achieve a common goal" where "[s]tudents work together to learn and be responsible for their teammate's learning as well as their own" (p.85).

Cooperative grouping motivates students to strive harder to achieve, as the final result of the work depends on everyone contributing (Gillies, 2003b). In this way, a constructive association is created and the achievements of individuals are improved. Richards (2008) highlighted that students' cooperation creates a supportive environment that meets their different needs and enables them to overcome the difficulties they encounter. In cooperative interactions, students have to exchange different ideas to solve the troubles they face; they have to support each other to develop their skills and knowledge (Hawkins, 2008).

In cooperative groups, students know that they have to work together and the success of the group depends on the efforts of every group member (Gillies, 2008). The students are aware of the objectives they have to achieve in a CL group (Johnson, Johnson & Holubec, 2007). Another advantage of CL groups is that the results are good with a high level of trust among the members (Johnson & Johnson, 1999). The CL group does not include the pseudo-learning group or the typical classroom-learning group (Johnson, Johnson, & Holubec, 1998).

CL is an approach to learning that has attracted the attention of teachers, parents, administrators, and other education personnel. CL as a method is being studied more broadly throughout different educational institutions (Slavin, 1990). Positive interdependence, face-to-face communication, individual liability, proper use of mutual skills, and time to self-assess group functioning are the elements required for the successful implementation of CL (Johnson & Johnson, 2009).

Apart from educational institutions, CL is also successful in corporate organizational environments. CL consists of organizational teams, which have a number of members with one goal, which they try to achieve by working in a team. This includes dividing the work equally and trusting each other. A successful cooperative team can be developed if there is open communication, mutual respect, and truthfulness among workers. Hard work and rewarding cooperative behaviour further improves the results of the teams (Nahavandi, 2003).

CL helps to build feelings of harmony when students work in teams to complete course material under the supervision of a teacher (Panitz, 2002). This is supported by research that has shown that students can study, produce, and succeed faster and more efficiently when they learn cooperatively as compared to when they work individually or in competition with each other (Johnson & Johnson, 2002). CL helps students learn appropriate social skills, which promote mutual trust and respect among individuals. These are essential, especially when implementing this instructional approach (Muhammad, 2010).

Group Composition

Group assignments are a positive feature of CL groups (Johnson, Johnson, & Holubec, 1994). A group usually consists of two to four students, as it is believed that a small group yields a better result. The group has to be small in order for the students to have the power to make decisions on their own, build social and cooperative skills, and learn to work in groups (Muhammad, 2010). The rationale behind having a small group is that a large group would need more instruction time from the teacher and, if the teacher is not able to give each group adequate time, the students will lose interest in the work and thus in the subject. The advantages of small groups are that students have more time to focus on issues of concern and to scaffold each other's learning.

Groups are constructed according to the following four categories: heterogeneous groups; homogeneous groups; teacher-selected groups; and self-selected groups (Sharan, 1990). Heterogeneous groups contain students who have diverse interests, talents, and backgrounds, whereas homogeneous groups contain students with similar interests, talents, and backgrounds. Teacher-selected groups can be heterogeneous or homogeneous. The self-selected group is usually homogeneous.

d'Apollonia, Lou, & Abrami (2001) conducted research to investigate the efficiency of student input and output in accordance with the group size. They found that groups having three to five students benefited more, whereas Webb, Nemer, Chizhik, and Sugrue (1998) showed that weak students benefited when they were grouped with smarter or more able students. Lou et al. (1996) confirmed that students benefited more when a group had only three to five students. When students are placed in mixed ability groups, they tend to perform better as they get to experience and learn different materials and can be corrected if they make mistakes.

Gillies (2007) identified some factors that should be considered by teachers when they form groups for CL. Groups should have mixed ability students so that the low ability students can benefit from interacting with more-able students. The more-able students also benefit because they often need to restructure their own understandings of the information they are teaching and explain it in terms that less-able students will understand. In doing so, they often develop a better understanding of the information they are explaining than they had previously.

Webb (2009) explained the effect of having uneven gender representation in groups formed for CL. When a group had more boys than girls in a group, the boys were found to interact more with each other and neglect the girls. On the other hand, when the girls outnumbered the boys, the girls tried to involve the boys in the group discussions to facilitate their learning. In either situation, the boys seemed to benefit and showed better results than the girls.

Interestingly, students of the same gender placed in one group seemed to enjoy the experience more and showed greater understanding of the task than students with mixed gender in a group. As a result, the students in groups with the same gender showed better outcomes and develop better understanding of the language (Strough, Swenson, & Cheng, 2001).

Teacher's Role in Cooperative Learning

The teacher's role in CL is essential, more so than in traditional learning where the teacher gives the lecture and students do not actively participate (Jolliffe, 2007). If CL is to be implemented properly, the teacher needs to plan lessons and decide on objectives, identify group roles, organize the classroom, identify the size of the groups, and decide on how to group students and provide the materials needed. The teacher must also monitor and intervene in groups when needed, explain and interpret the CL skills with criteria, and finally, assess the quantity and quality of students' achievements.

CL cannot be implemented if the following five elements are ignored (Gillies, Ashman, & Terwel, 2008). These elements ensure the role of a teacher as a facilitator:

1. Students need training in order to develop social skills (Johnson & Johnson, 2004);
2. Curricular documents and students' needs must be reflected in CL lessons and materials (Johnson & Johnson, 2004);
3. Students' feedback about their learning materials needs to be monitored to provide insights about the success of CL sessions (Thomas, 2005);
4. Instructors need to provide close and frequent monitoring of CL sessions (Johnson & Johnson, 1990);
5. Predominant learning strategies of students employed in the learning process need to be identified (Johnson et al., 1994); and
6. Group members must be assessed individually, feedback must be given to a group and its members, and suggestions for further improvement must be provided (Johnson et al., 1994).

Methods of Cooperative Learning

According to Slavin (1995), CL evolved in the 1900s but most of the work was done in the 1970s and the 1980s. CL can be implemented using more than fifty methods (Kagan, 1992). A method is selected on the basis of the type of educational purpose, the student population, and how it is implemented. Researchers have designed many models of CL to suit a wide range of different subjects and age levels (Thanh, Gillies, & Renshaw, 2008). In this study, the researcher reviewed widely-used methods of CL, as presented in Table 2.1.

Table 2.1

Methods of Cooperative Learning

Methods	Researcher	Year	Subject	Level
Student team achievement divisions (STAD)	Slavin	1978	All subjects	All levels
Team games tournaments	DeVries & Slavin	1970	All subjects	All levels
Team assisted individualization	Slavin, Leavey, & Madden	1987	Maths	Grades 3-6
Cooperative integrated reading and composition	Slavin	1987	Reading and writing	Upper elementary grades
Learning together	Johnson & Johnson	1986	All subjects	All levels
Group Investigation	Sharan & Sharan	1992	All subjects	All levels
Jigsaw and Jigsaw II	Aronsen	1978	All subjects	All levels

(Sharan, 1994)

Benefits of CL

Research has demonstrated the use of CL methods in classrooms to be beneficial for students as well as teachers. Slavin (2000) referred to CL as one of the most beneficial inventions of the present time. CL contributes to decreased anxiety and an increase in students' motivation; it also increases students' learning outcomes, enhances students' social skills, and increases both student participation and student self-esteem. CL provides the benefits of developing a feeling of self-confidence as the fear of communicating with the teachers is lowered and students are inspired to learn a new language more effectively (Gillies, 2003a). Adeyemi (2008) noted that learners who are exposed to the CL method obtain higher academic achievements than their peers who do not participate in CL.

What is more, CL assists students to feel more comfortable and to decrease the anxiety in the classroom. Anxiety is a feeling of nervousness that every student, young or old, may feel when he has to speak in front of a large group of people. Johnson, Johnson, & Smith (1991b) described anxiety as a major hindrance in the development of optimistic and constructive relationships. Anxiety tends to be lower in a student when he is asked to speak in front of a

few people. Students studying and learning in groups are found to have less anxiety among them and they are more enthusiastic towards learning a new language and feel a sense of confidence when using the language as part of the group for improvement and learning purposes (McDonough, 2004).

Mayer (2003) highlighted that CL is a successful teaching method in which small groups use a variety of learning activities to improve their learning of a particular task. Sharan and Sharan (1992) also spoke in favour of CL methods. Sharan and Shaulov (1990) stated that such methods are better than the traditional ways as the students learn to work in groups and help each other, rather than competing with each other. The students know that success for their group can be achieved as a result of the combined efforts of all group members, which encourages them to increase their input and, hence, improve output (Lie, 2000). Group talks tend to decrease anxiety and increase motivation (Slavin, 1996). Shaaban (2006) found that CL consists of many benefits. As well as giving students a positive drive to learn, it also improves the self-concept of the students.

Johnson, Johnson, and Smith (1991b) claimed that CL enhances the desires of a student to succeed in a language as it asks for the student's involvement which, in turn, helps them to learn and remember what they learned. Ghaith (2003) stated that CL enables students to learn a second language in a friendly, fun environment. In this way, feelings of jealousy and competition are eliminated and students do not object to helping each other.

Johnson and Johnson (2004) stated that working in groups is more beneficial as different minds meet and share information. Gillies (2008) reported that CL improves academic results. Holliday (2002) believes that CL helps to improve listening, verbal, and writing skills as CL involves listening, reading and writing instead of just listening to a teacher speak or transmit information which is often not retained by many students for long.

Grouping students in small groups increases the efficiency of learning the English language, as they are able to share any problems they may be having and discover areas where they need to improve. Small group work involves listening to others speak the new language and converse in it without the fear of speaking alone in front of many people. CL makes it possible for students to develop feelings of mutual understanding and helps students learn to become independent learners (Sachs, Candlin, & Sachs, 2003).

One of the major benefits of CL is the growth of public communication skills. This is achieved by allowing students to talk, rather than to just listen in a classroom. The students are provided with the opportunity to discuss topics and enlighten each other with their understanding. Lin (2010) reported that CL provides a platform for the students to exchange their ideas and gain from the ideas of others. Similarly, Gillies (2004) found that students learn better when they converse and share their knowledge with each other.

Slavin (2000) emphasized the fact that group communication will boost the goals of a student and they can learn more than they would in a traditional student-teacher discussion. Carter (2001) stated that CL leads to the development of verbal and listening skills. Leadership skills are developed and students learn to attain trust of others and vice versa.

In contrast, a negative environment is produced in classrooms where students are made to compete with each other in classrooms; no one is willing to help others to overcome their weaknesses in order to achieve a positive outcome for the group. This is not the case in CL methods, where the students share what they learn and discuss different ways of dealing with each other's weaknesses in learning a language. Abdullah (2002) stated that a second language is best learned by communicating with people in that language in an interactive environment.

Lie (2000) stated that CL has the benefit of developing confidence in and among students. Self-esteem is increased, which affects the work input as students take initiative and show interest in the learning process. All of this results in a fruitful output and the creation of a brighter learner. Another indirect benefit is that the students are able to make new friends and enjoy the time they spend in school, rather than trying to skip school and wish for it to end (Slavin, 1995).

Difficulties in Implementing Cooperative Learning

CL is a method of learning which brings with it many benefits for the learner, but, along with these positive aspects, it also has some challenges. Johnson and Johnson (2007) pointed out the difficulties that the students may face through this type of learning, including personality differences, with some students putting in less effort while others would have to do more work. Similarly, low ability students may not take part in the learning process; they may leave group participation to the high ability students, letting them benefit from the learning.

This can be avoided if each student is given a specific task which they have to perform.

Other disadvantages are highlighted by Herreid (2009). For instance, the administration, faculty, and students often do not welcome changes in methods of teaching, as time is wasted in managing the changes. Large classes are also difficult to manage in a cooperative setting. In addition, some students do not like to work in groups and find it difficult to cope with the opinions of others (Herreid, 2009).

Students usually choose to study in peace and alone. A cooperative setting leads to a noisy classroom where one cannot think and come up with unique ideas. Some students are shy by nature and they feel more comfortable in initiating their own questions, rather than being confronted by the teacher in front of others. Students may feel more comfortable in learning from teachers, as some students who are not used to working in groups will not accept the information being given to them by their group members as reliable. Some students have a natural tendency to compete and they may limit the amount of information they share with others so that they can achieve better academic grades than their group members. This act can harm the learning process of other group members who trust each other.

Shachar and Sharan (1994) proposed that students who are learning in an individual setting gain little understanding of what they learn and thus lack conceptual learning. The students concentrate more on the academic substance of the subject matter, rather than the shared experience of learning the material together in a positive learning environment. Group discussions can lead to intolerance in some students and cause negative feelings to develop among the students. Slavin (2000) also pointed out that group learning can lead to a noisy classroom and cause discomfort for the students who like to study in a quiet environment.

All these challenges can be overcome with the help of faculty members and teachers, the cooperation of the students, and through adequate implementation of CL. Students should be given time to understand their classmates, to develop friendships, and enjoy the experience of learning as a whole. A teacher has to be more organized in order to manage students studying in a CL situation (Johnson & Johnson, 2007).

Traditional Learning and Cooperative Learning

Johnson and Johnson (2004) proposed that students must keep in mind, while learning, that whatever help is provided to them by their teacher and fellow students will enhance their personal knowledge. This is in contrast to individualistic learning, which, according to Johnson and Johnson (1999), is characterized by:

- a lack of interaction between students, which decreases the knowledge enhancing capabilities;
- students' negative attitudes towards each other and the teacher also;
- reduced personal decision-making capability of individual students, since a majority of the group members rely mostly on the overall opinion of their group; and
- only the more able students leading group discussions.

Johnson, Johnson and Holubec (1998) pointed out the differences between traditional learning and CL groups as shown in Table 2.2.

Table 2.2

Differences between Traditional Learning and Cooperative Learning

Traditional learning	Cooperative learning
No interdependence	Positive interdependence
No individual accountability	Individual accountability
Homogeneous membership	Heterogeneous membership
One appointed leader	Shared leadership
Social skills ignored	Social skills directly taught
Teacher ignores groups	Teacher observes
No group processing	Group processing occurs

Freeman and Freeman (1994) stated that there are many traditional methods in learning English as a Foreign Language (EFL); for example, the audiolingual method and the grammar translation method. EFL learners who are in settings which use these teaching

methods work alone and they do not interact with each other to learn different skills of the target language. Yan (2010) highlighted that cooperative language learning when used with foreign language learning has a strong effect on EFL learners' achievements as compared to traditional learning styles. In the EFL classrooms, CL assists learners with academic and social skills. CL enables the EFL learners to interact with each other and develop their speaking skills (Yan, 2010).

Al-Hazmi (2008) declared that traditional methods concentrate on whole-class instruction in EFL classrooms. The teacher is the source of information and students do not participate; they do not have the opportunity to interact with the teacher as well as their classmates. CL can benefit EFL learners where traditional learning methods are lacking; for instance, CL can establish an environment that gives EFL learners the opportunity to interact with each other in a positive environment while practicing the new language.

The teachers' role in a CL environment is different from their roles in traditional learning (Gillies & Boyle, 2010). The teachers' roles in CL are: choose and divide the lessons for groups; train students in cooperative skills; arrange the classroom and assign roles; ask higher-level questions; intervene and observe; and play a more sophisticated instructional role. In contrast, teachers' roles in traditional learning are: follow the course profile; try to keep students in their chairs; provide long lectures; do not take support or encourage student interaction and participation; and ignore teamwork skills.

Theoretical Perspectives on Cooperative Learning

This section presents and discusses two theoretical perspectives that help to explain how students learn when they work cooperatively together: constructivism, including personal constructivism and socio-cultural theory, and social interdependence theory.

Constructivist theories.

Interaction with other learners assists children to develop their verbal skills and their thinking power. Mercer (1996) stated that for children to develop their skills and thinking power, they need to interact with other children and their peers. In this way, they can share their personal beliefs and practices. This has an additional advantage of improving speaking power in

children. Mercer's statement can be explained by two theoretical perspectives: *personal constructivism* and *social constructivism* (also called socio-cultural constructivism).

The first type of constructivism, personal or individual constructivism, is based on Piagetian theory. Personal constructivism posits that, "individuals are continually engaged in a process of cognitive construction which helps them organise their experiences to create order as they adapt to the environment" (Gillies, 2009, p. 30). It differs from social constructivism as it works through the ideas of one individual without the interference of others' opinions or experiences (Piaget, 1997). The interaction of peers plays a vital role in personal constructivism. Every person has his own point of view and, when they are placed in situations where they have to work in groups, their opinions differ and it becomes difficult for them to produce a positive outcome as not following one's opinion could make him feel less superior. In this way, a stressful environment arises with ill feelings among the group mates.

It has been shown that students who cannot complete a task by themselves can do so when they interact with others. Mugny and Doise (1978) surveyed children who were not properly skilled. They were asked to create a sample of a village with each house facing a unique direction; as a result, each child created a village with no specific point of reference. They were then put into groups comprised of a highly skilled, a moderately skilled, and a poorly skilled child and asked to complete the same task. As a result of working in these groups, the children showed an excellent outcome which demonstrated that interaction of children while working and studying helps them to problem solve more efficiently.

Social constructivism, also called socio-cultural constructivism, is a means by which adults and peers help a child to learn new ways of thinking through their experiences and by allowing children to communicate with them to understand what they learn and bring it into practice (Gillies, 2009). Proposed by Vygotsky (1980), social constructivism asserts that children can be helped to comprehend new ideas by socializing with other children. According to Wertsch (1984), the introduction of new or unfamiliar ideas can be achieved by communicating with others. He described four steps that a child takes while learning new ways of thinking. The first step is by working on an activity that is not associated with the assignment, followed by responding to others' commands, building some form of association with the speech and assignment given by an adult, and finally, being able to carry out the assignment without any help from the adult. Wertsch raised the idea that a child's learning

can be improved by the efforts of others, enabling them to work on their own in the later stages.

To teach children, it is necessary for the teachers to know each child's level of understanding so that they do not waste time re-teaching concepts the child has already grasped. Instead, the teacher can utilize that time to work on the specific weaknesses and learning needs of each child (Pressley, 1996). This is in line with Noddings (1984), who said that teachers should allocate their time to help students form ideas and utilize them in their practice. Teachers encourage cognitive growth in children by exposing them to conditions and allowing them to solve the task with the help of other children through group work. Social interaction leads to improvement in ways of comprehending matters, communication skills, and new ways of thinking (King, 1999).

Personal constructivism and social constructivism are two ways of making meaning from one's learning experiences. In personal constructivism, a child learns by reflecting on his own experience, while in social constructivism, he becomes aware of others' experiences and, thus, is provided with opportunities to learn more and unfamiliar ideas.

Personal effort and social interaction both play a unique role in developing creativity in children, which they need in order to progress (Gillies, 2009). Doubts and misunderstandings are clarified through social interaction with peers as students work to solve their problems in groups, which is less stressful than the traditional teacher-led classroom. Learning with peers is a two-way communication process and includes debates where children are free to show their disapproval when they do not agree with something. Such sessions have social value as well and help to build a sense of humanity, thoughtfulness, and esteem for others (Damon, 1984).

Piaget (1932) expressed his disapproval of traditional schools in relation to moralities and social relations as such schools offer whole-class instruction with competitive examinations and homework which is expected to be done individually. His disapproval was based on the belief that these learning methodologies are contrary to academic and personal development because children learn by interacting with others.

Piaget's social transmission theory (1965) is similar to Vygotsky's zone of proximal development (ZPD). According to Piaget, a learner can only access new information when he

is able to understand it and when it is in his ZPD. Another way of making understanding easier is by working in peer groups where peers can extend each other's learning.

Further, Bruner (1990) and Dewey (1916, 1924, 1963) stated that cognitive development is enhanced by taking part in interpersonal communication. A language learner should not concentrate solely on learning the words of the language; instead, he should use the words as they are used in society. Dewey (1916) commented that in order to get experience, people should communicate and cooperate with each other.

Bandura's social cognitive theory (1986, 2002) provides an example of triadic mutuality where the environment, personal, and cognitive factors and behaviours work in association with each other. Modelling provides a pathway for developing the thoughts and learning ways of a learner. Bandura's statements on modelling sound similar to Slavin's model of CL (Slavin, 1995); both are related to the concepts of peer modelling and cognitive amplification.

Social interdependence theory.

Morton Deutsch, building on the theory of Kurt Lewin, proposed a theory of cooperation and competition. Deutsch (1949a, 1949b, 1973) argued that the type of interdependence between students determines how they interact with each other and this, in turn, largely determines the learning that is achieved. Social interdependence refers to interference from others that impedes achievement of an individual's objectives (Johnson & Johnson, 2003, 2009). This interference could be cooperative, in which case it should be taken positively, or competitive, in which case should be taken negatively (Johnson & Johnson, 2002).

Slavin (1995) built on Deutsch's theory and proposed a two-element theory of CL containing positive interdependence and individual accountability. Similarly, researchers Johnson and Johnson (2008, 2009) stated that there are five elements required for the success of CL: positive interdependence; promotive interaction; individual accountability; interpersonal and small group skills; and group processing. These key elements are outlined in the following sections.

Positive interdependence.

Positive interdependence is "the perception that you are linked with others in a way so that you cannot succeed unless they do and vice versa" (Johnson & Johnson, 1991, p. 56). Deutsch (1949) was the first researcher to identify the difference between groups in terms of whether they cooperate or compete with each other. In fact, it is vital to organize positive interdependence in CL groups so students understand that they are required to help and support each other's learning (Johnson & Johnson, 2009).

There are two types of positive interdependence: outcomes interdependence and process (or means) interdependence (Gillies, 2007). The following table clarifies the two types of positive interdependence experiences when students work cooperatively.

Table 2.3

Methods of Positive Interdependence within Cooperative Learning

Outcomes interdependence	Process interdependence
1. group goals	1.role interdependence
2. group rewards or celebrations	2.resource interdependence

(Liao, 2005)

Outcome interdependence occurs "when group members are striving to achieve a goal or reward for their efforts" (Gillies, 2007, p. 34). It is essential to know the two types of outcome interdependence .The first one is to develop goals and purposes of a particular group, while the second one is to achieve a group reward. Every lesson has its goals; the group goals have to be lesson goals. Students should participate in the lessons and every member of the group should know their particular material. Students learn that they cannot succeed alone; members of the group need to work together to reach their goals.

Process interdependence involves role interdependence and resource interdependence. When the teacher wants to establish role interdependence in his or her class, he gives each member of the group a special role, such as checker, encourager, taskmaster, quiet captain, elaborator, and recorder. However, when the teacher wants to form resource interdependence, he provides his or her students with materials they can share. Johnson and Johnson (1999) conducted four studies related to the two types of process interdependence .The first study

examined the effects of the combination of goal and resource interdependence, while the second was about goal interdependence only. The third study was about resource interdependence only; the fourth study involved neither. Johnson and Johnson (2003) found that between the four treatment conditions, in-group students achieved the best results when they used both resource interdependence and goal interdependence, whereas students obtained the poorest achievement outcomes when they used resource interdependence only.

Individual accountability and personal responsibility.

Individual accountability exists when each group member understands that they are responsible for completing the assigned tasks and assisting others to complete their assigned tasks as well (Holliday, 2005). As noted by Gillies (2007, p.39), "Individual accountability involves group members accepting personal responsibility for their contributions for attaining the group's goal." Johnson and Johnson (1991) mentioned four important ways of ensuring that each group member is individually accountable for completing his or her work in the group; a teacher must:

1. Assess how much each member is contributing to the group's work;
2. Provide feedback to groups and individual students;
3. Help groups avoid redundant efforts by members; and
4. Ensure that every member is responsible for the final outcome.

Promotive interaction (face to face).

Promotive interaction, according to Johnson and Johnson (2009) "occurs as individuals encourage and facilitate each other's efforts to accomplish the group's goal" (p. 368). It is characterized by: individuals acting in trusting and trustworthy ways; exchanging needed resources; providing efficient and effective help and assistance to group members; being motivated to strive for mutual benefit; advocating exertion of effort to achieve mutual goals; having moderate levels of arousal that are characterized by low anxiety and stress, and taking the perspective of others more accurately and thus being better able to explore different points of view (Johnson & Johnson, 2009).

Interpersonal and small group skills.

It is worth noting as Gillies (2007) did that "[p]lacing children in groups and telling them that they are to cooperate does not ensure that they will use the interpersonal and small-group skills needed to work effectively together" (p. 41). Group members should be taught the skills that are essential for establishing CL. Gillies and Ashman (1998) conducted a study that investigated the effects of structured and unstructured cooperative groups on children's behaviour and interaction. They found that when students had been trained to work together, as they had been in the structured groups where they were taught interpersonal and small group skills, they were more cooperative and helpful than their peers who had not been trained to cooperate. Johnson and Johnson (2008) identified four important points that participants must follow to coordinate efforts between group members: get to know and trust each other; communicate accurately and unambiguously; accept and support each other; and resolve conflicts constructively.

Group processing.

Group processing is defined as "reflecting on a group session to describe what actions of the members were helpful and unhelpful and to decide what actions to continue or change" (Johnson & Johnson, 1991, p. 22). Further, the "purpose of group processing is to clarify and improve the effectiveness with which members carry out the processes necessary to achieve the group's goal" (Johnson & Johnson, 2009, p. 369). Gillies and Ashman (1998) found that students who work in groups where group processing has been established obtained better achievement outcomes than students who work in cooperative groups where group processing has not been established.

According to Gillies (2007), group processing involves the students ensuring that everyone in the group is engaged in one of three social skills:

1. Summarizing group members' ideas and information;
2. Encouraging members to participate in group discussion; and
3. Encouraging members to ensure that decisions made by the group are supported by members.

To sum up, the five elements needed for successful CL include: positive interdependence, individual accountability, promotive interaction, interpersonal and group skills, and group

processing. There is a connection between social interdependence theory and socio-culture theory in terms of social interaction. In the following section, socio-cultural theory and second language learning will be highlighted and discussed.

Socio-cultural theory and Second Language Learning (SLL).

Many researchers of second language theories, including Lantolf (2000), Lantolf and Appel (1994), and Roebuck and Wagner (2004), have applied the ideas of Vygotsky (1980) and related scholars to second language learning. Socio-cultural theory is a theory of human learning that describes the function of social communication in cognitive development. It finds a practical foundation in the ideology of Dewey (1916, 1924) who believed that learning should be an active and dynamic process that responds to the child's developing social interests and activities.

Socio-cultural theory consists of varied standards that can be systematically classified into three themes: social interaction, internalization, and the zone of proximal development (ZPD). The socio-cultural theory of Vygotsky discusses the importance of societal communications and the behaviour of human nature, such as the internalization procedure (Robbins, 2003).

Vygotsky was a famous theorist who highlighted the importance of social interaction in cognitive development. According to Vygotsky (1980), socialization is a basic pillar of cognitive development. He believed that learning initially occurs at the social level, that is, between people, and then at the individual level, so that the internalization of knowledge begins with an interpersonal process, followed by an intrapersonal process.

Vygotsky stated that socialization aids in learning, as working in groups helps the learner to work comfortably in his zone of proximal development (ZPD). The ZPD is the space between the present level of development, which is the progress a learner achieves without any external assistance, and the level of potential development, which is recorded by examining how much the learner learns with the help of his peers or others (Vygotsky, 1980). He defined it as "the distance between the actual developmental level as determined by independent problem solving and the level of potential development determined through problem solving under adult guidance or in collaboration with more capable peers" (Vygotsky, 1978, p. 85). It is suitable to the development of learners of any age (Kell, 2007).

Donato (2000) commented that the ZPD refers to the act of social interaction that includes an expert and a novice in identifying what skills the learner can achieve without assistance. Social communication with peers improves learning, as support from peers who have different abilities helps the learner to progress with proximal development.

Vygotsky (1980) stated that learning is facilitated when the learner socializes with the external environment. Socio-cultural forces such as social contribution, the setting of activities, relationships, and historical change help a child to learn and develop (Sfard, 1998). These forces are regarded as a turning point for an individual and his social background (Brown, Collins, & Duguid, 1989).

Internalization is a process that takes place immediately in social practice and in the mind of an individual (John-Steiner & Mahn, 1996). Internalization refers to changing the outside activities into an internal psychological procedure by processing the activities inward (Vygotsky, 1980). Vygotsky proposed that internalization takes place between the interaction of communal and internal domains (Robbins, 2003). He discussed two psychological planes: an intermental plane, and an intramental plane (Lantolf, 2000) Initially, the process occurs on an intermental plane in interaction with another person or other people and cultural artefacts. Afterwards, the process is performed by the person through a psychological negotiation in the intramental plane.

Vygotsky (1980) outlined some conversions in internalization procedures:

- A procedure that characterizes an outside action is redeveloped and continues to take place on the inside;
- An intrapersonal procedure is produced by the transformation of an interpersonal procedure; and
- The conversion of an interpersonal procedure into an intrapersonal one due to many developmental actions.

Vygotsky (1980) stated that a child's cultural development occurs on two planes. The first plane is a social plane (inter-psychological) and the second is a psychological plane (intra-psychological). Internalization works through a socio-cultural process as well as through individual functioning. It changes the process of learning and development and modifies its structure and roles (Penuel & Wertsch, 1995) and construction, dealing, and

alteration are modified with the help of socially shared events (John-Steiner & Mahn, 1996).

The zone of proximal development (ZPD), as defined by Vygotsky (1980), is the difference between the original development level established by self-regulated problem-solving and the level of potential development established through problem-solving under the supervision of an adult or other competent peers (Vygotsky, 1980). The ZPD is understood in different ways by different teachers and is one of the best known concepts in Vygotsky's socio-cultural theory. Mattos (2000) refers to ZPD as a part of learning which concentrates on the capability of a person. Lantolf (2000) said that the ZPD sets levels for the learners which they should be able to reach with the help of a more capable person. Ohta (2000) referred to the process by which a student learns with the help of a more capable person as scaffolding.

Newman and Holtzman (1993) observed that Vygotsky's strategy was essentially a CL strategy, because when he created heterogeneous groups of children, he provided them not only with the opportunity, but the need to cooperate on joint activities by giving tasks that were beyond the development level of some, if not all, of them. The concept of ZPD explains two things. Firstly, it is a way of understanding developmental change where children complete tasks with the assistance of more capable others before working independently by themselves. Secondly, adults or more skilled peers directly or indirectly positively influence the learning and development of the child (Gellin, 2000). Lantolf (2000) stated that the ZPD is a metamorphic space which allows a person to comprehend and learn new tasks. Lantolf (2000) and Robbins (2003) referred to the ZPD as something that is not a real or viewable space.

Socio-cultural theory proposes that learning takes place when the learner meets the outside environment (John-Steiner & Mahn, 1996). In a classroom, in order for the student to understand the concepts, he must practice the concepts and interact with peers or teachers to widen the meaning of the concepts (Jaramillo, 1996). Vygotsky (1980) believed that when a learner is at the zone of proximal development for a given assignment, the support of a teacher provides the learner with the momentum to achieve the given goal. In this way, the attitude of the learner changes from learning individually into a social act (Rogoff, 1991).

Cooperative learning and second language acquisition theories.

The practicality of CL in helping students to learn a second language is supported by language acquisition theories. Learning a second language is influenced by a mixture of participation, productivity, and numerous context variables. Kagan (1995) studied some of these context variables and came to the conclusion that CL helps to achieve higher levels of proficiency achievement in another language in different learning environments. An L2 such as English can be efficiently learned and improved through the CL method as student interaction increases their chance of receiving L2 input and interaction, which in turn enhances their academic accomplishment.

There are additional important benefits of cooperative language learning. Cooperative activities around the curricular content can provide more opportunities for use of the new information and lead to the development of both academic language and social language. In addition, studies indicate that there are beneficial effects of CL at higher levels of reasoning, more frequent generation of new ideas and solutions, and greater transfer of what is learned within one situation to another than occurs in competitive or individualistic learning (Johnson & Johnson, 2002).

In the following sections, theories from second language acquisition which relate to the use of CL, are discussed. In particular, there are three important theories (input hypotheses, interaction hypothesis, and output hypothesis) that provide theoretical justification for the use of CL in L2 pedagogy.

Input hypothesis.

The 'input hypothesis' is one of the five hypotheses that constitute Krashen's Monitor Model (Krashen, 1982, 1985, 1994, 2003). The proposition behind this hypothesis is that "second language acquisition is driven by comprehensible input, that is, language that is read or heard that is just a little beyond what the learner already has acquired" (McCafferty, 2006, p. 18). The input hypothesis claims "that language input (listening and reading) is important in the language program and the fluency in speaking or writing in a second language will naturally happen after learners have built up sufficient competence through comprehending input" (Wang & Carolyn, 2010, p. 175).

Krashen (1981) proposed that language acquisition can be made easier with the use of comprehensible input. Once a particular level is achieved, the individual is motivated to strive to attain the next higher level so that level 'i' is reached, the next level becomes '+1' or 'i+1'. This is an evolution of the language capacity, where emphasis is placed on reaching the new level of 'i+1', when level 1 has already been attained.

Krashen, in the third part of his input hypothesis, claims that, in the initial stages, the effort is deliberate, but later on, when this input becomes engrained, the 'i+1' is provided automatically by the brain without any conscious effort. It is necessary, however ,that the message received is well understood. This and other present relevant information will automatically allow for the 'i+1' (Krashen, 1985).

It can be said that learners learn the language correctly when they hear, read, and understand it (Larsen-Freeman & Long, 1991), but if the language is complicated and convoluted as a consequence of it being unclear, it is unlikely that the learner will be able to understand acquisition and so the input will be unable to aid second language acquisition. However, the input provided by group mates in a CL class may be more easily understood by the learner because the level of proficiency of the group mates may be similar.

Krashen's input hypothesis has received numerous criticisms since he did not clarify the connection between comprehensible input and learning acquisition.The other reason why the input hypothesis attracted criticism is that it exaggerated the significance of logical input in grasping a language. White (1987) is another critic who stated that comprehensible input is important for learning a language; however, complicated input also helps to learn a language, although difficulty with understanding input results is a negative response from the learner. In his criticism of Krashen's input hypothesis, Ellis (2003) stated that comprehensible input helps in learning a language. However, it is not compulsory for acquisition and provides no assurance that it will occur.

However, Krashen (2003) provides evidence from first language acquisition to show that the input hypothesis actually works. A child usually learns a first language with parents or carers who modify the language in a manner to facilitate the child's learning. However, this particular method of communication is not an actual attempt on the part of the carer to teach the language to children. While the carer modifies the language to facilitate input, he does not

teach it. The carer ensures that the language being communicated is syntactically simpler than the adult language.

Simple codes are a prominent feature in second language acquisition and they are also explained in the input hypothesis. No matter the age, any person learning a new language becomes an acquirer. Again the similar patterns of language learning are employed, meaning there is a repetition of i+1 and the input becomes modified as the level of complexity of the language increases.

These modified inputs, in turn, can be one of three types: foreigner talk, teacher talk, and interlanguage talk. The first type refers to those modifications that native speakers of a language make in order to communicate effectively with those who are less proficient in it. The second refers to the kind of language style that is used by the teachers or language facilitators in a teaching environment. Finally, the interlanguage talk is the type of language used by those people for whom it is the second language. As per the input hypothesis, the simplified codes are a useful aid to those learning the second language, and are analogous to the attempts that are made with children acquiring language skills. The hypothesis also advocates the use of rough and comprehensible inputs over the finely tuned ones to facilitate learning, by following the concept of 1+i.

Krashen (2009) elaborated on his input hypothesis recently, also known as the 'comprehension hypothesis'. The hypothesis posits that a person can learn a language when he communicates in that language and finds it easier to comprehend a language when he reads and listens to it. This is how one achieves comprehensible input (Krashen, 2009). Commenting on this revised formulation, Weinrich (2009) stated that Krashen puts stress on input when he talks about comprehension in this situation and learner production does not aid in gaining access to a language.

To summarise, despite criticisms on the nature of the input in the hypothesis, there is no denying that language learning does require input and a CL learning environment has the potential to maximize this input. CL allows students to receive input from their teachers as well as their peers. Such input plays an important role in L2 learning, as emphasized by the input hypothesis as well as other theories that stress the importance of participation in learning a second language. In terms of CL, McCafferty (2006) argued, "that despite the fact

that in interaction learners may hear incorrect forms of the L2 from each other, student production should nonetheless be used as one part of the curriculum for their methodology" (p. 18).

Kagan (1995) stated that students change their thoughts and ideas for understanding tasks; that is how CL allows the students to create understandable input for themselves and other group members. On the other hand, although the role of input cannot be denied, input by itself does not translate into language output. Therefore, it is important to examine the interaction hypothesis which can explain how input facilitates language acquisition by creating opportunities for negotiation of meaning. Learning a language via cooperative language learning enable EFL learners to perceive input and output, as well as the negotiation processes (Yan, 2010). CL interaction helps the learners negotiate for more comprehensible input and modify their output to make it more comprehensible to others students (Kagan, 1995). Jia (2003) noted that effective foreign language learning depends on structuring social interaction to maximize the needs of communication in the target language.

Interaction hypothesis.

Long's (1983, 1985, 1996) interaction hypothesis concentrates on "the role of the learner in social interaction, how the learner is able to exert agency over language input" (McCafferty, 2006, p. 19). Long (1996) claimed that interaction facilitates comprehension and acquisition of semantically contingent speech and negotiation for meaning. Long (1996) also stresses the importance of interactional modifications that occur in negotiating meaning: "The frequency of occurrence of the target form brings about salience, negative feedback, and input modifications to increase comprehensibility and content predictability" (Wang & Carolyn, 2010, p. 176).

The role of interaction is emphasized by researchers providing support for the interaction hypothesis. A friendly environment allows students to interact freely without any hesitation, which may not occur in a classroom strictly controlled by the teacher (Rulon & McCreary, 1986). Moreover, negotiation of meaning is not the only method where modification of interaction can take place (Jacobs, McCafferty, & DaSilva Iddings, 2006). Students' social interaction aids in improving the negotiation of meaning which assists SLA.

Many researchers have studied the impact of the quality of learner classroom participation on

their L2 achievement. However, the results have not been conclusive. For instance, Strong (1984) and Seliger (1977) discovered positive results. In contrast, Allwright (1980) found opposite results. Long (1980) and Newton (1991) studied the quality of learner participation in class and group work and showed in their research that the two-way interactional tasks result in increased negotiation of meaning.

Mackey (2007) concluded that positive results can be obtained when students get a chance to participate in a task and then make changes in their production after they have received feedback. Their language teacher should provide opportunities for meaningful communication so that they can share their thoughts with other students (Rivers, 1987).

Shi (1998) noted that groups having a two-way exchange of knowledge between co-learners produced a large number of interactions, but in instructor-led classes they had a limited number of interactions. Pica and Doughty (1985a) found that although students carried out ESL tasks more effectively during teacher-led classes than in student-student interactions, they had higher chances of attaining knowledge in group discussions with co-learners than performing activities designed by instructors. Doughty and Pica (1986) also performed a study comparing teacher-fronted and small group discussions through one-way and two-way tasks. The results of group discussions in two-way tasks offered more chances for discussion than in one-way tasks in which information flowed in one direction only. No difference was noted in the assignments studied under teacher-led cases.

In conclusion, these studies show that communication of individuals in small groups opens ways for cooperation and conciliation. This has a positive effect on the way of contact, which assists in learning an L2. The chances of learning for students are higher in the CL class as the chances of interaction and discussion increase which develops a less stressful environment.

Output hypothesis.

According to Swain's (1993) 'output hypothesis', to learn a second language it is important for the learner to communicate, write and accept others' feedback on their output. The output hypothesis presumes that input is essential to learn a language. However, "only input of the language is not good enough to get hold of the language" (Gass, 1997, p. 138). Swain discusses a number of ways through which output can contribute to SLA that input itself

cannot do. The suggested ways include increasing fluency of learners within meaningful language use and giving learners the chance of receiving feedback from others. All these can be achieved in a CL learning environment. For instance, one of the key characteristics of CL is to give students the chance to communicate with their colleagues, and it is believed that this communication can boost their language output.

Swain (1993) proposed four important ways in which output assists SLA which input alone cannot do: promoting fluency via meaningful language use, pushing learners to engage in syntactic processing of language, allowing hypothesis testing as to what works in the L2 in terms of comprehension ability and providing opportunities for feedback from others in such forms as negotiating meaning or supplying words.

The opportunity for groups to work together is one of the major considerations of CL (McCafferty, 2006). Long and Porter (1985) found that in a teacher-fronted L2 class of 30 students, the average time for student talk was only 30 seconds per student per lesson. In contrast, when students worked in groups of three for only one quarter of a 50-minute period, the quantity of student talk increased more than 500 per cent.

Swain's (1993) output hypothesis supports the use of CL in the EFL classroom. Similarly, Jacobs and McCafferty (2006) stated that CL provides the opportunity for students to work together in a group and talk to each other during the class. Kagan (1995) claimed that the benefit of CL in learning a language is that it allows more language productivity than a regular classroom organization. The research by Magee and Jacobs (2001) on the L2 classroom confirmed an increase in the learning capability of L2 learners. A jigsaw activity was tested in a teacher-led class, in CL, and in an unstructured group. Magee and Jacobs (2001) found that students in the latter two groups showed improvement in speech and took part in the activity more enthusiastically than in the teacher-led mode. The CL mode delivered better results than the unstructured group mode.

The CL method of learning provides the students with an opportunity to interact with each other in the class, increasing the familiarity of the language, hence making the language easier to learn. Proficiency in a language is essential for learners to expand their interlanguage system and communicate fluently in the desired language.

Output practice is used to present L2 learners with the opportunity to generate fruitful results in a group perspective (Muranoi, 2007). When students are allowed to discuss topics in the learned language, it enhances their communication level and helps them to gain confidence in the language. Izumi (2002) investigated whether it was output and visual input in a mixture or either of them alone that improved the learning of an L2 grammatical form. Muranoi (2007) stated that instructional treatments that draw out learner output in contextualized practice help to improve the ability of L2 learners to learn and produce better results. CL tasks play an important role in developing students' language proficiency, resulting in enhanced communication skills.

Empirical Studies on Cooperative Learning

Research on CL has been extensive. Johnson and Johnson (1991) demonstrated that due to the cooperative way of teaching, students were able to learn how to work in a team. Also, they contributed to the other students by helping each other develop a positive point of view and find solutions to problems. Gómez et al. (2013) found that language learners can improve their oral language, logical-mathematical, and social skills during CL. Moreover, Lee and Wang (2013) pointed out that the nature of the learning language tasks, learners' communication, and appreciation of different opinions were improved by the CL environment. Gagné and Parks (2013) highlighted that the learners needed to be capable of engaging in linguistically oriented scaffolding. However, a variety of scaffolding methods were in evidence. Francisco (2013) indicated that CL can promote students' understanding and perceptions by providing opportunities for learners to communicate with each other and enable them to build on one another's ideas.

Slavin (1991) reviewed 70 studies in different areas that used CL techniques for a minimum of four weeks in secondary and elementary schools and found that 61% of the studies showed that students obtained better results when they learned cooperatively than their control group peers. Further, Slavin (1995) reviewed a further 99 studies and found that only 5% of these studies extensively support control group gains, while 63% of these studies show appreciable support for CL.

Lord (2001) conducted a comparison between cooperative groups and control groups after examining 46 experimental studies. He found that only in two investigations did students

obtain higher grades in control groups, while 63% of the studies of CL were shown to be more effective. Students who study according to the cooperative teaching approach have high grades as compared to students who were taught using the traditional teaching method (Johnson & Johnson, 2004).

On the other side, Szostek (1994) claimed that students hide positive attitudes toward CL. Lin (2010) shows that both negative and positive attitudes are present among students during CL. For example, Chan and Galton (1999) in their study (cooperative learning in Hong Kong schools: Attitudes of teachers and pupils towards cooperative group work), revealed that only 40% of the students supported CL. Similarly, McLeish (2009) confirmed that students who have low grades do not support CL and they are in favour of traditional learning.

Johnson, Johnson, and Smith (1991b) noted that CL plays an important role in confidence building, helping students in achieving high grades and developing good communication skills. These are the findings that result from a review of over 575 experimental and 100 parallel studies, which have been conducted on CL for the past 90 years. In addition, students have positive attitudes towards team work (Gottschall & García-Bayonas, 2008) and other studies (Hagen, 1996; Philips et al, 2001; Rau & Heyl, 1990; Van Duyne (1993), cited in Gottschall & García-Bayonas, (2008)).

In a meta-analysis of 79 studies, Johnson and Johnson (1989) found that higher social support and self-esteem occurs when students have CL experiences than when they have individualistic or competitive experiences.

In the context of EFL, such as in Taiwan, it has been verified by many researchers that social relations can be improved, motivation can be increased, and goals can be achieved under CL (Chang, 1995; Chu, 1996; Lo, 1998; Wei, 1996; Yu, 1993). This contention has been demonstrated empirically by three major studies of recent time by Chen (1998), Chen (1999) and Liang (2002). Liang's study is rigorous, since various methods have been used in collection and analyses of data such as content analysis, testing, interviewing, observations and questionnaire surveys.

In addition, other studies conducted in Taiwan (Gómez et al., 2013, Kao, 2003; Liao, 2005) showed that motivation and speaking skills can be enhanced via CL. These studies were conducted on junior and senior high school students in Taiwan regarding CL and its effects

on their learning motivation and English speaking skills.

With regards to the Vietnamese context, Dang (2007), Le Ha (2004, 2006), Thanh, Gillies, and Renshaw (2008), Tuan (2010), Vo (2010) conducted various studies on CL among students of secondary and intermediate level where they analysed the experiences and perceptions of students. The results showed that language skills were improved, interpersonal skills were developed and creative thinking was promoted upon undertaking CL. However, not all studies are supportive of CL. Bock (2000) conducted studies on CL pedagogy in Vietnamese EFL classrooms at a tertiary level and found that students were unwilling to cooperate with the teachers.

In Turkey, Muhammad (2010) examined the implementation of CL groups to understand the effect on learning achievements and attitudes in college mathematics in the context of virtual online grouping coupled with in-class grouping .The study revealed that the students' mathematics achievements and attitudes toward mathematics improved as a result of cooperative grouping.

In Saudi Arabia, there are a few studies that have been conducted in CL (Algarfi, 2010; Alhaidari, 2006; Alharbi, 2008; Basamh, 2002). Alharbi (2008) conducted a study on the effect of using CL on EFL reading comprehension performance and attitudes of 60 students toward CL and students' motivation toward reading at three secondary girls' schools. A quasi-experimental design was used in this study. There were two groups: a control group of 30 students and an experimental group of 30 students. The results of this study revealed that there was no significant difference between the two groups in terms of students' motivation toward reading. However, the results showed that there were significant differences between the experimental group and control group in terms of reading comprehension performance and students' attitudes toward CL in favour of the experimental group.

Alhaidari (2006) investigated the effectiveness of CL to promote reading comprehension, vocabulary, and fluency achievement scores of male fourth and fifth grade students in an Islamic Saudi Academy (ISA) school in Washington. The results of this analysis showed no significant difference between the experimental groups and control groups for all pre-measures. In contrast, for the post-measures, the results of this analysis revealed significant differences between experimental groups and control groups on post-measures of

vocabulary and fluency and students' attitudes toward CL. The experimental groups obtained higher results for vocabulary and fluency measures and improved student attitudes than did their control group peers. However, the results indicated no significant difference between the experimental groups and the control groups on the post-measures of reading comprehension and students' motivation toward reading.

Basamh (2002) investigated teachers' and school principals' attitudes toward CL at private girls' schools in Jeddah in Saudi Arabia. The factors that probably could affect the implementation of CL at the schools were assessed. Participants of this study were 30 principals and 225 teachers from 30 private girls' schools. A questionnaire was used to collect data and the data were analysed by using descriptive statistics. The result of this study revealed that the attitudes of both teachers and principals were positive toward implementing CL at girls' private schools in Jeddah.

There have been a few studies that have measured the impact of CL on students' achievement of English grammar. One such study was Liao's (2005) quasi-experimental comparison group study which examined the impact of CL on the motivation, learning strategy utilization, and grammar achievement of 42 English foreign language students in two college classes in Taiwan over a three month period. Data was based on the learners' pre-test and post-test scores and the results revealed that CL had large, positive effects on motivation and English grammar achievement.

Numerous studies have been conducted looking at student interactions when they work cooperatively (Gillies, 2004; Webb, 1991, 1994, 2009; Webb & Mastergeorge, 2003a). Gillies (2004) compared cooperative groups with unstructured groups and concluded that cooperative groups provided more help to group members than unstructured groups. Webb (2009) stated that students who acquire help seek help by asking specific questions. The help seekers then absorb the explanations and use them in their tasks and future projects. In this way, their understanding is improved and the result is better work output. Such assisted learning behaviours can be seen in the Piagetian and Vygotskian theories on learning. Webb (1991) stated that constructive learning outcomes were the result of explanations given by one student to another. Inaccurate or complicated explanations, which do not remove the queries of help seekers, do not result in positive accomplishments as the learners do not understand anything and fail to perform their tasks efficiently.

Similarly, Terwel, Gillies, van den Eeden, and Hoek (2001) stated that teamwork and accurate information provided by the teammates are interrelated and improve learning tactics, whereas inaccurate information being shared in a group of students and may result in poor learning. Mastergeorge et al. (2003) pointed out that the students asking for help with specific questions were the ones who received the best explanations and benefited from them. Specific questions such as 'Why is the answer 31?' gets a more detailed explanation than a general question or statement, such as, 'I do not understand how you got that result.'

The effect of efficient communication has an important effect on learning (Gillies & Ashman, 1995; Webb & Mastergeorge, 2003b; Webb & Palincsar, 1996). Efficient communication behaviour includes providing information for the peers who require an explanation and a clear implementation of the explanation (Webb & Mastergeorge, 2003a). Learners who help each other by giving explanations are able to benefit other learners if they have experienced working in cooperative groups. Ross (1995) stated that helping behaviours could be improved if the learners are advised and guided on how to ask for help and how to help others.

Researchers who have studied peer interactions and learning have used different methods. Fall, Webb, and Chudowsky (2000) preferred classifying accurate information in a helping behaviour into a detailed coding scheme that differentiated high and poor quality communication helping behaviour when seeking, providing, and implementing help. Vedder (1985) also noted that helping behaviour was an important factor in cooperative group learning. He proposed that helpers should be aware of the information they are transferring and have implemented the information themselves; if this is not taken care of, then the students seeking help can be misguided, resulting in poor learning and weakened accomplishments. Fall, Webb, and Chudowsky (2000) noted that executive help-seeking refers to asking for an answer, whereas instrumental help-seeking is asking for an explanation.

Gillies (2004) and Webb (2009) believe that group discussions are essential for learning. This is supported by Shachar and Sharan (1994) who investigated differences between school age learners in cooperative groups and those in uncooperative groups. The cooperative group members were found to be more confident and used more words to converse than their peers in uncooperative groups. The rationale behind this is that learners in cooperative groups are given tasks to perform, whereas their peers learn in teacher-led traditional class settings.

Gillies and Ashman (1998) stated that CL groups provide enhanced learning outcomes for the learners. Webb and Mastergeorge (2003b) stress that there is only a positive outcome in the group's results if the help provided is on time an accurate. Despite these factors, a positive outcome is best accomplished if the learner implements the help attained.

Research indicates that although many students seek explanations, only some have the potential to give explanations. The speaking and thinking skills of the student giving the explanation can be improved; the listener can learn more efficiently if he is directly addressed and able to listen and tentatively understand. Usually a highly knowledgeable student gives the explanation to a less knowledgeable student. Webb and Palincsar (1996) believe that such methods of teaching result in positive accomplishments.

It can be seen from the review of the empirical literature that there have been very few studies on students' behaviours, processes, and their interactions in the CL classroom in terms of learning English as a foreign language. Further, in the EFL context, research results on students' behaviours and interactions of CL are still in the beginning stages, as researchers still do not know precisely what is happening in the EFL classroom. This is also true for Saudi Arabia as an EFL context. Moreover, the limited amount of research on CL that has been carried out in learning EFL has mainly focused on students' achievements in CL rather than students' behaviours, interactions, and experiences in the EFL classroom using CL. At the moment, research on CL is not present in the context of Saudi Arabia, except for a few studies on girls' schools. This is the primary motivation behind the present study, which aims to investigate the following research questions and contribute to the literature on the experiential dimension of CL in the EFL context.

Chapter Summary

This chapter provides the reader with a wide overview of the literature related to CL and individual learning. It presents the definition of CL, methods related to CL, group composition, teachers' role in CL, methods of CL, benefits of CL, difficulties in implementing CL, and differences between traditional learning and CL. Furthermore, it highlights the main theories that support CL such as constructivist theories, social interdependence theory, socio-cultural theory and second language learning (SLL), CL and second language acquisition theories. Next, this chapter reviews the empirical studies that

have been conducted on both cooperative and traditional learning. Lastly, this chapter highlighted that the one main rationale for this study is to investigate why CL learners gain greater academic achievement and what is happening in CL groups to enable them to learn more skills. In the following chapter, the researcher will present and discuss the methodology of this research.

Chapter 3: Research Design and Methodology

Introduction

This chapter clarifies and provides a map of the research methods that were used to conduct the research and collect the data. There are two sections in this chapter. First, a discussion of the quantitative and qualitative methods are reviewed and highlighted. This is followed by a general justification for using mixed methods in this study, including a rationale for using a quasi-experiment design as well as the data collection instruments that were used. The second part of the chapter discusses the research setting, the participants, and a detailed description of the training program. After that, the study instruments are presented, which consist of the English achievement test, classroom observations, and student interviews. Issues related to data collection, such as validity and reliability, are also addressed. Finally, data analysis, the limitations of the study and ethical issues in the study are discussed.

This study aims to examine the effectiveness of CL in comparison to traditional small group instruction in enhancing English as a Foreign Language (EFL) students' grammatical competence in Saudi Arabia and the impact of CL intervention on their behaviours and classroom learning experiences. The main research questions guiding the investigation are:

1. What is the effect of CL in comparison to traditional small groups on the achievement of grammatical knowledge for EFL learners?
2. What is the effect of CL in comparison to traditional small groups on the behaviour states of EFL learners?
3. What is the effect of CL in comparison to traditional small groups on the verbal interaction of EFL learners?
4. How do EFL learners respond to their new experience in learning English in a CL environment?

Research Design

A quasi-experimental pre-test—post-test comparison group research design was used for the study to compare the groups that used CL (the experimental condition) and the groups that used traditional small group learning (the comparison condition) in terms of students' achievements in learning EFL, behaviours, and interactions, and experiences of CL. In this

study, small traditional learning refers to classrooms where students may work in small groups but are not trained to work cooperatively. EFL learners in the small traditional groups environment learn English tasks in groups without training in cooperative learning. However, their peers in cooperative learning have trained in the cooperative learning method

The quasi-experimental design carries the conventional logistics of a quantitative approach, although qualitative data were also collected. This design allowed the researcher to observe and study students in natural classroom environments where he was able to monitor the outcomes of CL on the English achievement of students. It also enabled the researcher to evaluate how different groups cooperate, as well as examine how students behave and interact with each other in both a CL environment and in a traditional learning environment. The quasi-experimental design in this study is represented in Table 3.1 below.

Table 3.1

Quasi-experimental Design

Condition	Pre-test	Method	Post-test
Experimental	Test	Cooperative learning	Test
Control	Test	Traditional learning (small group)	Test

Justification for using a quasi-experimental design.

The quasi-experiment is applied to examine the interrelationships between aligned and nonaligned variables (Creswell, 2009). This experimental design was chosen to enable the researcher to answer the study questions on the effects of CL on the English achievement of students in a regular classroom environment. It also enabled the researcher to examine different groups' behaviours and interactions as they worked on curriculum activities. Quantitative and qualitative data (mixed methods) were collected from both cooperative-learning groups and small traditional groups and some examples from EFL learners' conversations have been highlighted.

Mixed methods research.

A mixed methodology was used in this research study. Mixed methods research involves gathering, examining, and combining quantitative and qualitative data for the purpose of studying a research problem more comprehensively (Creswell, 2009). When a number of different research methods are used, benefits are obtained from each method (Trochim & Donnelly, 2007). Newman and Benz (1988) defined mixed methods research as the harmonization of diverse data acquisition processes to embellish the genuineness of any topic, subject, or analysis.

An embedded mixed methods design was used in this study, in which one data set provides a supportive, secondary role in a study based primarily on the other data type (Plano Clark & Creswell, 2007). In this study, the researcher collected quantitative and qualitative data in a parallel fashion. Quantitative data were collected at the beginning of the treatment via the English achievement test (discussed below). During the treatment, the researcher collected further quantitative data through observations of the students' behaviours and interactions in their groups. Finally, after the treatment, additional quantitative data were collected on the students' achievements on the EFL post-test. Qualitative data were collected through interviews at the end of the treatment and by analysing the transcripts of the students' speech during their small group discussions.

The study involved two phases. The first phase involves the collection and analysis of the quantitative data, while the second phase is concerned with the collection and analysis of the qualitative data.

There are two reasons for the application of a mixed methods design in this study. First, both types of data collectively offer an enhanced understanding of the research problem which would not be possible if only one method is used. Second, quantitative data alone will not allow the researcher to provide answers to the questions raised from it. Therefore, qualitative data have also been included to achieve more comprehensive information on the research being undertaken. This study has a dual focus: the impact of CL on students' achievement of grammatical knowledge of English and an explanation of this impact with reference to CL behaviours and processes. Understanding and studying these learning processes required drawing on qualitative data.

Quantitative research.

Quantitative research is "the collection and analysis of numerical data to describe, explain, predict, or control phenomena of interest" (Airasian, Gay, & Mills, 2009, p. 7). Quantitative research is based on practical, observational and factual matters (Borg & Gall, 1989).

Creswell (2012) explicated the quantitative approach with a few justifications. First, the research being carried out should be objective so that the researcher is independent from the research and does not influence it. Secondly, the researcher has no impact on the resulting truth and its consequences; therefore, he is impartial, unprejudiced, and totally independent in nature. Furthermore, the philosophy behind the phenomenological research should be contemplative in nature. Finally, the research should be liberated from any other matter and the research should comprise authentic and assiduous statistical determinations.

Qualitative research.

As defined by Airasian, Gay, and Mills (2009), qualitative research is "the collection, analysis, and interpretation of comprehensive narrative and visual" (p. 7), that is, nonnumeric data to gain insights into a particular phenomenon of interest. As illustrated by Hussey and Hussey (2003), the term qualitative research is employed when some intercommunication or interplay exists between the analyst and the data being analysed.

Borg and Gall (1989) suggested that the quality of research undertaken by the researcher always underscores the issue of partisanship. They further suggested that the true character of qualitative work is influenced and differentiated by the various characteristics of qualitative studies.

The primary benefit of good qualitative research is the soundness of the data compiled together. Usually the collected data includes both adequate and satisfactory elements, which are shown to be plenteous with regard to containing the correct information about the individuals involved.

Qualitative research differs from quantitative research because of the many characteristics involved. Table 3.3 provides an overview of quantitative research and qualitative research characteristics as follows.

Table 3.2

Overview of Quantitative Research and Qualitative Research Characteristics

Research Type	Quantitative Research	Qualitative Research
Type of data collected	Numerical data	Non-numerical, narrative and visual data
Research problem	Hypothesis and research procedures stated before beginning the study	Research problems and methods evolve as understanding of the topic deepens
Manipulation of context	Yes	No
Sample size	Larger	Smaller
Participant interaction	Little interaction	Extensive interaction

Source. Airasian, Gay, & Mills, 2009.

Triangulation.

Triangulation can be defined as "the use of two or more methods of data collection in the study of some aspect of human behavior" (Cohen, Manion, & Morrison, 2007, p. 141). This particular method is used to corroborate the result obtained by the research (Brannen, 1995). By accommodating diverse confirmations and processes, researchers can acknowledge a broad range of problems associated with factual, historical, performance, and ethical issues. In this study, triangulation occurred by collecting data from three different sources: the English grammar achievement test (EGAT); classroom observations; and student interviews.

The EGAT assisted the researcher to identify students' achievements in learning English as a foreign language .The observations focused on both the behaviour states and verbal interaction in order to explain how the students behave and interact with each other during CL environment. The observation findings helped the researcher to explain the relationship between students' achievements, their behaviour states and their verbal interactions, and the extent to which students' behaviour and verbal interactions affect their achievements. Finally, the student interviews investigated their perception about learning English through CL. The findings from the interviews reported on students' feelings about interaction and discussion with their colleagues in the same groups.

Practical Issues of Research Design

Background to the research.

The study was situated in Saudi Arabia, which has a total area of 2,149,690 square kilometres, and a population of 27 million. The official language is Arabic. The study was conducted in Al-Baha city, which is located in the south-western part of Saudi Arabia. This is a small city with approximately 400,000 people. There are no co-educational schools in Saudi Arabia. The number of students in each secondary school is approximately 200 and in each class the numbers range from 15 to 20 students. All students in the sample schools are from similar SES background

Participants and sampling.

The participants in this study were 139 tenth grade male students, aged 14 to 15 years in four boys' secondary schools in Al-Baha city. Four English teachers located in four secondary schools were invited to participate in the study. Schools were randomly assigned to one of two conditions: four tenth grade classes were randomly selected from two schools to form the experimental groups and four classes were randomly selected from another two schools as control groups. There were 70 students in the experimental conditions and 69 students in the control conditions. As shown in Table 3.3 below, there were four students in each group and the students in the groups were sub-sets of the sample who took the pre-test, post-test, observations and interviews.

Table 3.3

Research Design

Number	Condition	Learning method	Classes	Groups	Teacher
School 1	Experimental	CL	A, B	1, 2, 3, 4	1
School 2	Experimental	CL	C, D	5, 6, 7, 8	2
School 3	Control	Small groups	E, F	9, 10, 11, 12	3
School 4	Control	Small groups	G, H	13, 14, 15, 16	4

Participating schools.

The four schools selected for the research have a similar socio-demographic profile. All students are from a similar middle-class socio-economic Saudi background. All the selected schools are ranked with an excellent grade by the Ministry of Education in Saudi Arabia. The Ministry of Education evaluates the general schools every year, depending on specific criteria such as students' achievement, teachers' performance, and school activities. There are many supervisors who are responsible to visit schools regularly and evaluate each school using the criteria designed by the Ministry of Education (MOE) in Saudi Arabia. Each school is ranked at the end of every year and assigned a grade of: A (excellent), B (above average), C (satisfactory), or D (not satisfactory).

Teachers.

Four male English teachers from the four schools were invited to participate in the research. All teachers have bachelor degrees in teaching English with similar experiences teaching English. Furthermore, they have each obtained a teacher performance rating from the Ministry of Education of 90% or more; this rating is a measure of teachers' competence (ability). The teachers who were invited to participate in the research are competent and all had opportunities to participate in the training for the different conditions (i.e. training in CL for the experimental teachers and training in EFL resources for the control teachers) as discussed later in the chapter.

To assess the teachers' performance, the Ministry of Education designed particular criteria, including teacher attendance, methods of explanation in the classroom, punctuality, and participation in students' progress and in different activities at school. The school principal is responsible for evaluating teachers who teach many subjects.

Instruments and Data Collection

The researcher collected both quantitative and qualitative data in this study. The instruments that were used to collect data included a pre-test and post-test EGAT, a list of questions for students' interviews and an observation schedule used to observe students working together both in a CL environment and in small groups. These instruments are discussed below.

Quantitative data.

English grammar achievement test.

The English grammar achievement test (EGAT) has two parts. The first part of the EGAT was developed by Zaily (2009) to measure the effect of using a computer program in teaching English grammar on Saudi students' achievement in Jeddah. It consists of 20-item exercises of tenses in a multiple choice format where the students had to choose the correct answer from four alternatives. This test was adapted and modified by the researcher and used with the same grade (tenth grade) in a different teaching environment in another city. The reliability of the test is high with an Alpha-Cronbach of .89.

Part two includes a writing task in which the students had to write a paragraph about their families. The aim of the second task was to measure students' knowledge of productive grammar. This test was given to all classes before and after the treatment so it measured the achievement of the participants before and after the treatment.

The EGAT was used as both a pre-test and a post-test to determine the impact of the CL method on students' achievement. The test is comprised of 20 multiple choice items of four alternatives and a writing task. The instructions for the multiple choice and writing task sections were introduced at the beginning of the test. The participants were asked to choose the correct answer in the multiple choice part and then write a paragraph about their families in part two of the test. The time allocated for the test was 50 minutes; they did the multiple choice questions for 30 minutes and then the writing task for 20 minutes. There were two marks for each item in the multiple choice questions and ten marks for the writing task for a total possible score of fifty.

The participants' previous ability in English was evaluated by the pre-test distributed to both conditions (comparison and experimental) before the study began. The purpose of the test was to assess the students' background knowledge of grammar, particularly present simple, past simple, and future simple tense.

The same pre-test was reused again at the end of the study as a post-test to evaluate the participants' achievement in English grammar and to assess the impact of both the traditional learning method and the CL method on students' achievement. Two English teachers who did

not participate in this study corrected all the English test papers to give more reliability to the results obtained. They corrected the test papers both at the beginning of the study and at the end of the study. In the writing task, they corrected each paragraph twice separately and then calculated the average mark between them.

Students in tenth grade are still not familiar with basic grammar skills such as tenses because English is taught in Saudi Arabia from the sixth grade and students do not practice English outside of school, which limits their experience with English. The second part of the test was designed by the researcher to measure students' writing skills (productive grammar). The researcher asked the participants in the English achievement exam to write a paragraph about themselves. The aim of this question was to identify students' ability with productive grammar.

The teaching material for both experimental and control groups was a textbook designed by the Ministry of Education (2007). There are two English textbooks for the full year; one book for semester one and another book for semester two. In each book, there are six lessons. Students undertake various tasks such as reading, grammar, writing, speaking, and listening. The researcher focused on three lessons in which the students learned about the use of tense (present simple, past simple, future simple). The teachers of the experimental classes and the teachers of the control classes taught four classes each. They taught the same content to all classes for a ten week period. The lessons of the content are clarified in Table 3.4.

In each lesson, for example, students learned how to use tenses correctly, changed affirmative sentences into negative sentences and vice versa, asked information questions and yes /no questions, answered questions, used regular and irregular verbs, and learned how to write paragraphs.

Table 3.4

Content Lessons across Implementation

Present simple	Week	Past Simple	Week	Future simple	Week
Affirmative sentence	2	Affirmative sentence	5	Affirmative sentence	8
Add 'es' or 's' to verb	2	Add 'ed' or 'd' to verb	5	Will /shall	8
Negative sentence	3	Negative sentence	6	Negative sentence	9
Ask questions	3	Ask questions	6	Ask questions	9
Yes /no questions	3	Yes /no questions	6	Yes /no questions	10
Exercises	4	Exercises	7	Exercises	10
Paragraph writing	4	Paragraph writing	7	Paragraph writing	11

Observations.

Over a twelve week period, the researcher videotaped eight classes: four classes in the experimental condition who have trained with CL skills and four classes in the comparison groups without this training. In the experimental classes, eight students were chosen randomly from each class and divided into two CL groups (four students in each group). Each of the groups was video-recorded three times for 15 minutes. Then two CL groups were chosen randomly from the pool of the students in each class. Two video cameras were used to cover two groups each week. In the control classes, eight students were chosen randomly from each class and divided into two small groups (four students in each group). Each of the groups was videotaped three times for 15 minutes each during their English grammar lessons.

Coding behaviours and verbal interactions.

CL researchers have used different schedules to observe and categorize students' behaviours along with their verbal interactions in CL groups. For instance, Gillies and Ashman (1998) adapted and modified a schedule (see Table 3.4), which was originally designed by Shachar and Sharan (1988) to observe students' behaviour states. This schedule focuses on the student's behaviour states such as CL behaviour, non-CL behaviour, individual behaviour,

and off-task behaviour. This schedule was used by Gillies to record students' behaviour states in schools in Brisbane, Australia.

A second schedule which focuses directly on verbal interactions during cooperative group learning was developed by Gillies and Ashman (1998). The verbal interactions that are identified are: makes basic statement during discussion; responds to others' requests for basic information with brief statement; uses English correctly in making a statement or giving an explanation; asks open-ended questions (how? Why?); requests clarification from others; uses positive interruption; uses negative interruption; directs actions of the group (gives directions, delegates responsibility); supports or encourages others in the group; and uses non-specific verbal interaction.

In the present study, these two schedules were used as a guide in coding student behaviours and interactions in both CL groups and small traditional groups after the lessons had been videotaped. As these schedules were not specifically designed for EFL classes, they cannot be used directly in the context of the present research. In keeping with the focus of the experiment and the SLA theories (Krashen, 2003; Long, 1996; Swain, 1993) reviewed in Chapter 2, an inductive categorization of student interactions focused on examples of input, interaction and output. In particular, the researcher looked at whether the Saudi students provide input to one another, received feedback and modified their output in response to feedback, and whether they provided explanations, gave and elicited information, expressed opinions and attitudes, and asked for clarification either in English or in Arabic language. This inductive approach being informed by categorization systems used in CL research enabled the researcher to design a coding system that can be used in future research on CL in the context of EFL teaching and learning in SA and other countries. The first schedule has four different behaviour states, which are clarified below in Table 3.5.

Table 3.5

Behaviour States

Categories	Behaviour States
Cooperative behaviour	Task-oriented group behaviour
Non-cooperative behaviour	Competitive behaviour
Individual on-task behaviour	Work alone on task
Off-task behaviour	Nonparticipation in group activities and not working individually

The researcher observed the followings behaviours in each class: cooperative behaviour included all task-oriented behaviours; socially oriented positive behaviours and active attention to others in the group; non-cooperative behaviour, including excluding behaviour such as criticism and opposition, to attain one's goal at the expenses of others; individual on-task behaviour, including behaviour where the individual was working on the task but not participating with his group; and off-task behaviour, when the individual was neither participating in the group nor working individually. It is important to code the silent state as off-task behaviour if the student keeps quiet but is not participating in the task. In contrast, if the student keeps quiet but is still listening to others, it was coded as CL behaviour. The researcher was informed by Gillies and Ashman's (1998) study that investigated the impact of the group experience on individuals; thus, the behaviour states data were analysed individually and the verbal interactions data were analysed at the group level, to evaluate the quantity of interaction of all groups.

Due to the fact that the students learned English in a CL environment throughout the research, the video clip analysis should have been of the group, rather than each student alone. However, the researcher decided to analyse the behaviour states data individually, in ten-second intervals, based on a coding schedule (see Appendix 4) used by Gillies and Ashman (1998).

The two research assistants observed four different behaviour states in each group (see Chapter 3): firstly, cooperative behaviour included all behaviours that were task-oriented, socially oriented positive behaviours which gave active attention to others in the group;

secondly, non-cooperative behaviour included behaviour that excluded others, such as criticism, opposition, and the attaining of one's goal at the expense of others; thirdly, individual on-task behaviour included the individual working on the task but not participating in his group; and, finally, off-task behaviour was defined as the individual not participating in the group and not working individually. It is important that the silent state is coded as off-task behaviour if the student keeps quiet and is not participating in the task. In contrast, if the student keeps quiet, but is still listening to others, it is coded as CL behaviour.

Two research assistants coded all the videotapes .The research assistants were trained to code students' behavioural states. Inter-rater reliability on the students' behaviour states was greater than 90%, which is a satisfactory level of inter-rater agreement (Gay & Airasian, 2009). A total of twelve hours of student behaviour states were coded. Inter-rater reliability ranged from 90 to 95% across behaviour states (cooperative behaviour, 90%; non-cooperative behaviour, 95%; individual task-oriented behaviour, 90%; individual non-task behaviour, 95%; and cooperative behaviour, 95%).

The second schedule (see Table 3.6), designed by Gillies (2003) and modified by the researcher, was used to collect information during videotaped sessions on Saudi students' verbal interactions while they are learning English as a foreign language. The researcher used the following table as a guide to identify new codes that emerged from the videotape data of students learning English as a foreign language in Saudi Arabia. The researcher added five new variables to Gillies' (2003) original table: makes statement during discussions; responds to others' requests with brief statement; offers explanation and gives examples; requests clarification from others; and supports others in the group. The other five variables were originally from Gillies' work. The schedule has ten interaction variables that are clarified in the Table 3.6 below.

Table 3.6

Interaction Variables

Interaction variables	Example /Frequency
Makes basic statement during discussion	I like to work with my classmates
Responds to others' requests for basic information with a brief statement.	*I am going to be an academic professor at university.*
Explanation with examples.	To write about the transportation in Saudi Arabia, for example, we have to write about trains, highways, etc.
Asks open-ended questions (how, why…)	When can I add 's' or 'es' to different verbs?
Requests clarification from others.	*Clarify* to me, please.
Positive interruption	Interacts to assist
Negative interruption	Interrupt others, yells out.
Direct actions of the group. (Gives directions, organizes responsibility)	*It is a good idea to ask the teacher.*
Supports or encourages others in the group	*We can combine different ideas from different sources together.*
Non-specific verbal interaction	Other verbal interactions that do not fit into the above categories.

First, the researcher and his two assistants watched the video clips multiple times to familiarise themselves with the general ideas about the data. Second, the two research assistants transcribed the video clips. After that, the researcher read the video clip transcriptions numerous times and underlined the recurring data to identify common verbal interaction categories. In the present research, the researcher depended on the literature review and the theoretical perspective to code the data. For example, Gillies' verbal interaction timetable (2003) was used as a guide in coding student verbal interactions in CL groups after the lessons had been videotaped. As this schedule was not specifically designed for EFL classes, it cannot be used directly in the context of the present research.

Categories of data emerged from the literature review, such as negative interruptions and positive interruptions, whereas others were added after looking at the videos and reading the transcripts multiple times. The researcher used an inductive categorization of EFL learners' verbal interactions that focused on examples of input, interaction, and output. This inductive

approach, informed by categorization systems used in this research, enabled the researcher to develop a coding system that simplified the number of verbal interaction categories based on utterances by EFL learners' in the classrooms.

Two research assistants coded all the videotapes. The research assistants were trained by the researcher to code students' verbal interaction categories. Inter-rater reliability on students' verbal interaction categories between the two research assistants was greater than 90%, which is a satisfactory level of inter-rater agreement (Gay & Airasian, 2010).

In total, 12 hours of students' verbal interactions were coded. Inter-rater reliability was 95% across ten verbal interaction states as identified above. Because students undertook English lessons in either a cooperative or a traditional learning environment throughout the research, the analysis of video clips used the group as the unit of analysis, rather than individual students.

Qualitative data.

Observation.

The researcher also randomly examined the video clips qualitatively and undertook an interaction analysis to identify student's verbal interactions during CL when learning English as a foreign language in Saudi Arabia with a specific focus on linguistic issues. There were 16 groups and each group was videotaped 4 times. In this case, the researcher randomly selected one clip from each group that had been videotaped four times each.These qualitative data assisted the researcher to explain how students communicate with each other in a CL environment. Furthermore, these data provided a clearer picture of why CL made a difference, rather than traditional learning in term of students' achievement (see Chapter 5). Video clips were also analysed qualitatively with the researcher focusing on the linguistic expressions of students. The researcher watched each video clip several times to identify and select conversation examples from both experimental and control conditions (see Chapter 5).

Organization and analysis of video data.

Because the purpose of video analysis in this study is to try to explain why students who learn English as a foreign language through CL achieve higher scores than their peers who

learned the same English lessons via traditional learning methods (i.e. small group), the researcher looked at these video clips both quantitatively and qualitatively to interpret and explain students' learning processes in the classroom. The researcher videotaped all eight classes during the study at three different times. There were two groups in each class, which adds up to sixteen groups in total with four students in each group. Each group was videotaped for 15 minutes three times across the period of the study.

Two research assistants transcribed the video clips; then, eight examples were selected randomly from both the experimental and control conditions to represent different categories of verbal interactions and the five principles of CL. After that, the researcher analysed and discussed them separately and presented them in terms of the categories discussed earlier in the quantitative section. Furthermore, it is important to see whether the students follow the principles of CL or not (see Chapter 2). The researcher identified which groups were following these principles and the extent to which the students have applied CL principles in both conditions. These examples were analysed to highlight the learning processes and to reveal the differences in the two conditions to explain how learning takes place

Student Interviews.

The researcher interviewed ten randomly selected students from the experimental classes at the end of the study. The purpose of the interview questions was to identify how Saudi students responded to their new experiences in learning English in a CL environment. The interview questions were designed by Gillies and Boyle (2011) and modified by the researcher to seek information on students' perceptions of learning English in a CL environment (see Appendix 2.3). The student interviews were conducted individually and were audio-recorded by the researcher. The interviews were conducted in the Arabic language and the researcher later translated them into English.

The interviews were semi-structured (Freebody, 2003) to provide more opportunities for each student to elaborate on the different questions that were posed. Each interview was audiotaped and fully transcribed by a research assistant and checked and rechecked for accuracy by the researcher. In this study, the interview data were presented and analysed using the inductive approach; that is, the data was transcribed and coded to identify themes that emerged from the data. The student interviews were conducted in Arabic because it is the students' mother tongue and allowed them to express their views with a clarity that would not have been possible in English. The researcher translated and transcribed the interviews to identify different themes in the data (Creswell, 2012).

The researcher reviewed the data to ensure that the themes were representative of the interview data. The researcher identified these themes by keywords and phrases that students used to respond to the different questions that were posed. These themes were identified by sentences, phrases, and keywords that the students used to answer the different questions that were asked. For instance, students were asked to comment on their perceptions about working in a group as a team, and the importance of working together to achieve a task. Phrases and key words used to identify this theme included: "working in team is good" (Student 6); "working in a team assists us to a-+chieve our goals" (Student 10); and "I prefer to work in team rather than working alone" (Student 2). The researcher broke the phrases and key words down, read and reread them, examined, conceptualized, compared, and categorized them, guided by the theoretical framework and previous research in the same field (Strauss & Corbin, 1998). The researcher grouped the different themes that emerged from the interview data into seven main themes: academic achievements; social skills and self-confidence; performing different roles; CL and individual learning; CL as a method that does not work for all students; and lastly, barriers of CL.

Procedures

This study was conducted from August to November 2012. At the beginning of the study, the researcher invited four English teachers from four government secondary schools to participate in the research. Eight classes of tenth grade students from these four schools were then invited to participate in the study. Four classes from two schools were designated as the

experimental groups and another four classes from two other schools were the control groups.

Workshops for the experimental and control conditions' intervention.

The researcher organized two separate workshops: one for teachers of the experimental groups who trained in CL skills, and another for teachers in traditional classrooms where students worked in small groups but would not receive training in how to implement CL (Gillies, 2008). In this study, the researcher compared CL groups and small groups who were not trained in CL skills; hence, two types of workshops were offered for the teachers.

Cooperative learning groups (training program).

The researcher organized a workshop for five weeks to train both the teachers and the students in the experimental condition in the basic skills of CL. Johnson and Johnson (1999) maintain that teachers have to be familiar with the basic skills to implement CL properly. For example, the teacher should be able to form cooperative groups, monitor the process and outcomes of the group experience, and explain the expectations for the group as well as individual members. The researcher invited the teachers to attend the workshop to clarify the basic skills that needed to be developed to ensure that the CL intervention was correctly implemented.

A CL intervention-training program developed and adapted by Gillies and Ashman (1995), Gillies (2003, 2007), and Yamanashi (2008) was modified and used by the researcher to train the teachers who taught the experimental groups in this study (see Appendix 1 for the full program). Johnson and Johnson (2003) pointed out that the use of cooperative training programs assists group members to be more proficient in providing learning experiences. Particular benefits to group training include: the group members are able to explain new experiences to each other, the group receives feedback, motivation enhances the group members, members are encouraged to learn, and professional development is identified. The use of training assists group members to become more proficient in implementing learning experiences (Johnson & Johnson, 2003). An outline of the intervention-training program is as follows:

- Discussion of CL five principles: positive interdependence, small group skills, and group processing, face-to-face interaction and individual accountability. These are

basic skills of the CL method; students are trained to use them as they cannot work cooperatively in groups otherwise;

- 'We instead of me' positive interdependence exists when group members are linked together in such a way that one cannot succeed unless others do also (Gillies, 2007);
- 'No hitchhiking on the work of others' means individual accountability, which is when each group member understands that they are responsible for completing their individual assigned tasks and assisting others to complete their assigned tasks as well (Holliday, 2005);
- Understanding group social skills: students need to be familiar with social skills, such as listening politely, disagreeing constructively, and taking turns to work in groups properly; and
- Sharing experiences to identify the benefits and disadvantages of CL. How could the approach be improved and sustained? This includes watching video clips about CL.

The CL intervention program had many benefits for the teachers participating in the group training. These included opportunities to: receive group feedback, provide encouragement to learn, clarify new experiences with colleagues, enhance personal commitment, and validate professional identity.

Jacobs, Power, and Inn (2002) identified several principles that teachers should be aware of when they decide to implement CL in their classrooms: teachers should understand the definition of CL, its principles, and they should be able to arrange and manage their classroom. Furthermore, they should be able to build teams and construct groups and they should be able to assist different groups to develop independence by delegating responsibility for learning.

The researcher introduced the training program. The role of the researcher was as follows: he prepared informational handouts and PowerPoint slides on the CL method; translated some difficult sentences from English to Arabic; answered teachers' questions; and chose a suitable room in the school where the teachers attended the program. During the meeting, the researcher introduced himself and gave a brief introduction of the project. The researcher clarified the following issues: the importance and purpose of the research; the definition of CL and its principles as discussed in Chapter 2 (positive interdependence, individual accountability, group processing, face to face interaction and social skills); the need for CL in

Saudi Arabian schools; the need to build a cooperative team; how to embed CL into classroom lessons; and the role of the teacher in CL.

Furthermore, the teachers watched a video (DVD) during the training program called 'Pedagogy and practice: Teaching and learning in secondary schools' (DFES, 2004). There were many clips that demonstrate the use of CL in the classroom. Also, These clips clarified what a CL classroom might look like, the teacher's role in implementing CL in the classrooms and the learners' tasks.In addition, They also watched another two video clips by Kagan (2010b, 2010c), the first one is titled 'What is CL' and the second one is called 'Differences between CL and small groups' (Alghamdi & Gillies, 2013).

The researcher also introduced four books on CL for the teachers to read. These books are: *Cooperative learning: Integrating theory and practice* by Gillies (2007); *The teacher's sourcebook for cooperative learning: practical techniques, basic principles, and frequently asked questions* by Jacobs, Power, and Inn (2002); *The nuts and bolts of cooperative learning by* Johnson and Johnson (2009); and *Learning together and alone: Cooperative, competitive, and individualistic learning* by Johnson and Johnson (1991). These books were useful for the teachers as they assisted them to improve their classroom management giving clear ideas on using CL and implementing it in the classroom effectively.

Following the workshop, the researcher assisted the teachers to train their students in the basic skills of CL, including social skills for group work, before beginning the first class. The workshop included working together to develop group goals, correcting classmates' mistakes, using quiet signals, sharing information, proposing good arguments, and cooperating with each other.

During the study, the students in the experimental groups were taught English using CL, whereas the control groups were taught English using the traditional teaching method (small groups). All groups were taught the same subject matter and used the same content. All groups received the same amount of time for instruction.

Traditional learning (small groups).

The teachers who taught the control classes used traditional learning methods (small groups) where students were not trained to work cooperatively. Just putting students in groups and

asking them to work cooperatively does not promote cooperation and learning; students work properly in groups only when they are trained to do so (Gillies, 2004). Students in the control groups only work in groups on an *ad hoc* basis and their groups are not structured, which is one of the five essential principles for successful CL. Moreover, the control group teachers were not trained in how to implement CL in the classroom; rather, they continued to teach as they had always taught. The teachers and students in the control classes attended discussions before the first class where the researcher explained the purpose, importance, and benefits of the research. The researcher asked the teachers to keep teaching using the traditional small group method (small groups) used in their schools. Two books about teaching English as foreign language were introduced to the teachers to increase their knowledge about teaching English. These books are *Teaching English in Saudi Arabia* by Al-Hajailan (2003) and *Teaching English as second/foreign language* by Riddell (2001).

Data Collection Process

The researcher followed the following procedures to conduct the study: to begin with, ethical clearance was obtained from the School of Education at the University of Queensland. Then, a letter of permission was sent to the school and a letter of consent was sent to the students and their parents to gain their permission to participate in this study. After that, the eight classes were divided into four experimental classes and four control group classes. Separate workshops discussions took place with the teachers in both the experimental and the control classes before the beginning of study. Then, the researcher distributed the EGAT as a pre-test to all the classes at the beginning of the study. The researcher observed all experimental classes and all control classes three times each during the treatment. The EGAT was again given as a post-test to all classes in the experimental and control conditions at the end of the study. Finally, the researcher interviewed ten students randomly from the experimental classes at the conclusion of the study. The research data collection process is presented in Table 3.7 below.

Table 3.7

Research Data Collection Process

Number	Data collection	Week	Participants
1	English Achievement Test	1	139 students
2	Observation (Time 1)	2-4	16 groups
3	Observation (Time 2)	6-8	16 groups
4	Observation (Time 3)	9-11	16 groups
5	English Achievement Test	12	139 students
6	Students' Interviews	12	10 students

Data Analysis

The data were analysed in two ways. Firstly, the quantitative data were analysed using SPSS Version 20. Students' English grammar scores, as dependent variables (DV) were analysed first within a mixed model Analysis of Variance (ANOVA). This technique simultaneously assesses the additive and interactive effect of each independent variable (IV1 is the condition: treatment versus the control group and IV2 is test-time: pre-intervention versus post-intervention scores). This technique assesses the extent of change over time (the pre-test versus the post-test score) and varies as a function of condition (treatment versus control group); thus, it does not require both experimental conditions to be equivalent at the pre-test. Students' behaviour states and verbal interactions (quantitative) were analysed by using the nonparametric Kruskal-Wallis test to identify if there were significant differences between the small groups in the experimental condition and comparison condition. The Kruskal-Wallis test, which is used when the data sets are small, allows for between-groups effects to be identified.

Secondly, qualitative data were analysed in two parts. First, the researcher analysed the students' verbal interactions (qualitative); the researcher and his two assistants watched the video clips many times to familiarise themselves with the general content of the data. Next, the two research assistants transcribed the video clips. After that, the researcher read the

video clip transcriptions numerous times and underlined the recurring data to identify common verbal interaction categories. In the present research, the researcher depended on the literature review and theoretical perspective to code the data. The researcher used an inductive categorization of EFL learners' verbal interactions that focused on examples of input, interaction and output. The second part of the qualitative data analysis consisted of coding the interview data according to themes that emerged from the data. The researcher followed two main steps to analyse the data from the interviews. First, the researcher read all the students' answers and, from these, he generated codes; based on these codes, the researcher identified common themes (Cohen, Manion, & Morrison, 2007).

Study Limitations

This study has its limitations, the first of which is related to its short duration. The study examined the impact of CL over a period of ten weeks (one term) for the CL activities in total. Research like this is often conducted over long periods of time in order to ensure the innovation and results are successful. However, because of research regulations that apply to Saudi students, the research was limited to ten weeks. Moreover, this EFL setting was grounded in traditional, teacher-led learning where the EFL learners were unfamiliar with the cooperative language learning context. One might conclude from this that the findings were quite context-driven and needed to be seen within the cultural constraints and teaching practices of EFL context. It is hoped that this research offers a means by which the teaching and learning context for EFL learners could shift away from student-centred traditional learning to the more effective and collaborative cooperative learning context.

Another limitation of this study is that it did not cover all verbal interactions as the researcher concentrated on the major verbal interactions that occurred during the EFL learners' conversations in the EFL classrooms. Because of complexity of EFL classrooms, it was not possible to provide a close examination of every verbal interaction, so the researcher selected highlighted and provided a selection of examples that revealed the main categories that appeared in the EFL classrooms.

Another limitation is that the English teachers of the EFL classes were not interviewed or asked about their perceptions about using the CL teaching method. The focus of this research was on the EFL learners' achievements, classroom interaction, behaviours states, and

students' perceptions, rather than that of the teachers. At this stage, the researcher sought to examine the impact of CL on the EFL learners, but the teachers could provide some valuable insight in future research.

Finally, as this research was conducted solely in an EFL context in Saudi Arabia, the results cannot be generalised to apply beyond EFL education institutions, universities and schools. The findings may not be appropriate or correct in other contexts. Also, this research was limited to English grammar and writing skills, and so the findings cannot be generalised to all English skills.

Ethical Issues

Pring (2002) defined ethics as "the underlying ethical principles as respect for the dignity and privacy of those people who are the subjects of research" (p. 143). In addition, Neuman (2006) defined it as "what is or is not legitimate to do, or what 'moral' research procedure involves" (p. 129). The kind of study and the goal of data collection are essential in ethical issues. For instance, interviewing involves ethical issues concerning interpersonal interactions and the sharing and storage of personal information; in addition, in interviews, there are many ethical issues, such as confidentiality, informed consent, and the consequences of interviews (McNamee, 2002). Another example occurs in observation measurement; ethically, the researcher is obligated to care for the subject's privacy, even if he was not aware he was being observed.

The researcher applied for ethical clearance to the School of Education at the University of Queensland (UQ) three months before the study started. The application form explains the research objectives and study procedures in detail. A month later, the UQ ethical clearance committee granted permission to conduct the study in Saudi Arabia.

It is imperative that the researcher obtains the participants' consent before collecting data. Methodologists (Creswell, 2012) agree that when research has human participants, the researcher must get the participants' consent to take part in the research. The participants have rights to privacy and confidentiality, and this is guaranteed by the ethical clearance granted by the ethical committee at the University of Queensland.

Copies of letter were sent to all relevant parties and the researcher discussed the project and

the study objectives to the principals, teachers, parents, and students in the participating schools before the project commenced. Teachers and students were required to sign a consent form agreeing to participate in the study before they could be included. They were told their participation was voluntary, that they were free to withdraw at any stage for any reason, and, for students, withdrawal would not affect their educational progress in any way. They were also informed that any data collected prior to their withdrawal of consent would be destroyed at their request if they chose to withdraw. The parents of participating students needed to sign a consent form before their sons were included. Informed consent was obtained from the principals, teachers, students and parents and, prior to each interview, students were assured of the confidentiality of any information they provided.

Videotaping occurred from the back of the classroom to minimise possible identification of students. The only data derived from the videotapes were from participants who had given informed consent. Individual students who had not given consent appeared on camera but their images were obscured.

The raw data, transcripts of interviews, achievement tests, observations, and questionnaires remain strictly confidential and are kept in a secure place in a secure format by the researcher. Data were saved in the researcher's account at the University of Queensland protected by a password and access to stored data was limited to the researcher and his advisory team. Approval for the project was sought from Al-Baha Education, Saudi Arabia before the study commenced. The proposed project is a curriculum-based intervention that was implemented as part of the regular teaching and learning English program in the classroom. There were no foreseeable added risks apart from those risks involved in everyday living. The data are only to be used for the purpose of this study. It will be destroyed within five years after the thesis has been submitted.

Chapter Summary

This chapter presented the methodology of this study, which is based on a quasi-experimental design that involved the collection of both quantitative and qualitative data. The quantitative data provided information on the effect of CL on Saudi students' achievement and their learning process when learning English via CL. Details of data collection methods used were presented. Qualitative data were collected from transcribing a random selection of the

students' video discussions and the students' interviews. This chapter has also presented information on the workshops for both the experimental and the control conditions. Finally, procedures of this research, ethical issues, study limitation and data analysis were discussed at the end of this chapter. The finding of both quantitative data and qualitative data are presented in the following chapters.

Chapter 4: English Grammar Achievement Test and Behaviour States Data and Analyses

Introduction

The purpose of this study is to examine the impact of CL (CL) in comparison to traditional small group learning on Saudi students' achievement, behaviour states, verbal interactions, and their experiences of learning English through CL. This chapter aims to determine whether there were significant differences in the EGAT and students' behaviour states within these two learning groups.

This chapter presents and analyses the findings of the quantitative data, which consist of the EGAT results and the students' behaviour states. There are two sections in this chapter. The first section presents the students' achievements in the EGAT when they learn English as a Foreign Language (EFL) in Saudi Arabia. The second section looks at the students' behaviour states when they learn English as a foreign language, either in a CL environment or in a traditional small group-learning environment. Data were gathered through an EGAT and video observations of students' behaviours in the classroom.

The English grammar achievement test results enabled the researcher to identify students' achievements in learning English as a foreign language whereas; the observations focused on the behaviour states in order to explain how the students behave with each other in the CL environment. These findings were used by the researcher to explain and identify the relationship between students' achievements and their behaviour states to determine to what extent students' behaviour reflected on their achievements on the EGAT.

English Grammar Achievement Test

Procedures.

This test was used as both a pre-test and a post-test to investigate the impact of CL on students' English language achievements. The first part of the test is comprised of twenty multiple choice questions and the time allocated for this part of the test was 40 minutes. At the beginning of the test, the participants were asked to choose the correct answer from four options. The second part of the test required the students to write a paragraph to identify their

productive grammar and the time allocated for this part was 20 minutes. There were two marks for each correct answer in the multiple choice section and ten marks for the writing task, for a total possible score of 50.

The participants' previous achievements in English were evaluated by the pre-test distributed to both conditions (experimental and control) before the study began. The purpose of the pre-test was to assess the students' background knowledge of grammar, particularly of present simple, past simple, and future simple tenses. The same pre-test was presented at the end of the study as a post-test to evaluate any change in the participants' achievements on the EGAT. The purpose of the post-test was to assess the impact of both the traditional learning method and the CL method on students' achievements. Two English teachers who did not participate in this study corrected all the English test papers, both at the beginning of the study and at the end of the study. With the writing task, they corrected each paragraph twice separately and then calculated the average mark between them. A total of 139 participants were drawn from four government secondary schools and eight classrooms experienced either the experimental condition ($N = 70$) or the control condition ($N = 69$).

Results.

In order to determine if there were differences in the students' achievement scores in grammar in the two conditions, an Analysis of Variance (ANOVA) was performed. Because the EGAT has two parts, a multiple choice and writing task, the researcher analysed it in two ways: firstly, the test results are presented and discussed in their entirety, that is, the multiple choice section and the writing task together; secondly, the two parts of the results, the multiple choice section and the writing task, were analysed as separate entities. The means and standard deviations of the EGAT pre-test total score and the post-test totals are displayed in Table 4.1 as follows.

Table 4.1

Means and Standard Deviation in the Total of Pre-test and Post-test Scores for the Experimental and Control Conditions

		N	**M**	**SD**
Pre-test total scores	Experimental	70	16.83	5.858
	Control	69	15.91	5.207
	Total	139	16.37	5.543
Post-test total scores	Experimental	70	19.17	6.258
	Control	69	16.72	4.537
	Total	139	17.96	5.588

In order to determine if there were differences between both the pre-test and post-test total score results, two one-way ANOVAs were conducted. As can be seen in Table 4.2, there were no significant differences between the experimental and control conditions at Time 1 but there were significant differences at Time 2.

Table 4.2

Tests of Between Subject Effects for Pre-test and Post-test Total Scores

ANOVA		SS	df	MS	*F*	Sig.
Pre-test total scores	Between groups	29.126	1	29.126	.947	.332
	Within groups	4211.421	137	30.740		
	Total	4240.547	138			
Post-test total scores	Between groups	208.030	1	208.030	6.948	.009
	Within groups	4101.711	137	29.939		
	Total	4309.741	138			

Table 4.2 indicates that there are no statistically significant differences, $p = .332$ ($p > .05$), between the mean scores of the students who were taught English in the CL environment (the experimental group) and those who were taught English by using the traditional method (the control group) in the pre-test.

In contrast, Table 4.2 shows that there are statistically significant differences, $p = .009$ ($p < .05$), between the mean scores of the students who were taught English in the CL environment (the experimental group) and those who were taught English using the traditional method (the control group) in the post-test in favour of the experimental conditions.

To determine if there were differences between the conditions on the multiple choice questions and the writing task from Time 1 to Time 2, two Analyses of Covariance (ANCOVA) were conducted. Table 4.3 below presents the means and standard deviations of the students' scores on the multiple choice test and the writing test separately at Times 1 and 2.

Table 4.3

Student Score Mean and Standard Deviations on the Multiple Choice Test and the Writing Test at Pre-Test and Post-Test

Condition	*N*	M	SD
Multiple choice	70	15.12	4.85
(1) Experimental Control	69	14.59	4.30
Multiple choice	70	16.91	5.10
(2) Experimental Control	69	15.17	3.67
Writing task	70	1.70	1.42
(1) Experimental Control	69	1.31	1.20
Writing task	70	2.25	1.48
(2) Experimental Control	69	1.55	1.24

Note. Maximum score for the multiple test = 40; maximum score for the writing task = 10.

To determine if there were significant differences between the conditions on the multiple choice questions and the writing task from Time 1 to Time 2, two Analyses of Covariance (ANCOVA) were conducted. As can be seen in Table 4.4, there were significant differences in the multiple choice question in favour of the experimental condition. However, there were

no significant differences in the writing task question between the experimental and control conditions. The results are shown in Table 4.4 as follows.

Table 4.4

Tests of between Subject Effects for Two Different Scores (Post-test Minus Pre-test)

DV	Type III SS	df1	df2	MS	*F*	Sig.
Multiple choice	50.54	1	137	50.539	7.688	.006
Writing task	3.68	1	137	3.676	2.685	.104

As indicated in Table 4.4, the condition predicted significantly larger differences in scores for multiple choice question responses, $p = .006$ ($p < .05$). In contrast, there were no significant differences in scores with the writing task, $p = .104$ ($p > .05$). See Appendix 3 for more statistical details.

Table 4.5

Means and Standard Deviation for Item Analysis at Time 1

Item	**Condition**	**M**	**SD**	***F***	***P***
1	Experimental Control	.385 .308	.490 .565	.892	.347
2	Experimental Control	.500 .205	.503 .407	14.1	.000
3	Experimental Control	.128 .058	.337 .237	1.96	.163
4	Experimental Control	.171 .073	.379 .262	3.08	.081
5	Experimental Control	.214 .161	.413 .370	.616	.434
6	Experimental Control	.014 .161	.119 .370	.9.99	.002
7	Experimental Control	.914 .911	.281 .285	.003	.958
8	Experimental Control	.842 .852	.366 .356	.027	.870
9	Experimental Control	.885 .852	.320 .356	.323	.571
10	Experimental Control	.871 .897	.337 .306	.218	.641

11	Experimental Control	.928 .852	.259 .365	2.03	.156
12	Experimental Control	.857 .852	.352 .356	.005	.945
13	Experimental Control	.057 .117	.233 .324	1.58	.210
14	Experimental Control	.071 .088	.259 .285	.131	.718
15	Experimental Control	.114 .088	.320 .285	.254	.615
16	Experimental Control	.228 .161	.422 .370	.971	.326
17	Experimental Control	.142 .161	.352 .370	.094	.759
18	Experimental Control	.1000 .176	.302 .384	1.69	.195
19	Experimental Control	.128 .014	.337 .121	6.88	.010
20	Experimental Control	.142 .014	.352 .121	8.06	.005

Note. Experimental /70; Control /69

To determine if there were significant differences between the conditions on the multiple choice questions task from Time 1, further analyses of the 20 multiple choice items were conducted using a multivariate analysis of variance (MANOVA). Assumption of normality and homogeneity of variance underpinning the use of MANOVA were investigated. The MANOVA yielded a significant multivariate effect for condition T = .434, F (1,117) = 2.53, $p < .001$. The following univariate results were significant: Item 2, F (1,117) = 14.18, $p < .05$; Item 6, F (1,117) = 9.99, $p < .05$; Item 19, F (1,117) = 6.88, $p < .05$; Item 20, F (1,117) = 8.06, $p < .05$. The results for Time 1 are shown in the Table 4.5 above.

It is evident from the above table that some items in the multiple choice section were significantly different. These items were significant: Item 2, $p = .000$ ($p < .05$); Item 6, $p = .002$ ($p < .05$); Item 19, $p = .010$ ($p < .05$); and Item 20, $p = .005$ ($p < .05$). There were no significant differences in the majority of multiple choice items on the EGAT at Time 1.

To determine if there were significant differences between the conditions on the multiple choice questions task from Time 2, further analysis of the 20 multiple choice items were conducted using MANOVA. Assumption of normality and homogeneity of variance underpinning the use of MANOVA were investigated. The MANOVA yielded a significant multivariate effect for condition T = .456, F (1,117) =2.69, $p < .001$. The following univariate

results were found to be significant: Item 2, F (1,117) =18, 3, $p < .05$; Item 3, F (1,117) = 8, 43, $p < .05$; Item 6, F (1,117) = 4,77, $p < .05$, Item 8, F (1,117) = 3,88,$p < .05$; Item 12, F (1,117) = 3, 88, $p < .05$; Item 13, F (1,117) = 4, 57, $p < .05$; Item 14, F (1,117) = 5, 61, $p < .05$; Item 19, F (1,117) =12.0 $p < .05$; and Item 20, F (1,117) = 9,47,$p < .05$. The results for Time 2 are shown in Table 4.6.

Table 4.6

Means and Standard Deviation for Item Analysis at Time 2

Item	Condition	M	SD	*F*	*P*
1	Experimental Control	.842 .362	2.082 .484	3.48	.064
2	Experimental Control	.4000 .101	.493 .304	18.3	.000
3	Experimental Control	.485 .043	1.24 .205	8.43	.004
4	Experimental Control	.471 .333	1.69 .474	.427	.515
5	Experimental Control	.114 .058	.320 .235	1.39	.240
6	Experimental Control	.100 .014	.302 .120	4.77	.031
7	Experimental Control	.985 .971	.119 .168	.351	.554
8	Experimental Control	.985 .913	.119 .283	3.88	.049
9	Experimental Control	.971 1.08	.167 1.10	.744	.390
10	Experimental Control	.985 .942	.119 .235	1.91	.169
11	Experimental Control	.985 .942	.119 .235	1.91	.169
12	Experimental Control	.985 .913	.119 .283	3.88	.047
13	Experimental Control	.528 .087	1.69 .283	4.57	.034
14	Experimental Control	.128 .289	.337 .457	5.61	.019
15	Experimental Control	.171 .130	.379 .339	.450	.503
16	Experimental Control	.100 .159	.302 .368	1.08	.300
17	Experimental Control	.157 .115	.366 .322	.494	.483
18	Experimental Control	.128 .347	.337 1.24	2.01	.158
19	Experimental Control	.242 .043	.431 .205	12.0	.001
20	Experimental Control	.214 .043	.413 .205	9.47	.003

Note. Experimental /70; Control /69

There are 20 items in the multiple choice test. The EGAT covered three English tenses (present tense, past tense, and future tense). It is interesting to determine which tense was more effective in making the difference between these two conditions. Moreover, there were five levels in the EGAT. These five parts are: making affirmative sentences; making negative form; answering yes/no questions; answering ('Wh') questions; and, finally, making questions. It is evident from the above table that Items 2, 3, 6, 8, 12, 13, 14, 19, and 20 were significant at Time 2. Five items in the future tense form are significant: Items 2, 3, 8, 13, and 20. There are three significant items in the past tense form: Items 6, 12, and 19. However, there is only one significant item in the present simple tense: Item 14. It is clear that the future simple tense was more effective at distinguishing between the conditions. The past simple tense was also effective in identifying the significance between students who learn English through CL and traditional small group learning. These effective items will be highlighted and discussed in depth in the verbal interaction chapters. It is evident that the students' performance in both conditions was not significant in making negative forms, partly because all the students found this task easy. In this part, students were asked to make negative forms from some simple sentences. These items were 7, 8, and 9; Item 8 was significant at Time 2, even it is a simple item, but the main reason is this item is in future tense simple form. Future simple tense was highly effective at distinguishing between the two conditions. In addition, the students in both conditions found it easy to answer the yes/no questions in Items 11, 12, and 13. Once again, Item 13, which was in the future tense form, was significant even it was an easy item. It is clear that difficult questions, such as 'Wh' questions and making questions, were effective in distinguishing between these two conditions; these significant items included Items 13, 14, 19, and 20.

To determine if there were significant differences in the multiple choice questions, a Group (condition) X Time multivariate analysis of variance (MANOVA) with repeated measure was conducted on 20 items in both the experimental and control conditions as the students learned English in the two conditions over time. Assumption of normality and homogeneity of variance underpinning the use of MANOVA were investigated. The MANOVA yielded a significant multivariate effect for time, T = 1.122, F (1.117) = 6.563, $p < .001$ and time X condition T= .373, F (1.117) = 2.185, $p <.001$. Because the focus of this study was on the change in the 20 multiple choice items over time, only the time X condition univariate results

are reported. The following univariate results were significant: Item 3, F (1,117) = 5.271, p < .05; Item 6, F (1,117) = 14.1, p < .05; Item 13, F (1,117) = 5, 56, p < .05.

Discussion.

The results showed that there are statistically significant differences, p = .009 (p < .05), between the mean scores of the students who were taught English in the CL environment (the experimental group), and those who were taught the English using the traditional small group method (the control group). This difference was in favour of the experimental group, although the results showed that there was no significant difference between the two groups in terms of the students' English achievement test scores at the pre-test.

There are two possible explanations for the increase in students' achievement when they worked cooperatively. Firstly, learning English through CL enables students to work in groups and discuss many tasks where they can share information and knowledge (Gillies, 2007). Secondly, weak students in each group learn from more able students rather than their teacher (Johnson & Johnson, 2003).

Researchers in the CL field believe that students can learn more efficiently in a CL environment than in more competitive or individualistic environments (Johnson and Johnson, 2003). The results obtained were consistent with the results of many previous studies. For example, Liao (2005) designed a quasi-experimental comparison group study which examined the impact of CL on motivation, learning strategy utilisation, and grammar achievement of 42 college level English foreign language students in Taiwan over a three month period. Data was collected from learners' pre-test and post-test scores and the study results revealed that CL had large positive effects on motivation and English grammar achievement. Sung and Hwang (2013) found that CL not only benefits the learners in both learning attitudes and motivation, it also increases their achievements. Karacop and Doymus (2013) pointed out that the learners gain more knowledge and increase academic achievement via the CL and jigsaw techniques than their peers using traditional learning methods.

Kao (2003) and Liao (2005) showed that motivation and speaking skills can be enhanced via CL. Other studies were conducted by Dang (2007), Le Ha (2004, 2006), Tuan (2010), and Vo (2010) on the effectiveness of CL on the achievements of students in secondary and intermediate levels. The results showed that students' language skills and achievements were

improved, interpersonal skills were developed, and creative thinking was promoted with the adoption of CL.

Other studies such as Gillies (2011), Kao (2003), and Liao (2005) concluded that CL increased student's achievements. Similarly, in the current study, the researcher videotaped eight classes in four secondary schools to identify why CL leads to increased student achievement and found that students who learn English via CL obtained higher scores on their English achievement test (see chapter 5). Moreover, Xue (2013) indicated that EFL learners' communicative competence, such as grammatical competence, sociolinguistic competence, and strategic competence, was significantly improved with the use of CL.

Many of the studies on CL have used the achievement test results only to identify whether CL increases students' achievements or not. Few have examined what happened in the groups as the students cooperate with each other while they are learning EFL. In this study, the data not only involves pre- and post-measures but it also involves looking at what is occurring in the groups, such as students' behaviours. The researcher drew on various sorts of evidence to explain whether the gains can be attributed to CL or not (see chapter 5).

This is the case largely because the majority of studies have used quasi-experimental designs in which post-test outcomes were compared to pre-test performance. There is still not much known about what students actually do in a CL class or how their behaviours contribute to academic and other outcomes. It is evident from the results that there was a small gain for CL groups but at the same time the quasi-experimental design is not enough to explain what is happening in the classroom. Further, the samples were not large as there were only four secondary schools and 139 students. In this case, video data provided additional information about the differences between the experimental conditions and the control conditions in terms of behaviour states which helped to explain why students in the experimental classes achieved higher scores on their EGAT than did their peers in the control groups. The video data were also used to provide insights into how the students behaved in the different conditions and whether this helped to account for the differences obtained in the two conditions on the EGAT. The results of students' behaviour states are presented and discussed in the following section.

Students' Behaviour States

Procedures.

The researcher videotaped eight classes at four secondary schools: two schools in the experimental condition who have trained with CL skills, and two schools in the control condition without this training, for a 12-week period from the beginning of August 2012 to the end of November 2012. Two tenth grade classes from each school participated in the study. In the experimental classes, students were divided into two CL groups and each of the groups was video-recorded for a total of twelve hours for the two conditions. Similarly, in the control classes, the researcher asked the teachers to form two small groups of students in each classroom and each group was videotaped three times for 15 minutes each.

The English teachers in the experimental classes participated in a workshop that developed their knowledge of implementing CL in their classroom. The other two English teachers of the students in the control condition did not receive this training, but the researcher spent the same length of time introducing them to different books about teaching English as a second language in Saudi Arabia. These two different workshops are discussed in more detail in Chapter 3.

The students in both the experimental and the control conditions studied the same English lessons in their groups for one hour, four times a week. The English teachers taught their students by following the techniques outlined by Gillies (2007) and Webb (1995) for introducing different activities, providing follow-up practice, and demonstrating procedures for working on prescribed tasks.

Statistical analysis.

The Kruskal-Wallis test was used to determine the overall impact of the intervention on the students' behaviour states in the two conditions in all three time periods. The Kruskal-Wallis test, which is used when the data sets are small, allows for between-groups effects to be identified. Because each class was videotaped three times throughout the study either in the experimental or control conditions, the researcher analysed and discussed all these video clips from Time 1 to Time 3 to give more reliable results. The researcher videotaped all eight classes at the beginning (Weeks 2 to 4), the middle (Week 6 to 8), and at the end of the study

(Weeks 9 to 11). These different results for Times 1 to 3 are discussed separately in the following sections.

Students' behaviour states (Time 1, weeks 2 to 4).

In order to determine if there were differences in the students' behaviour states between the conditions at Time 1, four Kruskal-Wallis tests were conducted on the frequency of recorded behaviour states for the students in the two conditions.

Table 4.7

Tests of Between Group Effects for Four Behaviour Variables at Time 1 by Condition

Variables	N	Mdn	X^2	*P*
Cooperation				
Experimental	32	9.0	9.875	.002
Control	32	7.0		
Non Cooperation				
Experimental	32	2.0	7.417	.006
Control	32	3.0		
Individual task oriented				
Experimental	32	2.5	7.538	.006
Control	32	3.0		
Individual non-task oriented				
Experimental	32	2.0	.456	. 500
Control	32	2.0		

It is evident from Table 4.7 above that there were significant differences between the conditions in: cooperative behaviour, X^2 (2, N = 32) = 9.875, p = .002; non-cooperative behaviour, X^2 (2, N = 32) = 7.417, p = .006; individual task oriented behaviour, X^2 (2, N = 32) = 7.538, p = .006; but not in individual non-task oriented behaviour, X^2 (2, N = 32) = .456, p = .500. The results showed that the students in the experimental condition worked cooperatively more than their peers in the control condition (Mdn = 9, N = 32) at Time 1. Moreover, the results pointed out the significance between the students in the experimental condition and the students' in the control condition in terms of the individual task oriented variable (Mdn = 3, N = 32).

It is clear from the Table 4.7 above that there is no statistical significance between the students in the experimental condition and the control condition in terms of the individual non-task oriented behaviour at Time 1.

Students' behaviour states (Time 2, weeks 6 to 8).

Similarly, in order to determine if there were differences in the students' behaviour states between the conditions at Time 2, four Kruskal-Wallis tests were conducted on the frequency of recorded behaviour states for the students in the different conditions.

Table 4.8

Tests of Between Group Effects for Four Behaviour Variables at Time 2 by Condition

Variables	*N*	Mdn	X^2	*P*
Cooperation:				
Experimental	32	10.0	29.893	.000
Control	32	7.0		
Non Cooperation:				
Experimental	32	2.0	10.454	.001
Control	32	3.0		
Individual task oriented:				
Experimental	32	2.0	17.093	.000
Control	32	3.0		
Individual non-task oriented:				
Experimental	32	2.0	1.442	.230
Control	32	2.0		

The results showed that there was a significant difference between the conditions in terms of: cooperation behaviour, X^2 (1, N = 32) = 29.893, p = 000; noncooperation behaviour, *X2* (1 N = 32) =10.454, p = .001; individual task oriented behaviour, X^2 (1, N = 32) = 17.093, p = .000; but not in individual non-task oriented behaviour, X^2 (1, N = 32) =1.442, p = .230. The results showed that the students in the experimental condition worked cooperatively more frequently than their peers in the control condition (Mdn = 10, N = 32) at Time 2. Furthermore, it is clear from the Table 4.8 above that there is no significant difference between the students in the experimental condition and the control condition in terms of the individual non-task oriented variable (Mdn = 2, N = 32). Moreover, the results pointed out

the significance between the students in the experimental condition and the students in the control condition in terms of the individual task oriented variable (Mdn = 3, *N* = 32).

Students' behaviour states (Time 3, weeks 9 to 11).

Similarly, at Time 3, four Kruskal-Wallis tests were conducted on the frequency of recorded behaviour states for the students in the different conditions.

Table 4.9

Tests of Between Group Effects for Four Behaviour Variables at Time 3 by Condition

Variables	N	Mdn	X^2	P
Cooperation				
Experimental	32	11.00	40.498	.000
Control	32	8.00		
Non Cooperation				
Experimental	32	1.00	18.235	.000
Control	32	2.50		
Individual task oriented				
Experimental	32	1.00	13.812	.000
Control	32	3.00		
Individual non-task oriented				
Experimental	32	1.00	5.327	.021
Control	32	2.00		

In order to determine if there were differences in the students' behaviour states and between the conditions at Time 3, four Kruskal-Wallis tests were conducted on the frequency of recorded verbal interactions for the students in the differing conditions. The results showed that there was a significant difference between the conditions in cooperation behaviour, X^2 (2, N = 32) =40.498, p =000; non-cooperation behaviour, X^2 (2, N = 32) =18.235, p = .000; individual task oriented, X^2 (2, N = 32) =13.812, p = .000; and in individual non-task oriented behaviours, X^2 (2, N = 32) = 5.327, p = .021. The results showed that the students in the experimental conditions worked cooperatively more than their peers in the controlled condition (Mdn = 11, N = 32) at Time 1. Furthermore, it is clear from the above table that

there is a significant difference between the students in the experimental condition and those in the control condition in terms of individual non-task oriented variables (Mdn = 2, *N* = 32). Moreover, the results pointed out the significant differences between the students in the control condition and the students in the experimental condition in terms of individual task oriented variable (Mdn = 3, *N* = 32).

An examination of the Kruskal-Wallis tests shows that the students in the experimental conditions displayed more cooperative behavioural states and less non-cooperative states, individual task-oriented, and individual non-task behaviours than their classmates in the control condition. In addition, outcome scores were, on average, higher in the experimental condition for cooperative behavioural outcomes. They were lower in the experimental condition for non-cooperation behaviour, individual task oriented and individual non-task oriented.

Chapter discussion.

The purpose of this study was to investigate if there were differences in the EGAT for students who worked in CL groups in contrast to those who worked in traditional small groups, and to determine if there were differences in the behaviours of the students in the two conditions. The researcher used the EGAT to determine if there were significant differences between the students who learned English in the CL environment and the students who learned in the traditional small group learning class. Although the difference was not significant in the pre-test, there was a significant difference in the post-test in favour of the experimental groups who learned English in the CL environment. Results showed that participants in the experimental group obtained more marks and achieved greater success overall in the multiple choice section than in the writing task. It is clear that the students' writing achievements were less significant and they did not learn to write well through the CL environment. However, students' achievements on the multiple choice questions were compelling; that is, the students had higher marks when they learned English as a foreign language through CL in Saudi Arabia. Furthermore, the results demonstrated that the students in the experimental groups exhibited more cooperative behaviours and less non-cooperative behaviours than their classmates in the control groups. As a group, they worked together in a synchronised manner to achieve success on shared group tasks (Gillies, 1998, 2004).

Sharan and Shachar (1988) found that students' participation increased through in-group discussions as a result of more valuable contributions to these discussions. In this study, data revealed that the students in the experimental groups have better utilised a range of cognitive language strategies than their peers in the control condition. This may be due to a natural but unexplained propensity to be more verbally interactive, thereby increasing more helping behavioural states from specific responses and short responses, to more detailed responses and explanations. Barnes (1969) pointed out that when students used language out in reciprocal exchanges, they modify the way they use it to organize reality and are able to find new functions for language in feeling and thinking. Similary, EFL learners who learn English skills via cooperative learning gain different skills and share different ideas.

In addition to examining the differences in the behaviour states of EFL learners, the present study also looked at whether the students' achievements in English are positive or not and evaluated the extent to which their behaviour states affect their achievement in a CL environment. The results, as stated above, have shown that the students achieved more marks in the experimental condition than did their peers in the control condition.

Students' behaviour states provide insights into how students behave in a CL environment and traditional small group environment. However, this data does not provide enough evidence to conclude that students who behave cooperatively obtain higher scores than their peers who behave less cooperatively. There is a need for a more in-depth examination of students' verbal interactions and their communication in both the CL environment and traditional small learning groups. In the following chapter, the researcher discusses EFL learners' verbal interaction and presents how they interact with each other. The researcher provides examples from both conditions to show the difference between them and to answer the question of why CL was the point of difference between students' achievement levels in the two conditions.

Chapter summary.

This chapter presented and discussed findings of the English grammar achievement test (EGAT) and the students' behaviour states data. The study found that there was a significant difference in the post-test English achievement test in favour of the experimental condition over the control group. Results showed that the participants obtained higher scores in the multiple choice part rather than the writing task. Furthermore, it was found that the students in the experimental condition worked more cooperatively and experienced less non-cooperative behaviours than their peers in the control condition. In the next chapter, the verbal interaction data are presented and discussed.

Chapter 5: Verbal Interactional Data and Analysis

Introduction

In the previous chapter, the findings of the quantitative data on students' behaviour states and EGAT were presented. This chapter presents the analyses of the video data, which are both quantitative and qualitative. There are two main sections in this chapter. In the first section, the researcher presents and discusses the quantitative video data; in the second section, the researcher analyses and explains the students' learning processes in CL discussions during the 12 week intervention. The interactional data and students' conversations from the eight classes were collected to examine their learning processes thoroughly. The students' verbal interactions are analysed in the experimental and control conditions and conversational examples are provided and discussed to show the difference between these two learning conditions. This is followed by an explanation and interpretation of the related examples. Based on the comparisons of the experimental condition and control condition, this chapter ends with a conclusion of the findings.

The focus of the chapter is the linguistic forms of the students' discussions. An attempt has been made to discuss the learning process in the data and to interpret it, instead of just subjecting it to statistical analysis. Vygotsky (1980) contended that humans use psychological tools to mediate their ideas just as they use physical tools to impact the world. Students use language as a cognitive tool to assist their learning and thinking processes. Statistical analyses were discussed in the previous chapter and the results showed that the students who learned English through a CL environment obtained higher scores on the EGAT than their peers in the traditional learning environment. Moreover, the students who learned English through CL worked more cooperatively than their peers in the traditional learning condition. In the previous chapter, the statistical results showed that there are significant differences between the experimental and control groups in terms of students' behaviours and their achievements. In response to these differences, the researcher decided to analyse some conversation examples from the group discussions of both the experimental groups and the traditional learning groups to determine what is happening in both conditions and to identify the reasons why students who learn cooperatively have higher levels of achievement than

their peers in the traditional learning small group environment. In this chapter, the researcher also analysed video data qualitatively and provided a number of examples from the experimental and control conditions.

Quantitative Analysis of Observational Data

Procedures.

The researcher videotaped eight classes at four secondary schools: two schools in the experimental condition who were trained in CL skills, and two schools in the control condition who did not participate in the training. This occurred over a 12 week period from the beginning of August 2012 to the end of November 2012. In each school, there were two classes from the tenth grade. In the experimental classes, eight students were chosen randomly from each class and divided into two CL groups (four students in each group). Each of the groups was video-recorded three times for 15 minutes. Then two CL groups were chosen randomly from the pool of the students in each class. Two video cameras were used to record two groups each week. In the control classes, eight students were chosen randomly from each class and divided into two small groups (four students in each group). Both the experimental classes and control classes were videotaped for three English lessons (see Chapter 3).

The English teacher participants in the experimental condition took part in a workshop to develop their knowledge of how to implement CL in their classroom. The other two English teachers of the students in the control condition group did not receive this training, but the researcher spent the same amount of time introducing them to different books about teaching English as a second language in Saudi Arabia. The students in both the experimental and control conditions studied the same English lessons in their groups four times a week for one hour per session. The English teachers taught their students in both conditions by following the techniques outlined by Gillies (2007) and Webb (1995) for introducing numerous different activities, providing follow-up practice, and demonstrating procedures for working on them.

Larsen-Freeman (1997) examined the complexity of second language learning and found that the second language acquisition process is dynamic, complex, and nonlinear. Due to

complexities of classroom life and discussions, the researcher and his assistants identified ten common verbal interaction categories from both conditions highlighted during students' group discussions when they were learning English as a foreign language. The verbal interaction categories that were identified are: makes basic statement during discussion; responds to others' requests for basic information with a brief statement; explanation given with examples; asks open-ended questions, e.g. how, why; requests clarification from others; positive interruption; negative interruption; directs actions of the group, e.g. gives directions, organizes responsibility; supports or encourages others in the group; and non-specific verbal interaction (see Appendix 2 for coding timetable).

Statistical analysis.

The overall impact of the intervention on the verbal interaction in the two conditions at the three times was calculated using the Kruskal-Wallis test. The Kruskal-Wallis test, which is used when the data sets are small, allows for the identification of between groups effects. The verbal interaction data were collected across three different times to increase reliability and to account for differences in students' performances from one time to another. It is not sufficient to collect the data at one point in time only and make judgments about the two conditions based on that single observation. The researcher videotaped data at Time 1 in weeks 2 to 4 and videotaped data at Time 2 in weeks 6 to 8. Moreover, the data were videotaped at Time 3 in weeks 9 to 11. The verbal interactions outcomes across three times are presented in the following sections.

Verbal interaction outcomes (Time 1, weeks 2 to 4).

In order to determine if there were differences in the students' verbal interactions between the two conditions at Time 1 (weeks 2 to 4) after the intervention, ten Kruskal-Wallis tests were conducted on the frequency of recorded verbal interactions for the students in the different conditions.

Table 5.1
Tests of Between Group Effects for 10 Interaction Variables at Time 1 by Condition

Interaction variables	*N*	Mdn		X^2	*p*
		Experimental	Control		
Makes basic statement during discussion	8	9	5.5	9.771	.002**
Responds to others' requests for basic information with brief statement	8	7.5	6	3.744	.049
Explanation given with an example	8	6	4	5.735	.017
Asks open-ended questions (how, why…)	8	4.5	4	.183	.668
Requests clarification from others	8	6	5	.728	.393
Positive interruption	8	4.5	3	1.659	.198
Negative interruption	8	2.5	3	1.371	.242
Direct actions of the group (gives directions, organizes responsibility)	8	2	3	2.418	.120
Support or encourages others in the group	8	3.5	5	3.122	.077
Non-specific verbal interaction	8	2	4	10.920	.001**

Note. $p < .01$; ** *N* = number; Mdn = Median; X^2 = chi-square

It is clear from the results shown in Table 5.1 that there was a significant difference between the conditions in making basic statements during discussion, $X^2(1, N = 8) = 9.771$, $p = .002$; and nonspecific verbal interaction, X^2 $(1, N = 8) = 10.920$, $p = .001$.

It is important to tighten the *p* value to .01 rather than .05 because ten variables are being analysed at each point in time and this will avoid a Type 1 error (that is, accepting that something is significant when it is not). The tighter *p* value will reduce occurrences of this error and make the presentation of the results stronger.

In contrast, there were no significant differences between the students in the two conditions in other verbal interactions such as: responds to other's request for basic information with brief statement, X^2 $(1, N = 8) = 3.744$, $p = .049$; explanation given with an example X^2 $(1, N = 8) = 5.735$, $p = .017$; request clarification from others, X^2 $(1, N = 8) = .728$, $p =$

.393; directs actions of the group (gives directions, organizes responsibility), X^2 (1, N = 8) = 2.418, p = .120; positive interruption, X^2 (1, N = 8) = 1.659, p = .198; asks open-ended questions (how, why…), X^2 (2, N = 8) = .183, p = .668; supports or encourages others in the group, X^2 (1, N = 8) = 3.122, p = .077; and negative interruption, X^2 (1, N = 8) = 1.371, p = .242.

The results showed that the students in the experimental condition were more verbally interactive in making basic statements during their discussion (Mdn = 9.00, N = 8) while the students in the control condition engaged in significantly more non-specific verbal interactions. However, the results showed that there was no significant difference between the students in either the experimental or control conditions in terms of verbal interaction, including: supports or encourages others in the group (Mdn = 3.50, N = 8); makes a positive interruption (Mdn = 4.5, N = 8); makes a negative interruption (Mdn = 2.5, N = 8); and asks open-ended questions (Mdn = 4.5, N = 8) at Time 1.

Verbal interaction outcomes (Time 2, weeks 6 to 8).

In order to determine if there were differences in the students' verbal interaction between the two conditions at Time 2 (weeks 6 to 8) after the intervention, ten Kruskal-Wallis tests were conducted on the frequency of recorded verbal interactions for the students in the different conditions.

Table 5.2
Tests of Between Group Effects for 10 Interaction Variables by Condition

Interaction variables	N	Mdn		X^2	p
		Experimental	Control		
Makes basic statement during discussion	8	12	7	11.463	.001**
Responds to other's requests for basic information with brief statement	8	10	7.5	9.216	.002**
Explanation given with an example	8	8	5	8.284	.004**
Asks open-ended questions (how, why…)	8	6	5	1.996	.158
Requests clarification from others	8	7	6	2.119	.145

Interaction variables	*N*	Mdn		X^2	p
		Experimental	Control		
Positive interruption	8	6.5	4	7.836	.005**
Negative interruption	8	1	4	9.485	.002**
Direct actions of the group (gives directions, organizes responsibility)	8	2	2	.373	.542
Supports or encourages others in the group	8	5.5	3.5	4.314	.038
Non-specific verbal interaction	8	1	3.5	10.970	.001**

Note. $p < .01$; **; *N* = Number; Mdn = Median; X^2 = Chi-square

Furthermore, as it is important to determine again if there were differences in the students' verbal interaction between the conditions at Time 2, ten Kruskal-Wallis tests were conducted on the frequency of recorded verbal interactions for the students in the different conditions. The results showed that there were significant differences between these conditions: makes basic statements during discussion, X^2 (1, $N = 8$) = 11.463, $p = .001$; responds to others' requests for basic information with a brief statement, X^2 (1, $N = 8$) = 9.216, $p = .002$; explanations given with an example X^2 (1, $N = 8$) = 8.284, $p = .004$; positive interruption, X^2 (1, $N = 8$) = 7.836, $p = .005$; negative interruption, X^2 (1, $N = 8$) = 9.485, $p = .002$; and nonspecific verbal interactions, X2 (1, $N = 8$) = 10.970, $p = .001$.

In contrast, there were no significant differences in other verbal interaction categories such as: requests clarification from others, X^2 (1, $N = 8$) = 2.119, $p = .145$; directs actions of the group (gives directions, organizes responsibility), X^2 (1, $N = 8$) = .373, $p = .542$; asks open-ended questions (how, why…), X^2 (1, $N = 8$) = 1.996, $p = 158$; and supports or encourages others in the group, X^2 (1, $N = 8$) = 4.314, $p = .038$.

An examination of the above table showed that the students in the experimental condition provided more help in the form of making basic statements during discussions (Mdn = 12, $N = 8$); responds to others' requests for basic information with brief statement (Mdn = 10, $N = 8$); explanation given with an example (Mdn = 8, $N = 8$); positive interruption (Mdn = 6.50, $N = 8$); than the students in the control conditions.

Verbal interaction outcomes (Time 3, weeks 9 to 11).

Finally, to determine if there were differences in the students' verbal interaction between the conditions at Time 3 (weeks 9-11) after the intervention, ten Kruskal-Wallis tests were conducted on the frequency of recorded verbal interactions for the students in the different conditions.

Table 5.3
Tests of Between Group Effects for 10 Interaction Variables at Time 3 by Condition

Interaction variables	*N*	Mdn		X^2	*P*
		Experimental	Control		
Makes basic statement during discussion	8	13	7.5	11.463	.001**
Responds to others' requests for basic information with brief statement	8	12	8	10.790	.001**
Explains and gives an example	8	9.5	5.5	10.806	.001**
Ask open-ended questions (how, why…)	8	8	6	4.345	.037
Requests clarification from others	8	9	7.5	2.221	.136
Uses positive interruption	8	8.5	4.5	7.567	.006**
Uses negative interruption	8	1	2	4.785	.029
Directs actions of the group (gives directions, delegates responsibility)	8	2	4	5.984	.014
Supports or encourages others in the group.	8	7.5	7	.559	.023
Non-specific verbal interaction	8	.50	2.5	9.102	.003**

Note. $p < .01$; **; N = number; Mdn = median; X^2 = Chi-squared

Once again, in order to decide whether there were differences in the students' verbal interactions between the conditions at Time 3, ten Kruskal-Wallis tests were conducted on the frequency of recorded verbal interactions for the students in the different conditions. The results showed that there were significant differences between the conditions in: making basic statements during the discussion, X^2 (2, N = 8) = 11.463, p = .001; responding to other's

requests for basic information with brief statement, X^2 (2, N = 8) = 10.790, p = .001; explaining and giving an example, X^2 (2, N = 8) = 10.806, p = .001; using positive interruption, X (2, N = 8) = 7.567. p = .006; and using nonspecific verbal interaction, X^2 (2, N = 8) = 9.102, p = .003. In contrast, there were no significant differences in other verbal interactions such as: requesting for clarification from others, X^2 (2, N = 8) = 2.221, p = .136; asking for open-ended questions (how, why…), X^2 (2, N = 8) = 4.345, p = .037; using negative interruption, X (2, N = 8) = 4.785, p = .029; directing the actions of the group (gives directions, delegates responsibility), X (2, N = 8) = 5.984, p = .014; and supporting or encouraging others in the group, X^2 (2, N = 8) = .559, P = .023.

An examination of Table 5.3 showed that, compared to the students in the control condition, the students in the experimental condition provided more help in the form of making basic statements during discussion (Mdn = 13.5, N = 8); responding to other's requests for basic information with a brief statement (Mdn = 12, N = 8); giving an explanation with an example (Mdn = 9.5, N = 8); and using positive interruption (Mdn = 8.50, N = 8). In contrast to their peers in the experimental condition, the students in the control condition: made more negative interruptions (Mdn = 2 , N = 8); directed the actions of the group (gives directions, organizes responsibility) (Mdn = 2, N = 8), and used non-specific verbal interaction (Mdn = 2.5 , N = 8).

Discussion: Summary of the verbal interactional results.

As indicated in Tables 5.1, 5.2, and 5.3, the results showed that students became more cooperative over time, particularly those students in the experimental condition who were more responsive to each other than their peers in the control condition. The students in the experimental condition were trained to listen and help each other, whereas students in the control conditions did not learn these skills. It is clear from Table 5.1 that there were two significant verbal interactions at Time 1. However, over the course of the experiment, students gained more skills and this number increased to four or five verbal interactions, which were significant at Times 2 and 3. In short, students in the experimental conditions developed their CL skills during the period of the study. For example, their cooperation was apparent from the assistance that they provided to each other and their use of explanations and other types of helping behaviours, such as giving directions or passing materials that were needed for a particular task.

Moreover, the results show that the students in the experimental groups communicated and interacted more with each other than did their peers in the control groups. The different lessons presented to the students required them to interact and discuss the process, and this was important to the members in terms of keeping them involved in the task, identifying differences, and reaching agreements. However, the students in the experimental condition, unlike their classmates in the control condition, demonstrated an understanding of the need to interact with each other, ask for clarification, respect others' opinions, discuss ideas, and share information as they learned and worked on different problem-solving tasks together (Gillies, 2004).) As noted by Cohen (1994), when the students in a group have to deal with a problem with no definitive answer, productivity will depend on the frequency of task-related interactions.

Other researchers have reported similar findings. For example, Gillies (2004) found that cooperative groups provided more help to group members than uncooperative groups. Webb (1991) stated that constructive learning outcomes were the result of explanations given by one student to another. Inaccurate or complicated explanations, which do not remove the queries of help-seekers, do not result in positive accomplishments as the learners do not understand and fail to perform their tasks efficiently. Webb (2009) stated that the students acquiring help want help with specific questions and the help-providers provide detailed explanations. The help-seekers then use the explanations in their tasks and future projects. In this way, their understanding is improved, resulting in the production of better work.

The effect of efficient communication has an important effect on learning (Gillies & Ashman, 1995; Webb & Mastergeorge, 2003b). Efficient communication behaviour includes providing information for peers, acquiring an explanation, and implementation of the explanation (Webb & Mastergeorge, 2003a). Children who help each other by giving explanations can benefit others if they have experienced working in cooperative groups.

Researchers who have studied peer interactions and learning have used different methods. Fall, Webb, and Chudowsky (2000) preferred to classify accurate information in a helping behaviour into a detailed coding scheme that differentiated between poor and high quality helping behaviour when seeking, providing, and implementing help. Vedder (1985) pointed out that very important factor in cooperative group learning with helping behaviour; he proposed that helpers should be aware of the information they are transferring and have

implemented the information themselves. If this is not taken care of, then the students seeking help are misguided, resulting in poor learning and weakened accomplishments. Fall, Webb, and Chudowsky (2000) argue that there is a difference between executive help-seeking and instrumental help-seeking. Executive help-seeking refers to asking for an answer, whereas instrumental help-seeking is asking for an explanation and clarifications.

There are differences between the experimental groups and control groups in terms of the EFL learners' performance in the EGAT, in the behaviour states, and lastly in the quantitative verbal interaction data. Depending on that, the researcher analysed some conversation examples of the cooperative group discussions from the experimental groups and compared them to the traditional learning groups to analyse them deeply and learn how the EFL learners are assisting and interacting with each other. It is important to discuss what is happening in the two conditions and to explain the reasons why the EFL learners who learn via CL have increased achievements to their peers in the traditional learning small group environment. Furthermore, examples were analysed to highlight the learning processes and show the differences in the two conditions in terms of CL principles and ten verbal categories. Eight examples were selected randomly and analysed qualitatively from the video data to show how the EFL learners interact and communicate with each other when learning English in EFL context. The following sections discuss these examples which were provided for the ten main categories discussed in the quantitative section.

Qualitative Analysis of the Observation Data

There are eight examples: four examples from the experimental condition and four examples from the control condition. The researcher has presented one example from the experimental condition and another from the control condition to show the differences between the two conditions. Vignettes 1, 3, 5, and 7 are from the experimental condition, while Vignettes 2, 4, 6 and 8 are from the control condition. Because the examples are selected from EFL classes and the students spoke both English and Arabic, the researcher translated Arabic expressions into English and presented them in italics; the normal font indicates the original English words. The eight examples from both conditions are presented and discussed in the following vignettes.

Vignette 1: Cooperative learning group

The following vignette displays a few minutes of the students' verbal interactions after they had been working on the task for about 15 minutes in the EFL class. In this vignette, the participants' names are Saeed, Ali, Khalid, and Saad. The students were discussing the present simple tense in the CL class. In the example below, the students are discussing how to answer some exercises in the present simple tense. At the beginning, the students are confused about the difference between the different tenses, but they build on one another's ideas so that, by the end, they learn the structure in question, that is, the present simple, and not the past tense.

This example highlights the different verbal categories that were identified in Tables 5.1, 5.2, and 5.3. For instance, in this vignette, the highlighted verbal categories are: asks questions, seeks clarification, provides explanation, and gives explanation with an example. The other verbal categories are discussed in the Vignettes 2, 3, 4, 5, and 6.

1. Saeed: Can we choose "do" from these four options? In order to answer this question, *we have to cooperate with each other to select the appropriate answer.*
2. Ali: Why do not we choose "did" *instead of do because this sentence in the past*.
3. Khalid: How do you know that this *sentence* in the past? **(asks a question)**
4. Ali: I am not sure, but I guess. English subject is *difficult to me*. *Can you clarify more to me? It is not clear to me.* **(seeks clarification)**
5. Saad: *In fact*, we can say, "Does he go to school every day?" but we cannot say, "Did he go to school every day?" *The teacher gave us some examples last lesson, such as, "Do the students go to school every day?"* Do you *remember that example* when he said that "every day" is a phrase used in present simple, not in the past simple. **(provides explanation)**
6. Khalid: Oh, oh, *I remember now that is true*. There is another example for this tense that is "I play football every day." *Moreover, there is another example*: "My dad goes work every day." **(gives explanation with an example)**
7. Saeed: Please, *I get confused*. I agree with you that this sentence is not in the past, but should we choose do or does**. (seeks clarification)**
8. Khalid: *This is my problem, too*. Would you minding explain more *on this point*?

9. Saad: I think "does" is a correct answer *because the subject is the singular "he". If the subject is plural, then we can choose do instead of does*. For instance, "Does she visit her mother every week? Does he study every day?"
10. Ali: Many thanks, Saad. Yeah, I got it; it is right. *At this moment, I can differentiate between these two tenses.*
11. Khalid: Let's write down this answer. I agree with you.

It is clear from the above extract that the students were building on each other's ideas. The dynamic interaction between them and their language was very rich as they asked questions, made statements, gave explanations with examples, and provided clarification and responded to each other. Furthermore, it is very interesting that the EFL learners in the above extract follow the five CL principles that enable them to interact and communicate in a proper CL environment. In this vignette, the EFL learners apply one of the CL principles which is Positive interdependence. For example, in turn 1, Saad asks the question: "Can we choose 'do' from these four options?" He used the pronoun "we" instead of "I". Also, in turn 2, Ali asks a question: "Why do not we choose did instead of do"? Then, in turn 11, Khalid says, "Let's write down this answer" and uses the collective imperative verb contraction "let's" instead of the singular pronoun "I", indicating that they should work together. These examples reveal that the students in the above extract understood that they were linked together and needed to work cooperatively on the task. Positive interdependence exists when group members are linked together in such a way that one cannot succeed unless others do also (Gillies, 2007). Positive interdependence is "the perception that you are linked with others in a way so that you cannot succeed unless they do and vice versa" (Johnson & Johnson, 1991, p. 56). In other words, students assist each other to learn. When students understand and adopt this CL principle, they gain higher scores and accomplish more tasks (Gillies, 2007). Gillies and Khan (2008) pointed out that those learners who provide more detailed assistance to each other during CL gain higher scores on follow-up tests than their peers who do not show these help-giving behaviours.

It is clear from the vignette that the students built on the previous response by giving explanations. For example, in turn 1, Saeed asks a question and seeks help from his group members; likewise, in turns 2, 3, and 4, Ali and Khalid build on Saeed's question and ask more questions to find out the answers. In turn 5, Saad provides another explanation by giving an example; he commented on Saeed's question: "The teacher has given us some

examples last lesson such as 'Do the students go to school every day?'" In turn 6, Khalid started to remember the teacher's explanation from the last lesson; he said: "Oh, oh, I remember now that is true." The above extract showed that the students who learn English through CL follow CL principles and processes, which allow the students to learn from each other.

It is important to highlight that the students in the above vignette are learning from each other; they assist and teach each other with the result that they learn and benefit from each other to better understand new tasks or knowledge. It is clear that as the student learns, his understanding shifts from an unknown state to a known state. For example, in turn 7, Saeed felt confused and asked his colleague to provide a better answer; he said, "*Please I get confused. I agree with you that this sentence is not in the past,* but should we choose do or does?" In turn 9, Saad explained to him the differences between these tenses, stating, "I think does is a correct answer *because the subject is singular 'he'. If the subject is plural then we can choose do instead of does*. *For instance,* 'Does she visit her mother every week? Does he study every day?' In turn 10, Ali understands the answer and indicates that he has learned the concept: "Many thanks Saad. Yeah, I got it, it is right. *At this moment, I can differentiate between these two tenses."*

The following vignette from the traditional small group condition provides an example of the differences between these two conditions and how the students in the control condition cooperate and work with each other.

Vignette 2: Traditional learning small group.

Vignette 2 encompasses a few minutes of the students' verbal interactions after they had been working on the task for about 15 minutes in the EFL class. In this vignette, the students' names are Faisal, Hamed, Safer, and Saif. They are discussing the present simple tense in the traditional learning environment (small groups). None of the students received any training in the CL program, unlike their colleagues in the experimental condition. In the example below the students are engaged in discussing how to answer some exercises in the present simple tense. This example highlighted different verbal categories that were identified in Tables 5.1, 5.2, and 5.3. For example, in this vignette, the verbal categories that are highlighted are: makes basic statement during discussion, asks questions, gives examples, makes negative

interruptions, and directs actions of the group. The others verbal categories are discussed in Vignettes 3, 4, 5, and 6.

1. Faisal: Do you think we add ‘s’ or ‘es’ to the verb (watch)?
2. Hamed: *I prefer to work alone because working together takes up a lot of time. I suggest working individually and* at the end we will discuss it.
3. Safer: I think that is a good idea. *I do not like to work together***. (makes statement during discussion)**
4. Saif: When can I add ‘s’ or ‘es’ to different verbs? **(asks a question)**
5. Hamed: The teacher *explained it last lesson*, but I cannot *explain it to you now because I am very busy with my work.*
6. Faisal: Some verbs end with ‘s’ and others end with ‘es’. For example, verbs that end with letters such as *ch, s, o, sh* will end with ‘es’ and others will end with ‘s.’ **(gives examples)**
7. Safer: *Repeat the previous explanation,* Faisal. I was busy when you explained it. **(uses negative interruption)**
8. Faisal: I’m sorry. *I cannot repeat the explanation. It is a good idea to ask the teacher* at the end of this lesson. **(directs actions of the group)**
9. Saif: I agree with Faisal. I should add ‘es’ and the verb will be “watches”. Ok, I will write it down.
10. Faisal: Ok, I will move to another exercise.

It is evident in the above vignette that the students’ discussions did not result in them building on each other’s ideas. There was no dynamic interaction between them and their language was not rich with *asking questions, making basic statements during discussions, providing explanations with examples,* or *responding to each other.* The EFL learners in the above extract do not follow the principles of CL.

Moreover, they do not have a sense of group identity and prefer to work by themselves rather than as a group. In turn 2, Hamed states: “I prefer to work alone”, using the pronoun “I” instead of “we”. Also, in turn 3, Safer asserts, “I do not like to work with others”. Then, in turn 10, Faisal announces that he will move to another individual exercise: “Ok, I will move to another exercise.” In the previous three examples, they used the singular pronoun “I” instead of the plural “we”, which indicates that the students tend to see themselves as

individuals rather than as part of a group working cooperatively together. These examples demonstrate that the students in the above extract do not see themselves as working interdependently with others.

It is also clear from Vignette 2 above that the students did not build on previous ideas and did not help each other in terms of providing explanations and giving examples. For example, in turn 4, Saif seeks help from his group members and asks, "When can I add 's' or 'es' to different verbs?", but, in turn 5, Hamed refused to help Saif or answer his question because he was too busy: "I cannot explain it to you because I am very busy with my work."

The EFL learners in Vignette 2 did not listen to each other and that their discussion is characterized by negative interruptions rather than positive interruptions. For example, in turn 6, Faisal offered an explanation about when to add 's' or 'es' to a verb and mentions that "verbs that end with letters (s, ch, sh, o) end with 'es' and others end with 's'. However, in turn 7, Safer states that he was busy during Faisal's explanation and asks him to repeat it; this is a negative interruption. Faisal refuses to do so and says, "I cannot repeat the explanation. You can ask the teacher at the end of the lesson."

Further differences between the two conditions will be explored in the vignette to follow. This third vignette is from the CL group condition and highlights the differences between these two conditions as well as how the EFL learners' interact with each other and learn different tenses in different conditions.

Vignette 3: Cooperative learning group.

The following vignette reveals a few minutes of the students' verbal interactions after they had been working on the task for about 15 minutes in the EFL class. In this vignette, the students' names are Fahad, Mohammad, Basem, and Majed. They are discussing their future plans, especially jobs and business in the CL environment. In the example below, the students are engaged in practicing future simple tense and doing some exercises to ensure that they understand and can use this tense correctly. During the discussion, they build on one another's ideas and, by the end, they master the tense by practicing examples. The following vignette highlights different verbal categories that were identified in Tables 5.1, 5.2, 5.3. For instance, in this vignette, the verbal categories that are highlighted are: asking open-ended

questions; responding to others' requests; making statements during discussions; and positive interruptions. The other verbal categories are discussed in Vignettes 4, 5, and 6:

1. Fahad*: In fact*, there are many good jobs, *such as a doctor, a lawyer and a pilot, but I am going to be a pilot.* Can you tell me what are you going to be in the future? **(asks a question)**
2. Mohammad: I am going to be a lawyer because my salary will be high I will *be able to buy whatever I need.* **(responds to others)**
3. Basem: To me, *a pilot is a difficult job* and it will need much work and will need more time. *Also, a lawyer is a headache job*. For it, you will need to know small details.
4. Fahad: Basem. Please, *tell us what are you going to be*? **(asks an open-ended question)**
5. Basem: To be frank with you, *I am going to be an academic professor at university*. (**responds to others' request)**
6. Majed: Oh, oh, that is fine. I am going to be a businessman. My father has a good company and *he recommends me to run a new business.*
7. Mohammad: You are lucky, Majed. *However, life will change from time to time*. *I advise you to change your future plans* because if you will fail to open a new business, you will be in a trouble.
8. Basem: This is true, Majed. Why do not you think about being a doctor? It is a good income job and you can also open a new business if you have money.
9. Fahad: I totally agree with you. He can have a job and business at the same time. *If he failed in the business, he would have a job that will save him***. (uses positive interruption)**
10. Majed: Wow, it is right. I absolutely agree with you.
11. Mohammad: *You will achieve both if you work hard.* I wish you all the best. (**makes basic statement during discussion)**

It is evident from the above extract that the student participation in this discussion was beneficial. There was a dynamic interaction between them and their language was rich with ideas and information. For example, they provided explanations with examples, offered support and encouragement to others in the group, used positive rather than negative

interruption, asked different questions, responded to each other, and built on each other's ideas.

Moreover, it is clear that the students in the above example applied CL principles that enabled them to work and help each other in the CL environment. For example, in turn 7, Mohammad advised Majed "to change [his] future plans". In turn 8, Basem confirmed Mohammad's advice: "That is true, Majed." Also, Basem showed he was listening to them properly when he suggested a good job for Majed "Why do not you think about being a doctor? It is a good income job." At the same time, in turn 9, Fahad was also participating in the discussion and demonstrated that he was actively listening, and waiting to take his turn at a suitable time. He agreed with Mohammad and Basem's talk, "I totally agree with you." At the end, in turn 9, Majed showed he accepted the views and comments made by all members of the group when he stated, "Wow, it is right. I absolutely agree with you." The "you" in this statement is the plural "you", referring to the group, not just an individual, and showing that a consensus was reached as a result of the class discussion.

These examples demonstrate that the students in Vignette 3 follow CL principles, especially in the above examples where they applied one of the five CL principles, that is, interpersonal and small group skills. Johnson and Johnson (2008) mentioned four important points that the students have to follow to coordinate efforts between group members: to communicate accurately and unambiguously; to get to know and trust each other; to accept and support each other; and to resolve conflicts constructively. Gillies and Ashman (1998) investigated the effects of structured and unstructured cooperative groups on children's interaction and found that when students had been trained to work together, as they had been in the structured groups where they were taught interpersonal and small group skills, they were more cooperative and helpful than their peers who had not been trained to cooperate.

It is evident from Vignette 3 above that the students provided convincing reasons and gave appropriate examples. For example, in turn 2, Mohammad mentioned his goal of becoming a lawyer and supported that goal with the reason that a lawyer earns a high income: "I am going to be a lawyer because my salary will be high I will be able to buy whatever I need". Another example occurs in turn 3, when Basem offered a convincing reason for Fahad not to become a pilot: "A pilot is a difficult job and it will need much work and more time."

The next excerpt, Vignette 4, discusses how students in the traditional small group learn and practice future simple tense. This vignette clarifies some differences between these two conditions as the students learn future simple tense.

Vignette 4: Traditional learning small group.

The following vignette presents a few minutes of the students' verbal interactions after they had been working on the task for about 15 minutes in their EFL class. In this vignette, the participants' names are Yasser, Saud, Suliman, and Hamza. They are discussing their plans for the weekend, which include an upcoming picnic at a beautiful beach. They are practising the future present simple tense in the traditional learning environment (small groups). None of the students received any training in CL, unlike their colleagues in the experimental condition. In Vignette 4 below, the discussion centres on the participants' preparations for the picnic, including booking a hotel, renting a car and buying necessities from a supermarket. The following example indicates the different verbal categories that were identified in Tables 5.1, 5.2, and 5.3. In this vignette, the highlighted verbal categories are: makes basic statement during discussion, negative interruptions, and directs actions of the group. The other verbal categories are discussed later in this chapter in relation to Vignettes 5 and 6.

1. Yasser: I have a good idea. *Why will not we go to the beach instead of going to the city?*
2. Saud: It will be a suitable place and there will be many activities to do**. (makes basic statement during discussion)**
3. Suliman: I do not trust Yasser's ideas. *Sometimes his suggestions are not acceptable and very bad*. **(uses negative interruption)**
4. Hamza: We is going to the beach. This is the final *decision*. Suliman, you have to go with us. **(directs actions of the group)**
5. Yasser: There are many things to do before going on the *picnic*. These are booking a hotel, renting a car and buying basic needs.
6. Suliman: I am not going to do anything of these. I am not happy with the place. **(uses negative interruption)**
7. Saud: Come on, Suliman, we going to have *a beautiful picnic*.
8. Hamza: *I going to book a hotel in the front of the beach.*
9. Saud: There are many supermarkets there. I will bought our needs from them.

10. Yasser: Suliman going to book a car, is that right? *He is going booking the car tomorrow. See you later.*

It is clear from the above vignette that the EFL learners participating in this discussion did not build on each other's ideas and that there was no dynamic rapport between them. They did not correct each other's mistakes in practicing future tense and their language was not rich with evidence of verbal actions categories, such as: making basic statements during discussions, responding to each other, and providing explanations and support or encouragement to others in the group.

In addition, the EFL learners in Vignette 4 did not apply any of the CL principles, not the least of which in this scenario was the fourth principle, "interpersonal and small group skills." For example, in turn 1, Yasser suggested going to the beach instead of the city, but, in turn 3, Suliman responded to him in an impolite way, demonstrating a lack of interpersonal skills; Suliman rejected Yasser's suggestion and said, "I do not trust on Yasser's ideas. Sometimes his suggestions are not acceptable and very bad." Despite this negative response, Hamza asked Suliman to go with them to the beach, perhaps out of a sense of obligation: "We is going to the beach. This is the last decision. Suliman, you have to go with us." Again, Suliman responded negatively and said that he would not assist his friends with preparations of shopping for the picnic: "I am not going to do any of these. I am not happy with the place."

These above examples demonstrate that the EFL learners in the control condition did not follow the fourth principle of CL, which is interpersonal and small group skills. The EFL learners in the above extract did not accept each other's ideas, their communication and grammar usage was not accurate, and, finally, they did not trust each other. These above three examples demonstrate that the EFL learners do not follow CL principles and did not apply the fourth principle of CL, that is, interpersonal and small group skills, to their discussion. The discussion of Vignette 4 is in stark contrast with the four points recommended by Johnson and Johnson (2008) that the students have to follow to coordinate efforts between group members: to communicate accurately and unambiguously; to get to know and trust each other; to accept and support each other; and to resolve conflicts constructively.

It is clear from Vignette 4 above that the students did not correct each other's mistakes, nor did they help each other in terms of support or correction of others' mistakes. For instance, in turn 4, Hamza made a grammatical error in his future tense usage when he said "We is going

to the beach" rather than "We are". However, his colleagues in the group did not correct his mistakes and did not support him in his learning. Similarly, Saud and Yasser made some mistakes in the future tense in turns 9 and 10. Saud said, "There are many supermarkets there. I will bought our needs from them." Saud should have said "will buy" instead of "will bought". Yasser made another future tense error when he asked if Suliman "is going booking the car tomorrow?"; he should have asked if Suliman was "going to book the car". The EFL learners in the control condition did not assist each other and they did not correct each other's mistakes. The above examples focused on how students learn a variety of tenses in different conditions.

While writing is a difficult task for EFL learners, it is also important to look at how the EFL learners work and interact together to write a paragraph. Vignette 5 reveals how the students in the CL group help each other and participate with different ideas to come up with a good paragraph.

Vignette 5: Cooperative learning group.

Vignette 5 reveals a few minutes of the students' verbal interactions after they had been working on the task for about 15 minutes in the EFL class. In this vignette, the students' names are Saleh, Anas, Abdullah, and Naif. The task is to write a short paragraph about Riyadh, the capital city of Saudi Arabia, using the present simple tense in a CL environment. In the example below, the students are engaged in a discussion of how to write some correct sentences in the present simple tense. At the beginning, the students face difficulties in arranging their ideas and selecting the best idea from the many different viewpoints of the group members; using the correct spelling and grammar is challenging as well. Finally, they manage to build on one another's ideas and improve their skills, but have limited success with writing a short paragraph. This vignette shows the different verbal categories identified in Tables 5.1, 5.2, and 5.3. For instance, in this vignette, the verbal categories that were highlighted are: gives explanation with an example; makes basic statement during discussion; and supports or encourages others.

1. Saleh: Let's write the topic, and then we can *develop the paragraph*. *The topic is the capital city of Saudi Arabia (Riyadh).*

2. Anas: Excuse me. Instead of this, let's write down the ideas and then we can write the topic easily. *Because if we start to write the paragraph directly, we will miss some important ideas.*
3. Abdullah: Our job is to write a short paragraph about the capital city (Riyadh). *I suggest to follow the teacher's instructions to do this task. What do you think*?
4. Naif: I agree with you. *Let's write down the different ideas* and then we can together start to write the paragraph. (**supports others in the group)**
5. Abdullah: *The teacher mentioned last week that we have to write down all the ideas about the topic at the beginning*. For example, to write about the *transportation* in Saudi Arabia, we have to write about trains, highways, cars, and buses. In this case, we want to write about Riyadh city. *Let's start to write some good ideas about this topic*. **(gives explanation with an example)**
6. Saleh: Ok, if the teacher said that, *let's to follow the teacher's instructions*. Also*, we can select from different ideas and let's to choose the best ones?* (**directs actions of the group**)
7. Naif: Please tell me your ideas about Riyadh city and I will write down them in a notebook. *After that, we will choose the best ideas from the list*. (**makes basic statement during discussion)**
8. Anas: Please write, "Riyadh is a big and a beautiful city." (**supports others in the group)**
9. Abdullah: Also, please add, "It the biggest city in Saudi Arabia."
10. Saleh: "It has hot and *dry weather in summer* and very cold *weather in winter.*"
11. Naif: Many thanks. These are good ideas. My idea is, *"It is a very crowded city especially during daytime*". Please tell us more ideas about this topic to finish this paragraph.

It is evident from the above extract that the students participated and there was dynamic interaction between the discussion participants. They assisted each other and their language was rich in providing feedback to the groups; they asked many questions, gave suitable examples, requested clarification, and responded to each other. Moreover, the EFL learners in the above extract followed CL principles, which enabled them to communicate in a suitable CL environment. For example, in turn 1, Saleh suggested that the group write the topic first and then the paragraph; significantly, Saleh used the inclusive phrase "Let's write the topic"

as well as the "collective pronoun "we" rather than the singular "I" in the phrase "…then we can develop the paragraph." In another example, in turns 2, 4, and 5, Anas, Naif, and Abdullah used the phrases "let's write down", "we can write", and "let's start." Anas suggested writing down the entire group's ideas together: "Let's write down the ideas and then we can write the topic easily." Naif voiced his agreement with Anas' suggestion with this statement: "Let's write down the different ideas and then we can together start to write the paragraph." Echoing Naif, Abdullah remarked, "In this case, we want to write about Riyadh city. Let's start to write some good ideas about this topic."

These four examples demonstrate that the students in Vignette 5 follow CL principles. They applied positive interdependence, the first principle of CL; this is seen in the discussion in their use of the collective pronoun "we" instead of the singular "me." Positive interdependence exists when group members are linked together in such a way that one cannot succeed unless others do also (Gillies, 2007). In other words, students assist each other to learn. If the students follow CL principles, they gain academically and are able to complete more tasks (Gillies, 2007).

In this example, the EFL learners applied another principle of CL, which is individual accountability and personal responsibility. For instance, in turn 8, Anas contributes to his group by directing action when he says, "Please write, Riyadh a big and beautiful city." Similarly, in turn 9, Abdullah added another sentence as his contribution to the group paragraph when he stated, "Please add, it the biggest city in Saudi Arabia." Then, in turn 10, Saleh contributes to the group by adding a new sentence to be included in the paragraph: "It has hot and dry weather in summer and very cold weather in winter."

These examples demonstrate that the EFL learners in Vignette 5 above follow CL principles, in particular the second principle of CL, which is the application of individual accountability and personal responsibility. As noted by Gillies (2007), "Individual accountability involves group members accepting personal responsibility for their contributions for attaining the group's goal" (p. 39). Individual accountability exists when each group member understands that they are responsible for completing the assigned tasks and assisting others to complete their assigned tasks as well (Holliday, 2005). Johnson and Johnson (1991) mentioned four important actions to ensure that each one is individually accountable for completing his or her work in the group: to help groups avoid redundant efforts by members; to assess how much

each member is contributing to the group's work; to provide feedback to groups and individual students; and to ensure that every member is responsible for the final outcome. This vignette shows that the EFL learners cooperate with each other ,and they ask different questions, provide suitable examples and provide more clarification.

Vignette 6: Traditional learning small group.

Vignette 6 reveals a few minutes of the students' verbal interactions after they had been working on the task for about 15 minutes in the EFL class. In this vignette, the students' names are Ahmed, Adel, Waleed, and Sultan. They are writing a short paragraph about learning English in a foreign language to practise using the present simple tense via the traditional learning (small groups) method. In the example below the students are engaged in a discussion of how to write sentences correctly in the present simple tense. At the beginning, the students find it challenging to arrange their ideas and to select the best idea from many different viewpoints; this is complicated by difficulties with spelling and grammar. By the end of the discussion, they manage to build on each other's ideas, and their overall levels improve, but little progress is made in writing a short paragraph. This example reveals the different verbal categories that were identified in Tables 5.1, 5.2, and 5.3. For example, in this vignette, the verbal categories that were highlighted are: makes basic statements during discussions; asks questions; seeks clarification; and supports or encourages others in the group.

1. Ahmed: The teacher asked us to write a paragraph about learning English as a foreign language. Can you *clarify* to me, please? (s**eeks clarification)**
2. Adel: Writing a paragraph *is very hard and working together is not useful especially in writing task, I tend to write alone* because working together needs much time. (**makes basic statement during discussion)**
3. Waleed: That is a good idea. *I dislike writing with others*.
4. Sultan: It will be fantastic *if we writing individually* and at the end we will select different ideas.
5. Adel: I do not agree with your *suggestion*. I will *continue writing individually and I will submit the draft to the teacher.*
6. Ahmed: The teacher asked us to work together and writing about learning English.

7. Waleed: Yes, *the teacher asked us to write together but we cannot write together* because everyone has *different style and different ideas.*
8. Sultan: Again, it is a good idea that everyone write alone, but *we have to discuss our samples at the end of the class*, then we can combine different ideas from different sources together.
9. Adel: It is not work because we maybe will select the most ideas from only one student.
10. Waleed: How can we write a good paragraph? (**asks a question)**
11. Ahmed: Please*, remember that the teacher will take only one paragraph as he said at the beginning of the class.*
12. Adel: Wow, that is true, we have to come up with one paragraph only. I think Sultan's suggestion is best solution to us.
13. Sultan: Absolutely, let's everyone write alone but we have to discuss our *samples at the end of the class*, and then *we can combine different ideas from different sources together*. (**supports others in the group)**
14. Ahmed: Ok, let's start writing.

It is evident from the above example that the EFL learners in Vignette 6 preferred to write their paragraphs individually and they faced difficulties writing a paragraph together; they did not trust each other's ideas and there was no dynamic interaction between them. Moreover, The EFL learners in the above extract did not follow the CL principles and, particularly, they did not follow the positive interdependence principle, one of the predominant principles of CL, as seen in their preference for the singular pronoun "I" over the collective pronoun "we" in the examples. For instance, in turn 2, Adel stated that he preferred to write a paragraph individually: "I tend to write alone because working together needs much time." Notably, he uses "I" instead of "we", demonstrating a preference for writing the paragraph individually, rather than working and writing together via traditional small group learning. In another example, Waleed stated in turn 6 that they cannot write together "because everyone has different style and different ideas". Again, in turn 5, Adel stated his preference for working alone: "I will continue writing individually and I will submit the draft to the teacher."

Additionally, the EFL learners in Vignette 6 did not apply another principle of the CL principles, that is, "interpersonal and small group skills". For instance, in turn 5, Adel rejects the group's suggestion when he replies, "I do not agree with your suggestion". By

communicating in this manner, the EFL learners do not engage in dynamic interaction, nor do they assist each other.

It is evident from Vignette 6 above that these EFL students did not accept the idea of writing a short paragraph together; they did not build on the previous speaker's ideas and did not help each other in terms of providing different sentences and ideas to be included in the paragraph. This only changed in turn 10, when Ahmed reminded them that the teacher intended the task to be a collective rather than an individual task: "Please, remember that the teacher will take only one paragraph as he said at the beginning of the class." At this point, the students changed their minds from writing individually and each submitting a separate paragraph to the teacher to writing individually, then collating their ideas to write and submit a single paragraph to the teacher.

Vignette 7: Writing task during cooperative learning group.

Vignette 7 provides a few minutes of the EFL learners' verbal interactions after they had been working on the writing task for about 15 minutes in the EFL classroom. The students' names in Vignette 7 are Falah, Wael, Ibraheem, and Rasheed. They were writing a small paragraph about the weather in Saudi Arabia last month to practise writing short paragraphs using the past simple tense in a cooperative learning group. In the example, it is clear that the students are engaged in discussing how to write some correct sentences in the past simple tense. They experience some difficulty arranging their ideas and selecting the best ideas from the many different viewpoints. Additionally, they are confronted with difficulties with spelling and grammar as they learn English as a foreign language. It is important to note that they made a concerted effort to assist each other and depend on each other; they were able to verbally convey the messages and communicate with each other, but they were not good at writing their ideas down. In general, improvements were seen with their achievements and performances, but they were less successful with the paragraph writing task. Vignette 7 displays different verbal categories discussed in Tables 5.1, 5.2, and 5.3. For instance, the verbal categories that were shown are: explanation given with an example; makes basic statements during discussions; asks questions; and supports or encourages others.

1. Faleh: The topic is the weather in Saudi Arabia last month. It is very *important* that we *should talk about all parts of* Saudi Arabia.

2. Wael: Absolutely, we are going to talk about all cities in Saudi Arabia. For example, the weather in Riyadh, Jeddah, Abha, and Dammam. These cities are *from different directions, from north, south, west and east*. (**explains with example**)
3. Ibraheem: It is good idea *to write down* the ideas and then we have to discuss them.
4. Rasheed: OK, let's start.
5. Faleh: *We need someone to write down the ideas* then we will *discuss them and link them in proper way.* **(makes basic statement during discussion)**
6. Rasheed: Ok, that is great. I will do it. Could you please state the ideas that I have to write down? **(asks questions)**
7. Wael: Let's start with this small sentence, "Weather last month in Saudi Arabia was different from city to another one." **(supports others in the group)**
8. Ibraheem: *Would you please add this sentence*, "In Jeddah, the weather was very hot; it reached 44 degrees."
9. Faleh: Abha was cold and *windy*. This *city located in* the south of Saudi Arabia.
10. Rasheed: Please let me to talk about Dammam *which located in the east* of Saudi Arabia. "Dammam was a very hot city last month."

It is clear from Vignette 7 above that the EFL learners participating in this discussion assisted each other. There was dynamic interaction between them and their language was very rich in these verbal actions categories: explains with examples; supports others in the groups; asks questions; gives suitable examples; and makes basic statements during discussion.

It is also clear that the EFL learners in Vignette 7 above practice CL principles, which enabled them to communicate with each other in a suitable CL environment. For example, in turn 1, Faleh uses the inclusive pronoun "we" instead of the singular "I" when he asks his classmates for assistance with writing about different parts of Saudi Arabia: "The topic is the weather in Saudi Arabia last month. It is very important that we should talk about all parts in Saudi Arabia." His use of the phrase "we should" indicates he is seeking help from his colleagues and that he thinks they should work cooperatively.

A second example occurs in turns 3, 4, and 5. Ibraheem, Rasheed, and Faleh all make statements indicating a willingness to work together. For example, Ibraheem suggests he and his classmates should work together, stating: "It is good idea to write down the ideas and then we have to discuss them." Rasheed confirms he is willing to work cooperatively when he

encourages the group to start writing the paragraph. He uses the collective imperative verb phrase “Let’s start”, which signals he wants to begin working together to write the paragraph. Then, in turn 5, Faleh uses the collective pronoun “we” to emphasise that they are going to discuss the different ideas together; he says, “We need someone to write down the ideas then we will discuss them and link them.”

These examples demonstrate that the EFL learners in Vignette 7 practice the CL principles; they applied ‘positive interdependence’ the first principle of CL (using “we” instead of “me”). Gillies (2007) noted that positive interdependence exists when group members are linked together in such a way that one cannot succeed without the participation of the others in the group. In other words, the students assist each other to learn. If the students follow CL principles, they gain academically in terms of overall grades and complete more tasks.

Furthermore, the EFL learners in Vignette 7 follow the second CL principle as they applied “individual accountability and personal responsibility” to their discussion. Johnson and Johnson (1991) mentioned four important actions to ensure that each one is individually accountable for completing his or her work in the group: helps the group avoid redundant efforts by members; assesses how much each member is contributing to the group’s work; provides feedback to groups and individual students; and ensures that every member is responsible for the final outcome.

Personal responsibility is present when each group member understands that they are responsible to complete the assigned tasks and to assist others to complete their assigned tasks as well (Holliday, 2005). As noted by Gillies (2007), “Individual accountability involves group members accepting personal responsibility for their contributions for attaining the group’s goal” (p. 39).

EFL learners depend on each other to achieve their goals as seen in Vignette 7 where it is clear that the students are learning from each other, and contributing different ideas to a group effort to write a paragraph. In writing tasks, these EFL learners communicate with each other well, but have difficulty translating their verbal success into the finished written product; there are numerous spelling and grammar mistakes in the excerpt from the final paragraph: “wather last month in saudi arabia differnt from citi to another one, in jeddah the

wather was very hot it reachd 44 degrees. abha was cold and windy. dammam is very hot citi last month."

The students suggested different ideas, discussed them, and finally wrote them down them in a notebook, but the final paragraph has numerous mistakes which results in lower marks for the group task. These errors include mistakes such as repeated incorrect capitalisation of words like Saudi Arabia and Dammam, and misspelling of words such as weather, different, and city. Clearly, CL enabled them to interact and exchange ideas, but they faced difficulties in writing their ideas down. In general, EFL learners are able to learn and make progress via CL even though they have made errors with grammar and spelling.

Vignette 8: Writing task during traditional learning small group.

Vignette 8 reveals a few minutes of the EFL learners' verbal interactions after they had been working on the writing task for about 15 minutes in the EFL traditional classroom. In this vignette, the students' names are Mohammed, Talal, Yousif, and Anas. They are writing a short paragraph about their last summer holiday in order to practice writing short paragraphs using the past simple tense through the traditional learning environment (small groups). In the vignette below, the EFL learners are communicating about how to write some ideas in the past simple tense. To begin with, the EFL learners encountered difficulties in coming up with ideas and writing them down. A significant problem is that they cannot coordinate their turns and had difficulty interacting with each other because they did not receive any training in how to implement CL. Eventually, they managed to assist each other in an unstructured way; they just offered different ideas without any structure to the discussion between group members. This extract revealed three of the verbal interaction categories presented in Tables 5.1, 5.2, and 5.3; these were: makes basic statements during discussions; asks questions; seeks clarification; and gives examples.

1. Mohammed: Good morning. Where did you go last summer? (**asks a question)** The teacher asked us to write about this topic. *In fact, I went to capital city of* Saudi Arabia because I visited *my relatives* there.
2. Talal: Wow, *that is interesting*, I went to Jeddah but it was very hot. (**makes basic statement during discussion)**
3. Mohammed: Could we *start discussing* the ideas and writing the paragraph?

4. Yousif: Ok, but everyone has *his style in writing*. *Why do not we write individually rather than together?*
5. Anas: I am totally agree with you, Yousif. It's time consuming and I have different stories and events that I am willing to write them down.
6. Talal: *We can share different stories and then we can write them in few sentences*. I think this will be fine for all members.
7. Mohammed: That is fine, let's working. For example, *I visited my grandparents last holiday*. **(gives example)**
8. Yousif: I am going to write my work alone. *I do not like to work with others particularly in writing.*
9. Anas: I cannot write with anyone, too.
10. Talal: It is up to you .I just *want to clarify that we can discuss the ideas to together and then someone will write the ideas to come up* with a share paragraph**. (seeks clarification)**

Vignette 8 reveals that the EFL learners in the control groups did not tend to write cooperatively. Also, they did not exchange ideas and more than one student stated they preferred to work separately. Moreover, there was no dynamic interaction between them and they avoided working together, particularly in writing task. For example, in turn 3, Yousif indicates his belief that everyone has his own writing style, and says he prefers to write alone: "Ok, but everyone has his style in writing, why do not we write individually rather than together?" In turn 4, Anas agrees with Yousif's remarks: "I am totally agreed with you, Yousif. It's time consuming and I have different stories and events that I am willing to write them down."

The EFL learners in the above vignette do not practice CL principles; in particular, they did not apply the most important principle of CL, the positive interdependence principle ("we" instead of "me"). This can be seen in turn 7, where Yousif uses the singular pronoun "I" and indicates his preference for working on his own, rather than with the group. He states: "I am going to write my work alone. I do not like to work with others particularly in writing."

It is evident that the EFL learners' in the control conditions provide some examples and make some clarification, but this occurs to a lesser degree than their colleagues in the experimental condition. For instance, in turn 6, Mohammed explains an idea to his classmates and provides

an example when he comments: “That is fine. Let’s working .For example, I visited my grandparents last holiday.” Then, in turn 9, Talal provides clarification to his classmates when he states his belief that they could interact and communicate together to write one shared paragraph. Talal remarks: “It is up to you. I just want to clarify that we can discuss the ideas to together and then someone will write the ideas to come up with a share paragraph.”

Chapter Summary

This chapter has presented and discussed the verbal interactions data both quantitatively and qualitatively. First, the quantitative data illustrated that there was a difference between the experimental and control conditions in the verbal interaction categories. Unlike their peers in the control conditions, the EFL learners in the experimental condition provided more help in the form of making basic statements during discussions; they also responded to others’ requests for basic information with brief statements; gave explanations with an example; and used positive interruption.

Furthermore, the findings revealed that the EFL learners in the experimental groups communicated and interacted more with each other than did their peers in the control groups. To sum up, students in the experimental conditions developed their CL skills through the time. Their cooperation and interaction were clear from the assistance that they provided to each other and their use of explanations and other types of helping behaviours, such as giving directions or passing materials that were needed for a particular task. However, in contrast with those in the experimental condition, the EFL learners in the control condition made more negative interruptions, directed the actions of the group (gives directions, organizes responsibility), and used non-specific verbal interaction.

Secondly, the qualitative data showed that the EFL learners in the experimental groups built on each other’s ideas. The dynamic interaction between them and their language was very rich as they asked questions, made statements, gave explanations with examples, provided clarification, and responded to each other more than their peers in the control conditions. They assisted each other and their language was rich; they provided feedback to the groups, asked many important questions, gave suitable examples, requested clarification, and responded to each other.

Furthermore, the EFL learners in the experimental conditions followed the CL principles that enabled them to interact and communicate in a proper CL environment. The qualitative data showed that the EFL learners' discussions in the control groups did not build on each other's ideas; there was no dynamic interaction between them and their language was less than their peers in the experimental conditions with regard to asking questions, making basic statements during discussions, providing explanations with examples, or responding to each other. Furthermore, they did not correct each other's mistakes in practicing as they did not have a sense of group identity and preferred to work individually rather than working in groups.

In this chapter, EFL learners' verbal interactions were discussed in order to identify how they cooperate and communicate with each other. The next chapter will discuss the EFL learners' perceptions and feelings about learning English in the EFL context in the new learning environment provided by CL.

Chapter 6: Qualitative Interview Data and Analysis

Introduction

In the previous two chapters, the findings that were presented were based on three different types of data. Firstly, it was based on the students' English Grammar Achievement Test (EGAT), which assisted the researcher to identify students' achievements in learning English as a foreign language. Secondly, it was based on the students' behaviour states in order to explain how the students behave with each other during CL and traditional small group learning. Thirdly, it was based on students' verbal interactions to explain how the students interact with each other during CL and traditional (small group) learning.

This current chapter presents and analyses the findings based on the interview data. The purpose of this chapter is to identify how EFL learners in the EFL context respond to their new experiences in learning English lessons in a CL environment. Moreover, this chapter will examine their opinions and perceptions about using CL to learn different lessons in English. In the past, students were not given the opportunity to talk about their experiences and feelings about learning English through the CL method. Thus, the aim of the interview questions of this research was to seek information on students' perceptions of learning English in a CL environment (see Appendix,2). The student interviews were conducted individually and audio-recorded by the researcher. The interviews were conducted in the Arabic language, transcribed by a research assistant, and then translated into English by the researcher.

In this study, triangulation took place by collecting both quantitative and qualitative data from three sources: the EGAT, classroom observations for both behaviour states and verbal interactions, as well as from the students' interviews. The observation findings enabled the researcher to explain the students' achievements, their behaviour states, their verbal interactions, and to determine the extent to which the students' behaviour and verbal interactions had an effect on their achievements. Finally, the student interviews investigated students' perceptions about learning English through CL. The findings from the interviews reported on students' feelings about their interactions and discussions with their colleagues in the same groups.

Findings from the Post-task Semi-structured Interviews

Ten students were interviewed individually by the researcher at the end of the study to identify their thoughts and experiences in learning the English language in a CL environment (see Appendix 2.3 for a list of interview questions). The interview gathered data about the EFL learners' experiences and their perceptions about CL's efficacy as a method of learning in their classroom, and the extent to which they believed they benefited from learning English in a CL environment. Moreover, the interview investigated students' perceptions of the difficulties and barriers they experienced learning English in a CL environment. The researcher grouped the different themes that emerged from the interview data into seven main themes: academic achievements; social skills and self-confidence; performing different roles; CL and individual learning; CL as a method that does not work for all students; and lastly, barriers of CL (see chapter 3).

Academic achievements.

The first of the seven themes that emerged from the data was that of increased academic achievement in the CL environment. Some students indicated that they learned more through CL and they were satisfied with their achievements. After CL was implemented in the English classroom, the students worked in groups and expressed satisfaction that CL increased their English outcomes. One student commented, "It [cooperative learning] increases my understanding of English lessons and I noticed that my English is getting better" (Student 3). Another student added, "Absolutely. I can speak English well and I can communicate with my English teacher in English" (Student 8). A third student indicated, "My English grammar is improving and I can write some sentences without grammar mistakes (Student 10). Similarly, Lord (2001) found that the students who participate in CL obtain higher grades and are more likely to achieve their goals than their peers who learn using the traditional learning method.

Furthermore, some students expressed the belief that working in groups increased their motivation to learn, as well as their tendency to study English skills. Student 6 commented, "Learning English in a cooperative learning environment motivated me to understand the different tasks of English. It is very difficult to learn these skills." Another student remarked, "In fact, I hate to learn English because it is not my native language, but now, I start to like it

because my classmates encourage me to speak English during the cooperative learning method" (Student 8). This is in line with Shaaban (2006), who stated that CL offers students a chance to identify the value of the content of their studies, and perceive themselves as competent contributors to their purposes; as a result, their motivation is enhanced and promoted.

In general, students declared that using CL changed their routines inside the classroom and it facilitated the development of a good environment in which to improve one's English skills. One student pointed out "The teacher explains and we just listen; this is our daily routine. But the cooperative learning method gives us a chance to see different learning styles and methods. Working in groups is a good solution to avoid boredom in the classroom" (Student 1). Another student revealed, "I am happy working in groups because it definitely pushes us to read and learn. In contrast, I dislike the teachers who use one teaching method all the time because it is monotonous" (Student 6).

Overall, the students highlighted many academic skills that they developed while learning English using the CL method. One student remarked, "I noticed that our English speaking skills are getting better and we can communicate with each other in English but before we started using cooperative learning it was very difficult to talk in English" (Student 10). Another student said, "Listening to each other is an important skill that we learned using the cooperative learning method" (Student 3). Johnson and Johnson (2004) pointed out that the students who study according to the cooperative teaching approach have high grades compared to students who were taught using traditional teaching methods. Tuan (2010) showed that language skills were improved; previously undeveloped interpersonal skills emerged as a result of the introduction of the CL method.

Moreover, it is apparent that most students have a strong tendency to continue to learn English skills when they are working in groups and would prefer their teacher not return to using the individual learning method. One student stated, "This is a good idea of the English teacher to use cooperative learning method in all classes and in the future" (Student 2). Another student commented, "I hope that my teacher keeps on using the cooperative learning method" (Student 8). This is in line with the work of Muhammad (2010), who found that students' achievements and attitudes toward mathematics improved as a result of the cooperative grouping method.

Social skills and self-confidence.

The second theme to emerge from the data was that of increased social skills and self-confidence in the CL environment. Some students revealed that using the CL method enabled them to improve their social skills, such as talking in front of their teachers, classmates, and the general public. Student 8 stated, "I can talk in front of my classmates normally. I used to encounter problems presenting a topic to others." Another student commented, "Presenting a topic in front of people was very difficult to me, but I have trained to talk and present a topic through a comfortable learning method, that is, cooperative learning" (Student 3).

Students claimed that having a chance to present different topics in front of other classmates was exciting. One student remarked, "I am very happy with cooperative learning method because I had a chance to present topics and this experience is not a forgettable event for me" (Student 1). Another student said, "It was very wonderful. Now, I have ability to present any topic, either in the school assembly or in the general public… It is an incredible experience" (Student 10). Similarly, Kao (2003) indicated, in his study, that the students' speaking skills, such as presenting in front of other students, increased as a result of students' use of the CL method.

When asked if the CL method has improved their social skills and self-confidence, a few students declared they have obtained the ability to manage different tasks and they feel more confident when discussing topics with others. One student commented, "Absolutely. I can manage different jobs and I have sufficient ability to lead any task. Leading was difficult for me but now I feel more comfortable" (Student 1). Another student stated, "Definitely. One of CL benefits is that I feel more confident to state my opinions with others" (Student 3).

Students declared that they achieved and learned many new skills in the CL environment, such as oral presentation skills, self-confidence, responsibility, to respect different opinions, and to offer different viewpoints. Student 10 said, "I learned many new skills such as presenting in front of my classmates and respect their opinions." Another student mentioned, "Offering my ideas and views to my friends was too difficult for me. At this time, I can state my opinions frankly and normally" (Student 2). Gillies (2004) highlighted that the students

who learn during the CL method were more cooperative when they had been trained in the social skills that increase effective cooperation between students.

Performing different roles.

The third of the seven themes to emerge from the data relates to the students' increased ability to perform different roles in the CL environment. Students indicated that CL enabled them to perform different roles in the classroom, such as a leader, presenter, writer, and time controller. Student 2 stated, "I [would] like to be a leader of my group all the time", while Student 6 remarked: "My friend encountered troubles with presenting at the beginning of using the cooperative learning method because he is a shy person. During the time, he gets along with it and he can present without any fear or shyness."

Some students delegate different roles to each other. For example, sometimes a student might be a presenter, while another time he may take on the role of a leader. As Student 8 explained, "We are four students; each one is responsible for a different role." Another student commented, "It is wonderful to play many roles, such as a leader, presenter, time controller, and writer" (Student 3).

Many students understood and were able to explain their different roles and the expectations placed on them as individuals with regard to these roles. For instance, one student stated, "My responsibility in this group is to write down information" (Student 10). Another student declared, "Leading the group is not an easy task because I have to listen to each one in the group" (Student 1). The challenge of group members playing different roles in a collaborative learning environment is supported by the work of Gillies (2011), who argued that the adoption of different roles by group members was important to ensure that the members cooperated, contributed, and were accountable for their contributions to the group.

Increased students' relationships.

The fourth theme to emerge from the data was an increase in students' relationships with their peers in the CL environment. In general, students indicated that a CL environment enables them to forge new relationships with other classmates in the classroom. For instance, Student 3 admitted, "My relationship with my classmates was not good. Now, I have dealt with many students in the class and I like them. They are helpful and friendly." Another

student said, “Through the cooperative learning discussions, we know each other better and we improve our relationships with each other” (Student 1). A third student commented, “At the beginning of using cooperative learning in the classroom, I had only one friend. At this time, most of the students in the class are my friends” (Student 10). The experiences of these students is similar to the findings of Johnson and Johnson (2004), who revealed that learning in a CL environment, as compared with more competitive and traditional learning methods, results in more positive and supportive relationships, more friendships, and fewer pupils remaining isolated.

Some students revealed that they like to spend more time at school as well as more time doing group work with their colleagues after the CL method was implemented in their class. Student 8 declared, “In fact, I dislike the school because it is boring. But now I want to spend more time at school because I have the chance to talk and discuss some issues with my classmates. Also, I get along with all my classmates.” Another student added, “I want to stay more time with my classmates. I enjoy learning English with them. We enjoy our time and make some jokes” (Student 6).

CL assisted some students to build new skills that enabled them to develop their friendships with their classmates. One student stated, “At the beginning of implementing cooperative learning in our class, I could not talk in front of my friends, but at this time I communicate with them very well. Working in groups assists me to build my skills in presenting some topics to audiences” (Student 2). Another student remarked, “Now, I respect my classmates’ opinions. In the past, I did not accept different ideas and I thought that my point of view was correct and the others were wrong” (Student 10). Yet another student declared, “At this time, the majority of my classmates are my close friends, but before using cooperative learning in our class, I had only two friends” (Student 2). This positive feedback is supported by the work of Gillies (2004), who found that the CL environment enables students to work with each other, assist each other, discuss, explain, and share information.

Cooperative learning and individual learning.

The fifth of the seven themes to emerge from the data was the positive impact CL had on students’ ability to learn as individuals. Some students pointed out that they could learn easier and faster from their classmates than their teacher. Also, they indicated that there is a

difference between CL and individual learning in terms of mental ability. In a CL environment, the students work together to learn on a level playing field, whereas in individual learning, the teacher is positioned as the 'keeper of knowledge' and has the difficult task of conveying complex concepts to students who lack a similar understanding of the material. Student 6 commented, "The teacher explains the lessons and answers the questions in the individual learning, but the teacher could not deliver information to students because of the mental level. But in cooperative learning, student's mental levels are close and they can discuss different lessons." Another student stated, "I prefer to learn English through cooperative learning because it assists the students to learn from each other in a comfortable environment. But learning English through individual learning is not well suited for shy students, as they cannot ask the teachers for more clarifications" (Student 1). Similarly, Vo (2010) highlighted the positive correlation between the introduction of CL and improvements in interpersonal skills and the promotion of creative thinking.

Some students indicated that CL increases their motivation to work as a team, unlike individual learning. As noted by Deutsch (1949), team members need to synchronize their actions to achieve a goal if they want to have successful teamwork; this creates a state of positive interdependence where, in order for the members of group to succeed, all group members must also succeed. One student stated, "Collaborative learning depends on teamwork and it increases the students' love of teamwork. It is a very interesting education environment in which to learn English. In individual learning, the student depends on himself alone and it is a traditional, boring education environment" (Student 10). Another student remarked, "To me, I dislike individual learning because it is very tedious" (Student 8). These sorts of comments are supported by Liao (2005), who showed that motivation could be enhanced via CL. Terwel, Gillies, van den Eeden, and Hoek (2001) pointed out that teamwork and accurate information provided by the group members are interrelated and improve learning skills, whereas inaccurate information shared in a student group results in low achievements.

In general, it is essential to train group members in the skills needed to achieve successful teamwork. Gillies (2003) pointed out that when different groups had been trained so that learners worked cooperatively together, they give more verbal help and assistance to each other than learners who did not work in cooperative groups.

Some students prefer to discuss lessons in a CL environment, which enables them to learn from their classmates' experiences, which is not possible in the individual learning method. One student stated, "Students can discuss different lessons and identify the experiences of their colleagues through the cooperative learning method. However, students in individual learning could not discuss some lessons and cannot identify the experiences of their colleagues in the class" (Student 3). Another student commented, "Definitely, the cooperative learning method enabled me to learn from my classmates' experiences" (Student 6).

Some students declared that there is a better chance of learning tasks faster with the CL method than with the individual learning method. In addition, they stated that they could understand different lessons well in CL, but not in individual learning. Student 1 commented, "From my point of view, collaborative learning is an excellent way to get the information well through consultation and discussion with colleagues." Another student stated, "I can understand the lesson well and quickly through the cooperative learning method because my colleagues assist me to learn. But in individual learning, it takes much time to understand the lesson" (Student 2). Further, another student remarked, "In fact, I identify and understand different themes in the English subject when I learn them via the cooperative learning environment" (Student 6).

However, it is worth noting that a few students felt there was little difference between the CL method and the individual learning method. Moreover, they declared that they could achieve and learn through both learning methods. One student stated, "There is no difference between language learning through the cooperative learning or the individual learning method" (Student 9). A second student remarked, "My progress was the same either when learning English through cooperative learning or through individual learning" (Student 2). Yet, in contrast to these students' comments, Slavin (1995) reviewed 99 studies and showed that only 5% of these studies support learning via traditional learning gains, while 63% of these studies showed significant gains for learning via the CL method.

Cooperative learning method does not work for all students.

The sixth theme evident in the data was the fact that, although CL is beneficial for most students, the method does not work for all students. For instance, some students revealed that they did not like to work in groups with their colleagues. One student mentioned, "I have

troubles with one of my group members. We compete with each other so that we miss the agreement between each other. Consequently, we cannot reach a good decision" (Student 7). Another student stated, "One of my friends in the group is very weak in the English subject and he does not participate with us all the time. I think cooperative learning is not useful for him" (Student 9).A third student remarked, "To be frank with you, I do not like to work in groups because weak students waste my time; I spend much time teaching them" (Student 4).

Moreover, some participants stated that they felt the teacher is responsible to clarify and explain the lessons. Also, some students declared that they did not have a natural tendency to share and participate in the classroom. One student commented, "I think English teachers should explain and clarify different tasks to the students inside the classroom. Low achievement students need much work from the teacher to assist them. Learning English in a cooperative learning environment is not good for good students because they have to teach low achievement students in the different groups; for me, I am against it" (Student 5). Another student indicated, "One of my classmates refused to discuss and share his ideas with us; he just sits down and listens to us. For example, he sometimes plays during group discussions and draws pictures in his notebook" (Student 7). This non-participatory behaviour by some students is confirmed by Bock (2000) whose research on CL pedagogy in Vietnamese EFL classrooms found that some students were unwilling to cooperate with the teachers.

Additionally, some students revealed that they prefer to work individually rather than sharing tasks with their classmates, especially learning English in a CL environment. One student commented, "In fact, I am not in favour of learning English in a cooperative learning environment for two main reasons. Firstly, I can manage my time when I learn English through traditional learning, whereas I cannot manage my time if I learn English through cooperative learning. There are other three students with me in the group; I have to share my ideas with them and this requires a lot of time to solve different exercises. Secondly, some students do not cooperate with us and they constantly make noise in the group" (Student 5). Similarly, another student declared, "I am totally against the cooperative learning method, whereas I prefer learning English in the traditional method because I and my classmates used to learn English through this method. Also, we need much time get along with cooperative

learning and I feel there is no difference between either the traditional method or the cooperative learning method" (Student 4).

Gillies (2003) indicated that when group members in science class were structured so that learners worked cooperatively together, they provided more verbal assistance to each other than learners who did not work in cooperative groups. Similarly, EFL learners needed training in cooperative learning to gain different language skills.

Another issue raised by some students was that the teacher did not properly distribute the students into groups. As a result of what appeared to be random groupings, some groups were excellent, while others were bad and consequently did not work well with each other. One student stated, "Our teacher did not divide us [into groups] well; he just put students who were sitting close to each other in a group. Consequently, some groups consist of excellent students while other groups have all weak students. In this way, CL is not helpful and useful" (Student 9). Another student said, "My teacher usually put me in a very bad group. I have asked him to change me to another group but he rejected [my request] without any reason. I am not happy with my group and that means I do not like cooperative learning" (Student 3). Therefore the teachers need more training in how to implement the cooperative learning method properly.

Barriers to cooperative learning.

The seventh and final theme to emerge from the data has to do with the barriers to CL. Simply put, some students did not have the basic skills of CL that would enable them to work in groups properly. Moreover, some students pointed out that low achieving students depend on high achieving students to carry out different tasks and produce the bulk of the work. One student commented, "I think the most important barrier [to CL] is that students are not familiar with basic skills of cooperative learning; they need more training to perform it well" (Student 1). A second one stated, "Weak students do not work hard; they depend on good ones to do the job" (Student 8). Johnson and Johnson (1999) revealed the drawbacks that learners may encounter while learning via the CL method including the fact that some students putting in less effort, while others are left to do a greater share of the work. Furthermore, low ability students participate less in the learning process and leave the work to the high ability students.

A few students revealed that some teachers were not good facilitators of the CL process within the classroom. For instance, some teachers simply split the class into groups and sat down without providing any guidance or supervision. One student indicated, “Some teachers are not qualified to manage cooperative learning in the class, so that it is difficult to implement cooperative learning” (Student 6). Another student commented, “The role of our teacher is to put us in groups and then he did not assist us or explain difficult tasks” (Student 10).

Students highlighted that their classmates did not give them enough chances to state their opinions. In addition, they declared that a few students did not participate with them, but worked alone instead. One student said, “I do not like to work in groups because my classmates do not give me a chance to participate” (Student 1). Moreover, another student complained, “One of my classmates does not work with us. He just plays, laughs, and wastes our time” (Student 8). It is apparent from comments like these that while CL works well and is beneficial for many EFL learners, it does not suit some for a variety of reasons. It might be that some students do not get enough chance to participate with their classmates.

Chapter Summary

This chapter has described and identified the opinions and experiences of the EFL learners who participated in CL English lessons. In general, most students found that CL enabled them to improve their English skills, make new relationships with others classmates, perform different roles, improve their oral presentation skills, build their self-confidence, take on responsibility, respect different opinions and offer their different views, increase their motivation, and develop their friendships with their classmates.

However, there were few drawbacks and obstacles to using the CL method. These included: low achiever EFL learners depending on high achiever learners, classmates not giving group members a chance to state their opinions, and poor group member distribution and supervision by the teacher. In the following chapter, the researcher presents a general discussion of the results in this study.

Chapter 7: General Discussion

Chapter Overview

This chapter discusses the findings from both the quantitative (Chapter 4) and the qualitative (Chapters 5 and 6) strands of the mixed method research. The purpose of this mixed method design was to corroborate the findings using evidence from different perspectives and sources. Accordingly, evidence from different sources is compared and viewed from both the objective and subjective perspectives. In this chapter, the findings presented in Chapters 4, 5 and 6 are discussed in relation to the literature reviewed in Chapter 2.

The discussion in this chapter is divided into five sections. Discussed first are EFL learner performance and achievements in the pre-test and post-test and the impact of CL on their achievements as presented in Chapter 4. Next, there is an examination of how the EFL learners behaved when they participated in English lessons in either cooperative groups or traditional small groups. This section also discusses whether the EFL learners behaved cooperatively or individually and the section highlights any statistically significant differences between EFL learners who learn English in either cooperative groups or in traditional small groups as discussed in Chapter 4.

The subsequent section presents the main focus for the discussion in this chapter; it highlights the EFL learners' verbal interactions when they learn English in either cooperative or traditional small groups. This section also discusses how the EFL learners interact and communicate with each other in these two conditions. Based on the EFL learners' verbal interactions, this section also examines the differences between the EFL learners in the experimental condition and their peers in the control condition as shown in Chapter 5.

The next section discusses the EFL learners' perceptions and experiences when learning English in a CL environment. This section also discusses both the advantages and the drawbacks of implementing CL in the EFL classroom as presented in Chapter 6.

The final section of this Chapter 7 synthesises and gathers the findings from different sources and links the quantitative and the qualitative results.

Research Question 1

Research question 1 is: *What is the effect of CL in comparison to traditional small groups on the achievement of grammatical knowledge of EFL learners?* The data analysis in Chapter 4 revealed that the students who learn English lessons through CL gained higher scores than their peers who learned the same lessons through traditional small groups in the post-test. Particularly, the data showed that there are statistically significant differences, $p = .009$ ($p < .05$) between the mean scores of the students who were taught English lessons in the cooperative groups and those who were taught the same English lessons in the traditional small groups. The EGAT was used as both a pre-test and a post-test to identify the effect of the CL method on EFL learners English language achievements.

The literature review highlighted that the use of CL in the EFL classroom assists students to improve language skills and enhance their academic learning. Gillies (2011) reported that the CL not only assists learners to achieve higher academic outcomes, but students they are more motivated to achieve academically than they would be if they worked alone. Kao (2003) and Liao (2005) concluded that students' learned more when they worked cooperatively together.

From a Vygotskian perspective, students' learning is enhanced when they have opportunities to work with more capable peers who often scaffold each other's learning in their zone of proximal development. Furthermore, learning is facilitated when the learner socializes with those in the external environment (Vygotsky, 1980). Sfard (1998) declared that socio-cultural forces such as social contribution, the setting of activities, relationships, and historical change help a child to learn and develop. As the literature review in Chapter 2 identified, most Saudi EFL classrooms can be called traditional learning settings in that the teachers direct the learning process and give direct lectures to students. Al-Hazmi (2008) revealed that EFL learners in traditional (non-CL) language learning contexts are assumed to be passive receptors of knowledge which means students do not have sufficient chance to practice their language skills. There are many traditional methods in learning English as a Foreign Language (EFL); for instance, audiolingual method, and the grammar translation method, which can be used in an EFL context (Freeman & Freeman, 1994). Kannan (2009) stated, "Students learn basic grammar at school level for the purpose of passing in the tests and in the examinations and not to face any real life situations" (p. 2). Liu (1998) pointed out that the traditional method does not provide opportunities for EFL learners to interact and

communicate with other classmates.

However, the analysis of achievement data showed that there are no statistically significant differences, $p = .332$ ($p > .05$) between the mean scores of the students who were taught English via CL and those who were taught the same English lessons through traditional small groups in the pre-test. Moreover, data analysis of the achievement test revealed that there were no significant differences in scores with the writing task, $p = .104$ ($p > .05$) between the experimental and control conditions.

Many EFL contexts involve traditional learning where the teacher gives the lesson and the EFL learners' voices are mostly neglected. Consequently, it was essential to find a new, more student-centred environment, moving away from traditional learning practices and shifting toward a context that enables the EFL learners to interact and communicate with the teacher and each other, and enables them to reflect on their own language learning experience.

The relationship between the students and the teachers in Saudi Arabia remains quite formal; as noted by Al-Shehri (2012), students are not allowed to discuss personal matters with their teachers. Accordingly, students sometimes struggle to attract the teacher's attention due to the restrictive nature of this formal relationship.

Similarly, EFL learners in this study found that CL created a new socio-cultural environment that facilitated more effective, friendlier, and strong relationships between students and teachers. In this study, CL helped to break down these traditional teacher-student barriers, which resulted in increased learning. The findings from analysis of vedio clips showed that the EFL learners who trained in CL could build on each other's ideas. Also, there was dynamic interaction between them and they asked various questions and provided and requested different clarification. Whereas, their peers, who did not train in CL skills, had less interaction and did not work as much as their peers in the cooperative learning did.

Nah (2008) pointed out the strong correlation between motivation and learning outcomes in language learning. One of the aims of this study to measure the academic achievement of the EFL learners. The EFL learners declared that the implementation of CL helped them to learn different English skills and develop their abilities to speak and write English clearly. These results mirror the findings of Adeyemi, (2008) who concluded that learners have higher levels of achievement during CL as compared to their peers who are taught by traditional methods.

In their study, Iqbal, Saeed, and Syed (2011) found that the cooperative groups outperformed traditional learning groups on post-test.

The data showed that the EFL learners benefited from the implementation of CL to improve their language learning experiences and skills. For instance, some EFL learners' achievements in the pre-test were not satisfactory, but they improved their levels and gained higher scores in the post-test. They adopted a self-regulated learning skill that enabled them to observe and evaluate their learning outcomes. Chang (2005) revealed that applying some learning strategies could enable the learners to depend on themselves and become more responsible for their learning.

Research Question 2

The second research question is: *What is the effect of cooperative learning in comparison to traditional small groups on the behaviour states of EFL learners?* The analysis of the behaviour state data revealed that that the EFL learners in the experimental condition were more cooperative than their peers in the control condition who learned English lessons via traditional small groups at Times 1, 2, and 3. The results indicated that there was a significant difference between the two conditions in cooperation behaviour, X^2 (1, N = 32) =29.893, p =000; noncooperation behaviour, *X2* (1, N = 32) =10.454, p = .001; and individual task oriented behaviour, X^2 (1, N = 32) = 17.093, p = .000; but not in individual non-task oriented behaviour, X^2 (1, N = 32) = 1.442, p = .230.

Further, the data analyses highlighted that the EFL learners who learned English lessons through traditional small groups worked individually more than their peers in the experimental condition who learned the same lessons via CL at Times 1, 2, and 3.

The data analysis showed that the EFL learners in the experimental conditions displayed more cooperative and less non-cooperative behavioural states, as well as individual task-oriented and individual non-task-oriented behaviours than their classmates in the control condition. In addition, the mean scores were, on average, higher in the experimental condition for co-operation behavioural outcomes. They were lower in the experimental condition for non-cooperation behaviour, individual task oriented and non-task oriented behaviour.

The analysis of behaviour state data revealed that the EFL learners in the experimental condition became more cooperative over time (see Chapter 4), especially EFL learners in the experimental condition who were more responsive to each other than their peers in the control condition. The EFL learners in the experimental condition were trained in how to assist and behave cooperatively with each other, whereas EFL learners in the control condition did not learn these skills. Gillies (2004) found that learners in the experimental groups exhibited more cooperative behaviours and less non-cooperative behaviours than their classmates in the control groups. Furthermore, they synchronized their activities with each other so they were able to assist each other's learning as they worked on the same topic during the group task.

To sum up, EFL learners in the experimental condition behaved more cooperatively than their peers in the control condition as they worked together to achieve different tasks. Furthermore, they gradually developed their decisions depending on reliable knowledge that related to their language learning experience. This study indicated that the CL method successfully provided more EFL language learning and collaborative opportunities for the EFL learners, and effectively enhanced their learning. Moreover, the study showed that the CL created more opportunities for student interaction, and a suitable context for EFL learning. These improvements in the interaction among EFL learners were due to the training that they had in using cooperative learning in their EFL classroom. However, their peers in the small traditional groups had less interaction due to lack of training in the cooperative learning method.

The present study was an investigation of the impact of CL on EFL learners' behaviours, verbal interactions and learning outcomes as they worked in EFL classrooms in trained and untrained groups. The findings showed that the EFL learners who learned in the structured cooperative learning condition showed more cooperative behaviour and less individually oriented behaviour and off-task behaviour than their peers in the untrained groups. The EFL learners' behaviours were more on-task and group focused. They listened to what other classmates had to say, discussed and shared different ideas, and provided more clarifications and explanations to each other. These types of behaviour are important indicators of the group's overall performance and competence, while off-task behaviour within a group has a deleterious impact on that group's overall performance (Abram et al., 2002). Webb (1992)

highlighted that different tasks require specific procedures; specifically, they are the clarifications and explanations that students provide to each other as they learn together that assist them to learn. The findings reported in this study are in line with those in Gillies (2008) who found that learners in the trained cooperating condition showed more cooperative behaviour and assistance behaviour states, such as guided directions, to assist understanding than shown by their peers in the untrained condition.

Webb, Troper, and Fall (1995) observed that if the learners are to benefit from the explanations they receive, the assistance must be relevant to the recipients' need for help, of and sufficient detail to enable them to clarify any misunderstandings and correct any information they provide in error. Gillies and Ashman (1998) pointed out that pupils who learn cooperatively are more perceptive of the needs of their classmates and will provide unsolicited help and other helping behaviours, when they perceive that they are necessary. In this study, it was shown that the help the learners gave to each other in the CL condition was detailed either with certain requests for help or with learners' opinions of the need to help and encourage others. Johnson and Johnson (1999) revealed that students in the CL groups showed more of those positive behaviours that demonstrate a tendency to learn together, to accomplish shared skills learning, to listen to each other, and, lastly, to reach a specific decision. These are common behaviours which cooperative groups show when members understand themselves to be striving to reach the same outcomes and to be interdependent. Ross (1995) stated that helping behaviour states could be developed if the learners are trained in how to request assistance and how to assist others.

In summary, learners can receive both solicited and unsolicited explanatory help from their classmates; however, this type of help should be elaborated on enough for them so that they may benefit from it (Webb, 2002). Gillies (2003) showed that learners in cooperative groups demonstrate more cooperative behaviour and providing more assistance to each other as they learned together in their groups than do their classmates in the untrained groups.

Research Question 3

The discussion of the EFL learners' learning outcomes and their behaviour states when learning English lessons through CL in comparison to traditional small groups led to the main research question in this study which refers to the EFL learners' verbal interactions and how

they communicate with each other to achieve their different goals: *What is the effect of cooperative learning in comparison to traditional small groups on the verbal interaction of EFL learners?*

In terms of learning English as a foreign language, the literature review suggests that there have been only a few studies on learners' behaviour states and their verbal interactions in the CL classroom. Research on students' behaviours, communication, and interactions during CL are still not common, particularly in learning English as a foreign language. As discussed in the literature review, the continued use of traditional learning methods in EFL learning contexts is one of limitations that have been found in prior research (Al-Hazmi, 2008). Findings from earlier studies indicate that concentrating on more student-centred and collaborative learning is an effective teaching method (Gillies, 2012, 2007; Webb, 2009). It has been found that CL methods are effective tools in promoting student-centred learning through the participation of learners. CL was also found to be a strong instrument that can boost EFL learners' collaboration, interaction, and motivation to learn.

In this research, it is clear that CL transformed this language-learning context from traditional learning to a more interactive classroom. This study showed that a CL environment enables the EFL learners to increase their engagement, participation, and it assists them to collaboratively contribute to the learning experiences. Moreover, this method effectively helped the EFL learners to transform the learning pedagogy to a more cooperative context that promoted their confidence, interactions, and independence.

The verbal interaction of the EFL learners was explored in two ways. First, it was looked at quantitatively; that is, the researcher examined whether there was a statistical difference between the experimental and control groups in terms of ten common verbal categories. Second, verbal interaction was studied qualitatively; examples and vignettes were provided and discussed from both conditions to illustrate the differences between these two conditions.

The analysis of the quantitative data highlighted that the EFL learners in the experimental condition were more verbally interactive. Compared to their peers in the control condition, the way students in the experimental condition were more active in making basic statements during discussions, responding to others' requests for basic information with brief statements,

providing explanations with examples, using positive interruption, and supporting or encouraging others in the group.

The data analysis showed that the EFL learners in the experimental conditions developed their verbal interactions skills over the course of the study. For instance, their cooperation was clear from the assistance that they provided to each other as well as through their use of explanations and other types of helping behaviours, such as giving directions or passing materials that were needed for a particular task.

The results revealed that there was more communication between the EFL learners in the experimental groups than between their peers in the control groups. Furthermore, the students in the experimental condition demonstrated a clear understanding of the need to interact with each other, ask for clarification, respect others' opinions, discuss ideas, and share information as they worked together on different problem-solving tasks (Gillies, 2004).

Other researchers have reported similar findings. For example, Webb (2009) indicated that the students acquiring help with specific questions and the help-providers explain them with featured explanations. The help-seekers then use the explanations and use them in their tasks and future projects. In this way, their understanding is improved and the result is better work output. Gillies (2004) compared CL groups with unstructured groups and revealed that cooperative groups provided more help to group members than uncooperative ones.

In contrast, the analysis of the verbal interaction showed that there was no significant difference between the students in the experimental and control conditions in terms of verbal interaction, such as requesting clarification from others, asking open-ended questions, and directing the actions of the group. Fall, Webb, and Chudowsky (2000) highlighted that they in favour of classifying specific and accurate information in assisting behaviour states into a detailed coding scheme. It can differentiate between poor and excellent interactions and helping behaviour when looking to other students to provide help. Fall et al. (2000) pointed out that there is a difference between instrumental assistance seeking and executive assistance seeking. Executive assistance-seeking refers to asking for an answer, whereas instrumental assistance seeking is asking for an explanation and clarification.

The analysis of the qualitative data (vignettes) showed that the EFL learners in the experimental condition assisted one another and built on one another's ideas; there was a

dynamic interaction between them and their language was rich in providing feedback, asking many questions, making statements, giving different examples, providing clarification and requests for clarification, and responding to each other. What is more, the analysis of the vignettes revealed that the EFL learners in the experimental conditions were learning well from each other. They learned new tasks from their classmates in the different groups and the learning takes place over time, going from an unknown state to a known state.

Moreover, the EFL learners in the experimental groups were practicing the five CL principles (see Chapter 2) that are essential if students are to cooperate, interact, and communicate with each other. In the following example, there are many examples of the EFL learners' verbal interactions such as asking questions, providing explanations, and seeking clarifications. Also, the EFL learners were guided by 'positive interdependence' and 'individual accountability' which are principles of CL. The following extract provides examples of the students' verbal interactions and how they are linked to the CL principles:

1. Saeed: Can we choose "do" from these four options? In order to answer this question, we have to cooperate with each other to select the appropriate answer.
2. Ali: Why do not we choose "did "instead of do because this sentence in the past.
3. Khalid: How do you know that this sentence in the past? **(asks a question)**
4. Ali: I am not sure but I guess. English subject is difficult to me. Can you clarify more to me? It is not clear to me. **(seeks clarification)**
5. Saad: In fact, we can say "Does he go to school every day" but we cannot say, "Did he go to school every day". The teacher has given us some examples last lesson such as "Do the students go to school every day?" Do you remember that example when he said that "every day" is a phrase using in present simple not in the past simple. **(provides explanation)**

In the above example, Saad asks a question: "Can we choose 'do' from these four options?" He asked his classmates to work together and used the pronoun 'we' instead of 'I'. Furthermore, Ali asks a question: "Why do not we choose did instead of do?" These examples highlighted that the EFL learners in the above extract demonstrated that they understood that they were linked together and needed to work cooperatively on the task.

Positive interdependence exists when group members are linked together in such a way that one cannot succeed unless others do also (Gillies, 2007). Students assist each other to learn

different skills. When students understand this CL principle they are more likely to work well together to complete their group tasks (Gillies, 2007). Individual accountability exists when each group member understands that they are responsible to complete the assigned tasks and to assist others to complete their tasks as well (Holliday, 2005). Terwel, Gillies, van den Eeden, and Hoek (2001) showed that the accurate information uttered by the classmates and group work are interrelated and, together, increase learning outcomes. On other hand, inaccurate information being discussed in a group of learners leads to weak learning outcomes. Trofimovich, McDonough, and Neumann (2013) highlighted that the kind of activities may lead to a proper way for modelling and eliciting target structures through peer interaction in EFL classrooms.

Mastergeorge et al. (2003) revealed that the learners who sought help by asking questions were the ones who received the best explanations and benefited from them. Johnson and Johnson (2008) outlined four important points that the students have to follow to coordinate efforts between group members: to communicate accurately and unambiguously; to get to know and trust each other; to accept and support each other; and to resolve conflicts constructively. Gillies and Ashman (1998) confirmed that CL environments increase learners' outcomes.

The analysis of the qualitative data (vignettes) showed that the EFL learners in the experimental conditions could apply CL properly when they were doing writing tasks such as writing short paragraphs. In the following example, the EFL learners assist each other during CL and demonstrate positive interdependence, which is the most important principle of CL (the use of 'we' instead of 'me'):

1. Saleh: Let's write the topic then we can develop the paragraph. The topic is the capital city of Saudi Arabia [Riyadh].
2. Anas: Excuse me, instead of this, let's write down the ideas and then we can write the topic easily. Because if we start to write the paragraph directly, we will miss some important ideas.
3. Abdullah: Our job is to write a short paragraph about the capital city, Riyadh. I suggest to follow the teacher's instructions to do this task. What do you think?
4. Naif: I agree with you. Let's write down the different ideas and then we can together start to write the paragraph. **(supports others in the group)**

The EFL learners were asked to write a short paragraph about Riyadh, the capital city of Saudi Arabia. It is evident from their inclusive language that the EFL learners assisted each other to write a good paragraph. For example, in turns 2 and 4, Anas and Naif used the phrases "let's write down", "we can write", and "let's start."

In addition to examining the differences in how the learners in the trained cooperative groups and untrained small traditional groups interacted and communicated with each other, this study also aimed to identify how they built on each other's ideas and provided strong links between different information and tasks presented during the group activities. Gillies (2008) showed that the students in the CL groups exhibit more complicated and higher level thinking in answering specific problem-solving questions than their peers in the traditional learning groups. The number of task-related interactions included: asking questions, making basic statements, giving explanations, and providing clarification to each other. This linked with their readiness to participate, to listen to each other, and to provide help when it was required (Slavin, 1996).

Conversely, the analysis of the qualitative data (vignettes) indicated that the EFL learners in the control conditions did not build on each other's ideas, there was no dynamic interaction between them, and their language skills were poorer than their peers in the experimental groups with regard to asking questions, making basic statements during discussions, providing explanations with examples, and responding to each other. Furthermore, the control group EFL learners did not follow each other and they usually made negative interruptions, rather than positive interruptions when the groups were discussing tasks.

In the following example, it is clear that the EFL learners did not help each other in terms of providing explanations, nor did they build on each other's ideas. Also, the EFL learners were not practicing CL principles, as seen in the following segment:

1. Faisal: Do you think we add 's' or 'es' to the verb "watch"?
2. Hamed: I prefer to work alone *because working together needs much time. I suggest working individually and at the end we will discuss it*.
3. Safer: I think that is a good idea. I do not like to work together**. (makes a statement during discussion)**
4. Saif: *When can I add 's' or 'es' to different verbs*? **(asks a question)**

5. Hamed: The teacher explained it last lesson but *I cannot explain it to you now because I am very busy with my work.*

In the excerpt, a preference for singular pronouns and individual work is clear. Therefore, they need training in cooperative learning to interact with others in the group in a proper way. For example, Hamed states, "I prefer to work alone", while Safer says, "I do not like to work with others". In both examples, they used the pronoun 'I' instead of the pronoun 'we', which showed that these EFL learners see themselves as individuals, rather than as part of a group working together. They are not demonstrating the four important guidelines outlined by Johnson and Johnson (2008) that students have to follow to coordinate efforts between group members: to communicate accurately and unambiguously; to get to know and trust each other; to accept and support each other; and to resolve conflicts constructively.

Webb (1991) highlighted that learning outcomes were the result of good explanations given from one learner to another. Inaccurate or vague explanations, which do not remove the queries of help seekers, do not lead to positive accomplishments as the students are unable to understand and, consequently, are not able to perform their tasks efficiently. Webb (2009) noted that the students requiring help ask for assistance by posing some questions. Further, other students are often able to explain issues with more clarity, which assists understanding. The help seekers then use the explanations received and use them in their tasks and future learning skills. In so doing, their understanding is increased and they produce better learning outputs. Gillies (2004) revealed that CL groups provided more help to the group members than their peers in the uncooperative traditional groups. Lin, Tao, Chen, Chen and Lie (2013) declared that CL can develop learners' attitudes to working in groups, increase the satisfaction level of their achievements, and finally, enhance their perception to peer interaction and CL groups overall.

The analysis of the qualitative data (vignette) highlighted that the EFL learners in the control condition were not willing to work cooperatively during the different writing tasks. In the following example, the EFL learners did not assist each other during CL; preferring to work individually, they encountered obstacles in writing a paragraph together. Moreover, they did not give feedback to each other and there was no dynamic interaction between them.

1. Ahmed: The teacher asked us to write a paragraph about learning English in a foreign language. Can you clarify to me, please? **(seeks clarification)**
2. Adel: Writing a paragraph is very hard and working together is not useful especially in writing task. I tend to write alone because working together needs much time. **(makes basic statement during discussion)**
3. Waleed: That is a good idea. I dislike writing with others.
4. Sultan: It will be fantastic if we writing individually and at the end we will select different ideas.

Webb and Mastergeorge (2003b) stated that the assistance provided in the cooperative groups results in a positive outcome only if the help is provided is on time and if it is accurate. Despite these possible drawbacks, a positive outcome is best accomplished if the learner implements the help attained. In addition to the practical use CL, an understanding and discussion of CL are also essential for achieving learning outcomes (Gillies, 2004; Webb, 2009).

Research Question 4

The fourth research question is: *How do EFL learners respond to their new experience in learning English in a cooperative learning environment?* With regard to this question, the analyses of interview data revealed that the EFL learners in the CL condition believe they achieve more when they work cooperatively, their motivation to speak English increases, and they gain additional social skills.

In relation to the literature review in Chapter 2, this part discusses the positive opportunities that enabled the implementation of CL into the EFL language learning context, and how the EFL learners' found the impact of this implementation on their language learning skills.

Based on interview feedback and statements from students in the experimental condition, it was evident that they communicated with each other, were active in their learning, and had sufficient opportunities to participate by asking questions, speaking with each other, and taking turns in most language learning situations. The analyses of the interview data found that EFL learners believe they can learn more when they work cooperatively and they believe their achievements have increased as a result of this teaching method. After implementing CL in the EFL classroom, the EFL learners assisted each other in their groups and their English

achievements improved as a consequence of this learning method. One student remarked, "Definitely, my English grammar is improving and I can write some sentences without grammatical mistakes" (Student 10).

Similarly, Muhammad (2010) found that students' achievement and attitudes toward mathematics improved as a result of the cooperative learning method. Furthermore, Lord (2001) also found that the students who learn during the CL method obtain higher grades and achieve their goals more than their peers who learn using a traditional learning method.

Furthermore, EFL learners stated that CL increased their motivation to study English language skills. A student remarked, "In fact, I hate to learn English because it is not my native language but now, I start to like it because my classmates encourage me to speak English during cooperative learning" (Student 8). CL provides students with a suitable chance to identify the value of the content of what they are studying, and they perceive themselves as competent contributors to their progress. When this happens, their motivation will be enhanced and promoted (Shaaban, 2006).

Further, the interview data analysis revealed that most of the EFL learners in this study wish that their English teachers would continue using CL in their classroom. Student 8 confirmed this positive experience of CL: "I hope that my teacher keeps on using CL method."

EFL learners highlighted that learning English through CL assisted them to learn different social skills, such as presenting in front of their teachers and classmates. One student commented: "Presenting a topic in front of people was very difficult to me but I have trained to talk and present a topic in the comfortable learning method that is cooperative learning" (Student 3). This feedback is supported by the work of Kao (2003), who found that students' speaking skills such as presenting in front of other students increased as a result of the CL method.

Gillies (2004) indicated that learners who learn via CL were more cooperative when they had been trained in the social skills that increase effective cooperation between students. Moreover, an important part of cooperating and working as a CL group includes the adoption of different roles, such as a leader, writer, and time controller, by the group members. Being responsible for different roles ensures that the group members are cooperative and accountable for their contributions to the group (Gillies, 2011).

Conversely, a few EFL learners declared that they would prefer to work individually rather than cooperate with their classmates. Bock (2000) pointed out that many EFL learners were unwilling to cooperate with their teachers. Also, some students highlighted that their classmates did not give them enough of a chance to state their opinions. In addition, they declared that a few students did not participate with them but instead they worked alone. Student 1 said, "I do not like to work in groups because my classmates do not give me a chance to participate", while Student 8 remarked, "One of my classmate does not work with us. He just plays, laughs and wastes our time."

In short, the data revealed that the CL method enhanced the transformational shift from traditional learning to a CL learning environment for this EFL classroom.

It is clear from the data how CL created suitable and beneficial opportunities for English language learning in the EFL context. Furthermore, the data revealed that the CL provided rich student generated learning resources, and it showed how CL facilitated this process. In all, these findings and results not only clarified the potential of CL to develop the EFL context in general, but it also shows the willingness as well as readiness of EFL learners to deal with these innovations to overcome their difficulties with learning in order to gain English language skills.

Synthesis of Quantitative and Qualitative Results Findings

The findings and results in this study were dependent on four different types of data: the students' EGAT, the students' behaviour states, students' verbal interactions, and, finally, the findings from the interview data identify how EFL learners respond to their new experiences in learning English through CL. Both quantitative and qualitative findings were presented and discussed during this study.

Firstly, the EGAT in which enabled the researcher to identify EFL learners' achievements in learning English as a foreign language context. The findings of this research pointed out that the EFL learners in the CL environment obtained higher scores in the English grammar achievement than their peers in the traditional small groups. Thanh, Gillies, and Renshaw (2008), Tuan (2010), and Vo (2010) found that language skills, interpersonal skills, and creative thinking were developed via CL.

While a number of researchers have reported similar results previously, this study helps to explain the reasons why CL increases students' achievements in the EFL context. Depending on this result, further analysis is needed and the collection of different types of data is important to find these reasons. The next step is to look at whether the EFL learners behave cooperatively or individually; for that, an examination of behaviour states is helpful to discover the reasons behind these achievements. For this study, data on behaviour states were gathered in order to show how the EFL learners behave with each other during CL and traditional small group learning, particularly, to find out whether they work cooperatively or individually during different tasks

Findings from this study showed that EFL learners in the CL groups work and behave cooperatively whereas their peers in the small traditional groups did not consistently demonstrate these behaviours. Also, the results showed that the students in the experimental groups exhibited more cooperative and less non-cooperative behaviours than their peers in the control groups. They depended on each other and cooperated well with each other on the group task (Gillies, 2004). However, further data and analysis are required to find different reasons; the establishment of one or two reasons is not sufficient evidence to declare that CL increases students' achievements. It is clear, however, that the EFL learners in the cooperative groups gained in their achievements and cooperated effectively to a significantly greater degree than their peers in the small traditional groups. It was also important to learn about their communications and how they interacted with each other, what they say to each other to learn new skills, and what common phrases they used during CL. In order to find answers for these different questions, EFL conversations and verbal interactions were videotaped and collected to examine and compare how the EFL learners communicated and interacted with each other during CL and traditional (small group) learning.

Verbal interactions quantitative findings showed that the EFL learners in the CL groups surpassed their peers in the small traditional groups in terms of giving more examples, seeking clarification, and giving explanations. Statistically, there was a difference between the experimental and control conditions in the verbal interaction categories in favour of the experimental condition. This finding was supported by Gillies (2004), who found that CL groups give more help to the group members than traditional learning. Furthermore, the EFL learners in the experimental condition provided more assistance in the form of making

statements during conversation, responding to others' requests, and providing explanations with examples than did their peers in the control condition.

Students' interactions and communications with each other were clear from the assistance that they provided to each other; this included the many clarifications, examples, explanations, and other types of cooperation behaviours, such as respecting each other's opinions, both offered and given during conversation. Lee and Wang (2013) studied how learning language skills and learners' interactions with different opinions were developed via the CL teaching method. Compared to their peers in the CL groups, EFL learners in the small traditional groups made fewer clarifications, asked fewer questions, and gave fewer examples. Moreover, EFL learners in the traditional groups made more negative interruptions, especially interrupting and talking during others' turns; they did not respect each other's suggestions and different opinions.

Examples and vignettes are needed from EFL learners' conversations to give a clear picture of how they worked with each other and the types of common phrases and expressions they used during their conversation as they did different tasks in class. In this study, the qualitative data indicated that the EFL learners who were interacting with each other during CL groups were depending, assisting, and building on each other's opinions and explanations. Their interaction and conversations showed a wide range of different expressions and phrases. Also, the CL group students provided important feedback, sought and provided clarifications, explained and gave examples, and responding respectfully to each other. Francisco (2013) found that the CL can increase learners' understanding and enable them to interact with each other and depend on one another's ideas.

However, unlike in the CL groups, the qualitative data showed that the small traditional group EFL learners' did not interact well in their discussions; their conversation and communications lacking with regard to asking questions, making clarifications, giving different explanations, responding to each other, and providing different examples. Furthermore, they did not build on each other's knowledge and understanding through their interactions and did not correct other group members when they made errors in expression. They lacked of sense of group identity and preferred to work individually.

At this moment, the researcher has found the EFL learners in the experimental groups were better than their peers in the control conditions in terms of academic achievements, behaviour states and verbal interaction, but EFL learners did not have a chance to talk or express their feelings about learning English in a more interactive and communicative teaching method than their previous teaching method: traditional learning. Giving the students a chance to say or talk about their perceptions in CL would increase our knowledge and information about the reasons behind CL different benefits.

Lastly, EFL learners' in the CL groups were interviewed to express and provide their perceptions, feelings, and opinions about learning the language in more cooperative and interaction context. The findings in this research showed that most EFL learners identify that CL has many benefits to students, particularly, CL develops their language skills, increases their self-confidence, enables them to listen to different suggestions and ideas, respect classmate's views, build new friendships and relationships with others colleagues in the classroom, practises different roles, such as leader, writer, speaker, develop their oral presentation skills, improve their sense of responsibility and accountability for the work they do, and, finally, boost their motivation to learn English even though it is difficult for them. Kao (2003) and Gómez et al. (2013) showed that motivation and oral skills can be promoted through CL groups. Similarly, Liao (2005) revealed that CL had large positive impacts on academic achievement and motivation. It is similar with the findings of the results that cooperative learning increased the motivation of EFL learners to gain academic skills. Similarly, Liao (2005) revealed that CL had large positive impacts on academic achievement and motivation.

Chapter Summary

The findings of this research indicate that providing EFL learners with the opportunity to cooperate, to learn together, and to assist each other in trained CL groups enables them to be more interactive with each other, make representative group decisions, be committed to the group, and to experience group cohesion. In a CL group, EFL learners tend to assist and listen to each other more, share their resources and knowledge, and collaborate to complete the group's learning tasks. EFL learners in CL conditions, compared with traditional small group instruction, demonstrate increased achievements and have greater opportunity for positive interaction, communication, and productivity in different academic skills. A CL

environment provides the conditions that enable EFL learners to communicate with each other, particularly when connected with foreign language learning (Yan, 2010). The use of CL enables EFL learners to forge stronger relationships by working at different tasks cooperatively; further, the responsibility for the work is shared equally among the group members. Goal interdependence and a positive working environment assists EFL learners to exercise greater self-autonomy and be less dependent on outside authority, so students gradually progress from a state of interdependence to independence over time (Johnson & Johnson, 1991).

Chapter 8: Conclusion and Recommendations

Chapter Overview

CL is a teaching method that has been extensively researched over the last three decades that has attracted much attention due to the large body of research which demonstrates that learners attain social and academic benefits (Gillies, 2003b; Johnson & Johnson, 2002). CL involves "the instructional use of small groups so that students work together to maximize their own and each other's learning" (Johnson & Johnson, 2002). When the students have a chance to cooperate with others, they learn to share different ideas, clarify points of view with each other, and develop their ideas (Webb & Mastergeorge, 2003a).

This research arose out of the need to change the EFL learning context from teacher-directed, traditional learning to a context that was more interactive, cooperative and student-centred. This research aimed to examine the impact of CL in developing EFL students' grammatical competence in an EFL context. In particular, this study aimed to examine the effectiveness of CL on the EFL learners' learning processes, including their behaviour and their verbal interactions when learning English in a CL environment. CL is a new approach in the Arab education context, particularly in Saudi Arabia where research concentrating on its implementation is not well known (Mansour & Alhodithy, 2007).

This study employed a mixed method approach and asked the following questions: 1. What is the effect of CL in comparison to traditional small groups on the achievement of grammatical knowledge of EFL learners?; 2. What is the effect of CL in comparison to traditional small groups on the behaviour of EFL learners?; 3. What is the effect of CL in comparison to traditional small groups on the verbal interactions of EFL learners?; and 4. How do EFL learners respond to their new experience of learning English in a CL environment?

This chapter consists of a summary of the findings and the contributions of this research. This chapter also highlights the implication of the study and makes recommendations for further research.

Study Conclusion

The findings of this study in relation to the research questions are as follows:

- The EFL learners who learned English grammar lessons through CL obtained higher

scores on the EGAT than their peers who learned the same English lessons through traditional small groups;

- There were no significant differences in the writing task scores between those in the experimental condition who learned writing lessons through CL and those in the control condition who learned the same lessons via traditional small groups;
- The EFL learners in the cooperative groups were more cooperative than their peers in the small traditional groups who learned English lessons via traditional small groups. Likewise, the EFL learners who learned English lessons through traditional small groups worked more individually than their peers in the experimental condition that learned the same lessons via CL;
- More than their peers in the control condition, the EFL learners in the experimental condition communicated more with each other and were more verbally interactive in making basic statements during their discussion, responding to other's requests for basic information with brief statements, providing explanations with examples, using positive interruption, and supporting or encouraging others in the group;
- The EFL learners in the experimental condition developed their verbal interactions skills across the time of the study. In particularly, the improvement in verbal interactions was evident in the cooperative assistance that they provided to each other, as well as the explanations and helping behaviours, such as giving directions;
- The EFL learners in the experimental condition assisted each other, built on each other's ideas, and there was a dynamic interaction between them;
- Their language was rich in providing feedback, asking questions, making statements, giving different examples, providing clarifications and requests for clarification, and responding to each other;
- The EFL learners in the experimental condition were learning from each other through their cooperative interaction in the CL environment; and
- The EFL learners in the experimental groups followed the CL principles that assisted them to communicate and interact with each other effectively.

In contrast to the above positive findings in the experimental group, the findings for the EFL learners in the traditional groups are as follows:

- The EFL learners in the small traditional (control) groups did not build on each other's ideas and there was no dynamic interaction between them. Their language skills were less well developed, particularly when asking questions, making basic statements during discussions, providing explanations with examples, and responding to each other;
- The EFL learners in the control condition did not follow each other and they usually made negative interruptions rather than positive interruptions.
- The EFL learners in the control condition did not help each other by providing explanations or giving examples, and they did not build on each other's ideas.
- The EFL learners did not follow CL principles and were not willing to work cooperatively to complete different writing tasks.

Overall, the findings of this study were quite positive and showed that the EFL learners in the experimental condition believed that working in groups according to the principles of CL increased their achievements and motivation to learn different English skills. They were willing to continue to learn English skills through working in groups and they wished that their teacher would continue using the CL method of teaching and not return the individual learning teaching method.

The EFL learners also believed that using the CL method enabled them to develop social skills that helped them to perform different roles in the classroom, such as a presenter or leader. Also, it enabled them to build positive relationships with other classmates.

In summary, the researcher concluded that when the EFL learners are trained in CL, they can assist and build on each other's ideas. Also, there will be a dynamic interaction between the learners, resulting in language rich in feedback; students will ask many questions, make basic statements, give different examples, provide and request clarification, and respond to each other. However, when they do not train in CL, these behaviours are less evident.

Directions for Future Research

This study aimed examine the effectiveness of CL in developing EFL students' grammatical competence in a relatively under-researched context and to account for this effectiveness with reference to CL processes and EFL learners' behaviour and verbal interactions in the CL environment and traditional small groups. This research reported a variety of positive

findings during and after the implementation of the CL method. New representations of CL behaviour were also shaped by the findings of this study. Further research is important to extend the benefits of this research to different language skills in different EFL classroom contexts, particularly as this research was conducted with all-male secondary learners of English as a foreign language. Similar studies could be conducted with female students in a similar context, or with elementary or university students of different genders. Further research might be conducted in different contexts or situations to identify the applicability of using CL method in a wider variety of contexts.

As previously noted, this research did not qualitatively identify the EFL teachers' perceptions about using the CL method in their classrooms, so further study would be useful to ascertain their views on the applicability of this method in EFL contexts in terms of the EFL learners' performance and achievement in language learning skills. In addition, this study concentrates on specific language learning skills such as grammar and writing skills, but the research could be extended to include different language learning skills as well.

Also, this research was conducted with EFL learners for whom English was their major area of study. However, students studying different subjects have a different English learning environment. Thus, it would be worthwhile to conduct further studies to discover the effectiveness of CL on students' verbal interactions and performance in those different learning contexts. It would also be useful to examine the impact of the CL method on students' verbal interactions in a study with a larger number of EFL learners over a longer period of time.

Implications for EFL in Saudi Arabia

This research has identified the benefits of CL in the Saudi EFL context. The findings showed that, as a result of learning English skills through CL, students have obtained many benefits, including improved academic achievements, social skills, presentation skills, improved self-esteem, heightened motivation to learn, and reduced anxiety about learning a foreign language. Consequently, it is recommended that EFL policy makers and particularly the Ministry of Education in Saudi Arabia consider adopting this teaching method in EFL classrooms and implement it as soon as possible for the benefit of all Saudi EFL learners. Also, EFL teachers are recommended to attend some professional development sessions or

workshops on CL to learn how to best apply the method, and then use this method in their classrooms instead of traditional methods. Moreover, it is recommended that EFL academic staff create more interaction activities in universities by using cooperative learning methods when teaching English inside their classesrooms. Furthermore, it is recommended that EFL teachers in Saudi Arabia particularly, and in other settings, avoid using small traditional groups. On another hand, they are recommended to apply successful cooperative learning by practising the five principles of cooperative learning that will enable them to implement cooperative learning properly.

Final Remarks

This research, which investigated the impact of cooperative learning (CL) in comparison to traditional small group learning on EFL learners' achievements', behaviour states, verbal interactions, and their perception about learning English in the CL environment, contributes new insights into the development of CL pedagogies in an EFL context. The study is part of a journey to identify how CL can become a driving force for improved learning experiences for EFL students. In particular, the impact of CL on learners' verbal proficiency is still in its infancy. Further studies need to be conducted to broaden the categories of verbal interactions and analyse EFL learners' conversations and those results will extend the findings of this research. Cooperative learning has been shown to be highly beneficial for EFL students in the Saudi context as it gives the students the opportunity to practise speaking the new language in a comfortable environment of one's peers, where work can be shared, problems discussed, and challenges mitigated together. As Johnson (1995) affirmed, "student-student interaction in second language classrooms will more than likely have a positive impact upon students' opportunities for both classroom learning and second language acquisition" (p. 128).

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Appendix 1:
Cooperative Learning Intervention Training Program

Intervention Training Program (5 weeks)

The program, presented over five weeks, depends on the work of Gillies (2003, 2007), Gillies and Ashman (1995), and Yamanashi (2008) on the CL training program. An overview of the intervention-training program is outlined below:

1. Discussion of CL five principals: positive interdependence, small group skills, and group processing, face to face interaction, and individual accountability; these are the basic skills of the CL method. Students must train to use them; otherwise, they cannot work cooperatively in groups;
2. "We instead of me" positive interdependence. It exists when group members are linked together in such a way that one cannot succeed unless others succeed also (Gillies, 2007);
3. "No hitchhiking on the work of others" individual accountability (Holliday, 2005). Every student in the group should identify and fulfil his unique role in the group. Individual accountability exists when each group member understands that he is responsible to complete the assigned tasks and to assist others to complete their tasks as well;
4. Understanding group social skills: students need to be proficient with basic social skills such as listening politely, constructively disagreeing, and taking turns to work in groups;
5. Sharing of experiences: what were the benefits of CL? What were the disadvantages? How could the approach be sustained? Video clips about CL may be beneficial.

Meeting 1

The first meeting began with a debate about teachers' existing proficiencies in producing CL practices in their schoolrooms. In relation to CL theory, debate on singular responsibility and minor group expertise took place. The fundamental concepts of competition and teamwork were debated with reference to social interdependence theory.

Meeting 2

The second presentation commenced with a talk about the involvements in the preceding conference. Positive interdependence was presented as the topic of discussion based on an explanation of the "we instead of me" methodology. Achievements and possible difficulties were identified with the aim of selecting suitable clarifications and tactics. A record of the types of positive interdependence was passed forward. Training was then scheduled cooperatively.

Meeting 3

The third presentation began with a conversation on the development of the cooperative trainings accomplished the previous week. Yet again, accomplishments and complications were discussed. A compilation of methods to ensure individual accountability were passed forward (Johnson & Johnson, 2003). Teachers created class strategies for particular subject zones to prepare for the coming weeks' training.

Meeting 4

The fourth meeting started with the revision of the earlier week's teachings with a trail of positive guidance distribution. Social abilities required in CL situations were introduced. Teachers were required to follow up on certain points about CL that had been operational in their own classes in order to display to the team from the previous conference. Teachers selected several activities from a recorded list and decided to apply them in their classrooms in the coming week.

Meeting 5

The fifth and concluding presentation began with a talk about the prior weeks' achievements and complications. The discussion involved formulating whether the technique had been effective and which alterations should be implemented for more positive results. The teachers gave their separate designs on the positive capacities of teamwork in CL.

Meeting Proformas

Meeting 1: Proforma

Lesson Objective: • To understand small group concepts		
Time	Activities	Resources
	Introduction: • What has been successful with teachers *Body*: • Introduce CL word concepts • Five principle of CL • Introduce meanings of word concepts • Match words to meanings • Use overview diagram to draw ideas together & give direction *Conclusion*: This meeting reflection on requirements of cooperation	• Laminated words • Handout

Meeting 2: Proforma

Lesson Objectives: • To understand small group concepts		
Time	Activities	Resources
	Introduction: • Discussion of last week's activity • Can teachers recall the five concepts of group workings? *Body*: • Give out H.O. on positive interdependence • Reflect on past classroom activities and identify positive interdependence • Each individual to share pieces of a puzzle for to complete the whole puzzle (4X4 puzzle) • Positive interdependence activity *Conclusion*: • plan a lesson that will be taught by members • Next week that will include social interdependence • "We instead of me" concept	• See handout sheet • Positive interdependence handout • Puzzle x 1 • Crayons • Completed picture Scissors • Rubbish • Teachers' copies of 4x4 puzzle

Meeting 3: Proforma

Lesson Objectives: • Understanding the concept of individual accountability • No hitchhiking on the work of others		
Time	Activities	Resources
	Intro: • Talk about classroom successes of the "we *instead of me"* approach to group learning and social interdependence • Discuss problems and come up with solutions *Body*: • Give out Individual Accountability handout • Activity: Guided Reciprocal Peer Questioning *Conclusion*: • Plan lesson for next week that will be taught by members that will include individual accountability • "No hitchhiking off the work of others"	• Handout Individual Accountability • sheet of white card • Coloured pens

Meeting 4: Proforma

Lesson Objectives: • Understanding the concept of use of social skills in group work		
Time	Activities	Resources
	Intro: • Talk about successes in the classroom of "No hitchhiking off the work of others" approach to group learning and individual accountability. • Discuss problems and come up with solutions. *Body*: • Discuss social skills in groups • Do behaviour and verbal cues chart for "listening" • Activity: Make role "listening" skill *Conclusion*: • Plan a lesson that will be taught by members next week that will include practicing a social skill	• Handouts from overheads • Large card/ whiteboard • Instructions, paper, and pens

Meeting 5: Proforma

Lesson Objective: • To share individual ideas regarding collaborative interactions		
Time	Activities	Resources
	Intro: • Talk about successes in the classroom of "social skills" approach to group learning and individual accountability • Discuss problems and come up with solutions *Body:* • The final session has been set up to share and celebrate successes with others. Teachers will discuss: 1. Benefits of collaborative learning in groups 2. Disadvantages of collaborative learning in groups 3. How the approach can be sustained in classroom activities 4. The features most important to success in collaborative learning contexts *Conclusion*: • Question and answer session	

Definitions and Explanations

Positive Interdependence: Exists when a mutual or joint goal is established so that individuals perceive they can attain their goals if and only if their group members attain their goals

Individual Accountability: Everyone has to do their fair share of the work and not hitchhike off the work of others.

Promotive Interaction: To encourage and facilitate each other's efforts to complete the task (through small group/social skills

Individual Accountability

Individual accountability leads to team participants gaining knowledge about choosing not to 'hitchhike' on the efforts of others, laze around, or take advantage of others. Types of individual accountability are as follows:

1. You enhance progressive aims of interdependence with other forms of progressive interdependence (like compensation, role, supply, etc.). Positive compensation interdependence can be created by supplication of group compensations, e.g. “If all members of your group score above 90% on the test, each of you will receive 5 bonus points.”
2. Every individual has to perform his or her portion of the task. The original purpose of CL is to progress the team members’ individual efficiency and strength to showcase their respective skills. All team members are responsible to train themselves with regard to the allotted subject and also to assist in training other team members. This can be done by: first, evaluating the presentation of each team member; and second, providing this review to team members.

Positive Interdependence List

If we consider football as a metaphor, we see that the player who throws the ball and the one who catches it are positively interdependent, yet the attainment of the goal of one performer is contingent on the other. This shared accomplishment is based on each of them playing proficiently. This is the “all for one and one for all” method (Kagan, 1992, 1998).

This is provided if:

1. Learners observe that each team member’s contribution is needed and important for team progression; it should be free of escapers.
2. Each team member has a special ability to contribute to the cooperative struggle of the group. Does this technique encourage positive interdependence? Answer the following:
    a. Is the result advantageous for the individual group member and the others?
    b. Is cooperation required (one person is inadequate for the task)?

Positive Goal Interdependence

Students observe that they are able to acquire their learning objectives, provided that all team members are able to achieve their objectives. To ensure this, the teacher must create defined, shared objectives and give clear instructions, such as, “Learn the assigned material and make sure that all members of your group learn it.” The team objective should at all times be

included in the lesson.

Positive Reward/Celebration Interdependence

Every team member is given similar compensation when the team accomplishes its objectives. For enhanced team interdependence, teachers can supplement shared compensation (e.g., if all team members obtain 90% or greater on the examination, each will be given five extra points). Occasionally, teachers may give a team score for the collective performance of the learners' respective team, separate scores from exams, and give extra points if every team member lives up to the standard of the exam. Frequent celebrations of team work and success are motivational and increase the standard of collaboration.

Positive Resource Interdependence

All team members receive a part of the resources, information, or materials required to finish a group task. Consequently, members need to compile their resources to attain their objectives. Teachers may request the members focus on working together by providing learners inadequate resources in order to force the group members to work together. For instance, the teacher might give one copy of task sheet or assignment for the team to share, or provide individual learners only a portion of the necessary resources so the team has to work together to complete the task (e.g. the jigsaw procedure).

Positive Role Interdependence

This means each individual is assigned a role by the teacher that must be taken up in order for the group to complete their shared objective. For instance, the teacher may assign overlapping roles like a reader, recorder, observer, and scribe to create role interdependence among the learners. They must each fulfil their individual role to successfully complete the group task.

Positive Task Interdependence

Positive task interdependence includes establishing a division of labour so that each team member is at least partially reliant on the other team member's completing their roles in order to finish his individual role. Without the fulfilment of all these interrelated and interdependent roles, the group task cannot be completed.

Roles in Cooperative Learning

Cooperative learning roles are established through constructive interdependence. That is, contributions by members to the group are kept balanced and equitable through the fair distribution of particular tasks and accountabilities to each team worker. Learners can perform a variety of possible roles; role selection will be based on the learning activity and the defined goals.

Common Roles in Cooperative Learning

Checker: Observes that every team member has followed through and completed his task, questions team members to elucidate one by one to ensure the correct concepts have been applied to finish the work, and helps to produce learners who are perceptive, overt, and willing to alter and debate;

Corrector: Aims for precision by amending the workers' summary and by accumulating essential material not found in the summary;

Conflict Creator: Considered to be a devil in disguise as he deliberately raises contradictory opinions and other solutions to the problems faced by the group; he detects the incompatible views that exist in the team that remain concealed or overlooked;

Elaborator: Links the group's planning to other concepts they have learned or to outside school frameworks;

Encourager: Inspires individuals to take part and ensures accomplishments are celebrated;

Explainer: Provides non-emotive organisational details of how to achieve the group's goals, provides precise responses to other learners' efforts, and asks questions of other group members to define or determine how to finish a given task.

Facilitator: Makes sure the rules are followed and helps to keep learners focused on the given task.

Helper: Keeps track of the essential points and specifics of the task through the use of sketches, mental images, mind mapping, and various retention techniques and displays them for the team members;

Help Seeker: Identifies anyone who can assist team members, makes definite and particular queries, and continues to seek help and source information until assistance is provided.

Materials Manager: Ensures all the resources and materials needed for completion of task, by the group is available and intact;

Observer: Observes the cooperative work done by the team and suggests where improvements can be made;

Paraphraser: Rephrases whatever the previous speaker states, to test and elaborate on knowledge;

Praiser: Praises team members for their perception and contribution to the team;

Questioner: Questions the team to help them or encourage them to be more profound and thorough in their mission;

Recorder: Records all team discussions; these can be recorded normally or graphically, as in word webs, Venn diagrams, or mental maps;

Reporter: Gives knowledge of a particular team work to another or the whole group;

Safety Monitor: Ensures that proper security measures are taken to prevent any possible damage caused by any instrument;

Sound Hound: Controls the voice levels of the group and keeps discussions balanced;

Summarizer: Reports on the fundamental points talked about while the group is in conference and keeps notes of the group's progression; and

Timekeeper: Stays aware of and observes time restrictions.

Steps in Development of Social Skills

Pick a skill every week to study:

1. Select a skill-of-the-week: Choose the one the learners require most (structure for success);

2. Present the skill-of-the-week: Make ‘what if’ queries and look for learners’ replies. Learners discuss with the group how the task should appear and sound;
3. Allot revolving roles: Every group member gets an opportunity to perform different roles and participate in oral and unspoken activities;
4. Reflect on the Skill: Inquire about the learners’ comfort level with their ability in a given skill to assist them to evaluate their group presentation. For instance, if the skill of the week is ‘staying on task’, one could ask how the group is performing on a particular task and determine whether they are staying on track or have deviated from the goal.

Appendix 2: Data Instruments

A2.0 English Grammar Achievement Test (EGAT)

Student: ……
Group: ……
Time: 40 minutes

PART 1 (40 marks)

A. Choose the correct answer.

1. We …… to school every Saturday.
   a. come
   b. comes
   c. came
   d. will come

2.Next week, ……
   a. he play football.
   b. he will plays football.
   c. he will play football.
   d. he plays football.

3. I …… to Makkah next month
   a. go
   b. goes
   c. went
   d. will go

4. The policeman usually …… people.
   a. helped
   b. helps
   c. help
   d. will help

5. Last week, she …… in that hospital.
   a. Will work
   b. works
   c. Worked
   d. Work

6. Yesterday, I …… 3 apples.

a. ate
b. eat
c. eats
d. eaten

B. Choose the correct negative for the following affirmative sentences.

7. I visit my grandfather every Friday.

a. I do not visit my grandfather every Friday.
b. I did not visit my grandfather every Friday.
c. I am not visiting my grandfather every Friday.
d. I will not visit my grandfather every Friday.

8. She will make cakes next Monday.

a. She did not made cakes next Monday.
b. She does not make cakes next Monday.
c. She will not make cakes next Monday.
d. She does not make cakes next Monday.

9. I turned on the TV three hours ago.

a. I did not turn on the TV three hours ago.
b. I do not turn on the TV three hours ago.
c. I will not turn on the TV three hours ago.
d. I am not turning on the TV three 3 hours ago.

C. Read the following questions and choose the correct answers.

10. Will the teacher correct these questions?

a. Yes, he does.
b. Yes, he is.
c. Yes, he did.
d. Yes, he will.

11. Does he buy a new car every year?

a. No, he does not.
b. No, he did not.
c. No, he is not.
d. No, he will not.

B. Choose the correct negative for the following affirmative sentences. (cont'd)

12. Did they build this house last month?
    a. No, they will not.
    b. No, they do not.
    c. No, they did not.
    d. No, they are not.

13. Where will you travel next holiday?
    a. I will travel to Taif.
    b. I am travelling to Taif.
    c. I travelled to Taif.
    d. I travel to Taif.

14. When do you sleep every night?
    a. We slept at 11 o'clock.
    b. We sleep at 11 o'clock.
    c. We are sleeping at 11 o'clock.
    d. We will sleep at 11 o'clock.

15. What did he change?
    a. He changes money.
    b. He will change money.
    c. He is changing money.
    d. He changed money.

16. Where does she come from?
    a. She came from Egypt.
    b. She is coming from Egypt.
    c. She comes from Egypt.
    d. She will come from Egypt.

D. Read the following sentences and choose the correct questions:

17. We always go to school early.
    a. Are you going to school early?
    b. Do you go to school early?
    c. Did you go to school early?
    d. Will you go to school early?

D. Read the following sentences and choose the correct questions (cont'd):

18. Saudi students usually go to 3 schools.
    a. How many schools do Saudi students go to?
    b. How many schools will Saudi students go to?
    c. How many schools are Saudi students going to?
    d. How many schools did Saudi student go to?

19. Cavemen decorated their caves.
    a. Did cavemen decorate their caves?
    b. Do cavemen decorate their caves?
    c. Were cavemen decorated their caves?
    d. Will cavemen decorate their caves?

20. A Muslim prays five times every day.
    a. Did a Muslim pray five times every day?
    b. Will a Muslim pray five times every day?
    c. Is a Muslim praying five times every day?
    d. Does a Muslim pray five times every day?

Part 2: Writing task. (10 marks)

Write a paragraph about yourself. In the paragraph, please write about your birth and childhood, your parents and siblings and about your plans for the future.

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END OF THE TEST

A2.1 Observations Schedule: Behaviour States

Categories	Behaviour states
Cooperative behaviour Non-cooperative behaviour Individual on-task behaviour Off-task behaviour	Task-oriented group behaviour Competitive behaviour Working alone on task Nonparticipation in group activities and not working individually

A2.2. Observation Schedule: Verbal Interaction Variables

Interaction variables	Frequency
1. Makes basic statement during discussion.	
2. Responds to others' requests for basic information with brief statement.	
3. Explanation with giving example.	
4. Asks open-ended questions (how, why…)	
5. Requests clarification from others.	
6. Positive interruption	
7. Negative interruption	
8. Directs actions of the group (Gives directions, organizes responsibility)	
9. Supports or encourages others in the group.	
10. Non-specific verbal interaction	

A2.3 Cooperative Learning Interview Questions

1. Describe your feelings about learning English in a cooperative learning method environment?
2. What are the differences between learning English in CL groups and individually?

3. Describe the benefits of CL in terms of your academic achievements.

A2.4 Interview Questions: EFL Learners' Cooperative Learning Experiences

1. Describe the benefits of CL in terms of student relationships.
2. Tell me about barriers that you have to cope with when you study in cooperative learning groups.
3. Do you want to join cooperative learning more often? Why?
4. Do you like working in groups? Why or why not?
5. What are the reasons that make you to like or dislike working in groups?
6. Describe the benefits of CL in terms of social skills and self-confidence.

Appendix: 3: Test Data Analyses

Table A3.1

Frequencies

School		Frequency	%	Valid %	Cumulative %
	1	36	25.9	25.9	25.9
	2	33	23.7	23.7	49.6
Valid	3	39	28.1	28.1	77.7
	4	31	22.3	22.3	100.0
	Total	139	100.0	100.0	

Table A3.2

Frequencies

Class		Frequency	%	Valid %	Cumulative %
	1	18	12.9	12.9	12.9
	2	18	12.9	12.9	25.9
	3	16	11.5	11.5	37.4
	4	17	12.2	12.2	49.6
Valid	5	20	14.4	14.4	64.0
	6	19	13.7	13.7	77.7
	7	15	10.8	10.8	88.5
	8	16	11.5	11.5	100.0
	Total	139	100.0	100.0	

Table A3.3

Condition

		Frequency	%	Valid %	Cumulative %
Valid	Control	69	49.6	49.6	49.6
	Experimental	70	50.4	50.4	100.0
	Total	139	100.0	100.0	

Table A3.4

Multiple Choice Questions 1

		Frequency	%	Valid %	Cumulative %
Valid	6	2	1.4	1.4	1.4
	7	4	2.9	2.9	4.3
	8	2	1.4	1.4	5.8
	9	7	5.0	5.0	10.8
	10	5	3.6	3.6	14.4
	11	12	8.6	8.6	23.0
	12	14	10.1	10.1	33.1
	13	17	12.2	12.2	45.3
	14	11	7.9	7.9	53.2
	15	8	5.8	5.8	59.0
	16	11	7.9	7.9	66.9
	17	9	6.5	6.5	73.4
	18	6	4.3	4.3	77.7
	19	12	8.6	8.6	86.3
	20	2	1.4	1.4	87.8
	21	5	3.6	3.6	91.4
	22	1	.7	.7	92.1
	23	5	3.6	3.6	95.7
	24	1	.7	.7	96.4
	25	2	1.4	1.4	97.8
	26	1	.7	.7	98.6
	27	1	.7	.7	99.3
	28	1	.7	.7	100.0
	Total	139	100.0	100.0	

Table A3.5

Writing Task Questions 1

		Frequency	%	Valid %	Cumulative %
Valid	0	39	28.1	28.1	28.1
	1	37	26.6	26.6	54.7
	2	31	22.3	22.3	77.0
	3	20	14.4	14.4	91.4
	4	10	7.2	7.2	98.6
	5	1	.7	.7	99.3
	6	1	.7	.7	100.0
	Total	139	100.0	100.0	

Table A3.6

Multiple Choice Questions 2

		Frequency	%	Valid %	Cumulative %
Valid	7	1	.7	.7	.7
	8	1	.7	.7	1.4
	9	4	2.9	2.9	4.3
	10	2	1.4	1.4	5.8
	11	10	7.2	7.2	12.9
	12	12	8.6	8.6	21.6
	13	11	7.9	7.9	29.5
	14	21	15.1	15.1	44.6
	15	10	7.2	7.2	51.8
	16	12	8.6	8.6	60.4
	17	10	7.2	7.2	67.6
	18	8	5.8	5.8	73.4
	19	12	8.6	8.6	82.0
	20	2	1.4	1.4	83.5
	21	6	4.3	4.3	87.8
	22	6	4.3	4.3	92.1
	23	3	2.2	2.2	94.2
	24	2	1.4	1.4	95.7
	25	1	.7	.7	96.4
	27	2	1.4	1.4	97.8
	28	1	.7	.7	98.6
	31	1	.7	.7	99.3
	32	1	.7	.7	100.0
	Total	139	100.0	100.0	

Table A3.7
Writing Task Questions 2

		Frequency	%	Valid %	Cumulative %
Valid	0	17	12.2	12.2	12.2
	1	52	37.4	37.4	49.6
	2	28	20.1	20.1	69.8
	3	20	14.4	14.4	84.2
	4	14	10.1	10.1	94.2
	5	7	5.0	5.0	99.3
	6	1	.7	.7	100.0
	Total	139	100.0	100.0	

Table A3.8

Pre-test Total Scores

		Frequency	%	Valid %	Cumulative %
Valid	6	2	1.4	1.4	1.4
	7	3	2.2	2.2	3.6
	8	2	1.4	1.4	5.0
	9	6	4.3	4.3	9.4
	10	2	1.4	1.4	10.8
	11	12	8.6	8.6	19.4
	12	7	5.0	5.0	24.5
	13	14	10.1	10.1	34.5
	14	9	6.5	6.5	41.0
	15	12	8.6	8.6	49.6
	16	7	5.0	5.0	54.7
	17	10	7.2	7.2	61.9
	18	8	5.8	5.8	67.6
	19	10	7.2	7.2	74.8
	20	7	5.0	5.0	79.9
	21	6	4.3	4.3	84.2
	22	6	4.3	4.3	88.5
	23	2	1.4	1.4	89.9
	24	1	.7	.7	90.6
	25	1	.7	.7	91.4
	26	1	.7	.7	92.1
	27	6	4.3	4.3	96.4
	28	1	.7	.7	97.1
	29	1	.7	.7	97.8
	30	1	.7	.7	98.6
	31	1	.7	.7	99.3
	34	1	.7	.7	100.0
	Total	139	100.0	100.0	

Table A3.9

Post-test Total Scores

		Frequency	%	Valid %	Cumulative %
Valid	8	2	1.4	1.4	1.4
	9	2	1.4	1.4	2.9
	10	2	1.4	1.4	4.3
	11	4	2.9	2.9	7.2
	12	7	5.0	5.0	12.2
	13	12	8.6	8.6	20.9
	14	13	9.4	9.4	30.2
	15	11	7.9	7.9	38.1
	16	12	8.6	8.6	46.8
	17	11	7.9	7.9	54.7
	18	8	5.8	5.8	60.4
	19	10	7.2	7.2	67.6
	20	5	3.6	3.6	71.2
	21	10	7.2	7.2	78.4
	22	5	3.6	3.6	82.0
	23	5	3.6	3.6	85.6
	24	3	2.2	2.2	87.8
	25	3	2.2	2.2	89.9
	26	5	3.6	3.6	93.5
	28	2	1.4	1.4	95.0
	29	1	.7	.7	95.7
	30	1	.7	.7	96.4
	32	2	1.4	1.4	97.8
	33	1	.7	.7	98.6
	36	1	.7	.7	99.3
	38	1	.7	.7	100.0
	Total	139	100.0	100.0	

Table A3.10

Between Groups MANOVA with Two DVs, Condition as IV, and School and Class as Covariates

Between-Subjects Factors			
		Value Label	*N*
Condition	1	Control	69
	2	Experimental	70

Table A3.11

Multivariate Tests

Effect		Value	*F*	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	.018	1.222[b]	2.000	134.000	.298
	Wilks' Lambda	.982	1.222[b]	2.000	134.000	.298
	Hotelling's Trace	.018	1.222[b]	2.000	134.000	.298
	Roy's Largest Root	.018	1.222[b]	2.000	134.000	.298
School	Pillai's Trace	.013	.869[b]	2.000	134.000	.422
	Wilks' Lambda	.987	.869[b]	2.000	134.000	.422
	Hotelling's Trace	.013	.869[b]	2.000	134.000	.422
	Roy's Largest Root	.013	.869[b]	2.000	134.000	.422
Class	Pillai's Trace	.002	.134[b]	2.000	134.000	.874
	Wilks' Lambda	.998	.134[b]	2.000	134.000	.874
	Hotelling's Trace	.002	.134[b]	2.000	134.000	.874
	Roy's Largest Root	.002	.134[b]	2.000	134.000	.874
Condition	Pillai's Trace	.012	.780[b]	2.000	134.000	.461
	Wilks' Lambda	.988	.780[b]	2.000	134.000	.461
	Hotelling's Trace	.012	.780[b]	2.000	134.000	.461
	Roy's Largest Root	.012	.780[b]	2.000	134.000	.461

a. Design: Intercept + school + class + condition

b. Exact statistic

Table A3.12

Tests of Between Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	*F*	Sig.
Corrected Model	MCDifScore	72.090[a]	3	24.030	3.690	.014
	WritingDifScore	3.984[b]	3	1.328	.958	.415
Intercept	MCDifScore	3.425	1	3.425	.526	.470
	WritingDifScore	2.047	1	2.047	1.476	.227
School	MCDifScore	8.856	1	8.856	1.360	.246
	WritingDifScore	.195	1	.195	.141	.708
Class	MCDifScore	1.170	1	1.170	.180	.672
	WritingDifScore	.060	1	.060	.044	.835
Condition	MCDifScore	.698	1	.698	.107	.744
	WritingDifScore	1.733	1	1.733	1.249	.266
Error	MCDifScore	879.046	135	6.511		
	WritingDifScore	187.253	135	1.387		
Total	MCDifScore	1147.000	139			
	WritingDifScore	213.000	139			
Corrected Total	MCDifScore	951.137	138			
	WritingDifScore	191.237	138			

a. R Squared = .076 (Adjusted R Squared = .055)

b. R Squared = .021 (Adjusted R Squared = -.001)

Table A3.13 (A & B)

Estimated Marginal Means & Condition

A. Grand Mean

Dependent Variable	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
MCDifScore	1.188[a]	.216	.760	1.616
WritingDifScore	.394[a]	.100	.196	.591

a. Covariates appearing in the model are evaluated at the following values: School = 2.47, Class = 4.44.

B. Condition

Dependent Variable	Condition	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
MCDifScore	Control	1.345[a]	.528	.300	2.390
	Experimental	1.031[a]	.522	-.001	2.064
WritingDifScore	Control	.147[a]	.244	-.335	.629
	Experimental	.641[a]	.241	.164	1.118

a. Covariates appearing in the model are evaluated at the following values: School = 2.47, Class = 4.44.

TableA3.14

Between Groups MANOVA with Two DVs and Condition as IV

Between-Subjects Factors			
		Value Label	*N*
Condition	1	Control	69
	2	Experimental	70

Table A3.15

Box's Test of Equality of Covariance Matrices

Box's M	1.333
F	.437
df1	3
df2	3401133.692
Sig.	.726

Tests the null hypothesis that the observed covariance matrices of the dependent variables are equal across groups.

a. Design: Intercept + condition

TableA3.16

Multivariate Tests

Effect		Value	*F*	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	.219	19.065[b]	2.000	136.000	.000
	Wilks' Lambda	.781	19.065[b]	2.000	136.000	.000
	Hotelling's Trace	.280	19.065[b]	2.000	136.000	.000
	Roy's Largest Root	.280	19.065[b]	2.000	136.000	.000
Condition	Pillai's Trace	.061	4.438[b]	2.000	136.000	.014
	Wilks' Lambda	.939	4.438[b]	2.000	136.000	.014
	Hotelling's Trace	.065	4.438[b]	2.000	136.000	.014
	Roy's Largest Root	.065	4.438[b]	2.000	136.000	.014

a. Design: Intercept + condition
b. Exact statistic

Table A3.17

Levene's Test of Equality of Error Variances

	F	df1	df2	Sig.
MCDifScore	.171	1	137	.680
WritingDifScore	.912	1	137	.341

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.
a. Design: Intercept + condition

Table A3.18

Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	*F*	Sig.
Corrected Model	MCDifScore	50.539[a]	1	50.539	7.688	.006
	WritingDifScore	3.676[b]	1	3.676	2.685	.104
Intercept	MCDifScore	194.424	1	194.424	29.576	.000
	WritingDifScore	21.633	1	21.633	15.801	.000
condition	MCDifScore	50.539	1	50.539	7.688	.006
	WritingDifScore	3.676	1	3.676	2.685	.104
Error	MCDifScore	900.597	137	6.574		
	WritingDifScore	187.561	137	1.369		
Total	MCDifScore	1147.000	139			
	WritingDifScore	213.000	139			
Corrected Total	MCDifScore	951.137	138			
	WritingDifScore	191.237	138			

a. R Squared = .053 (Adjusted R Squared = .046)
b. R Squared = .019 (Adjusted R Squared = .012)

Table A3.18 (A & B)

Estimated Marginal Means & Condition

A. Grand Mean

Dependent Variable	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
MCDifScore	1.183	.217	.753	1.613
WritingDifScore	.395	.099	.198	.591

B. Condition

Dependent Variable	Condition	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
MCDifScore	Control	.580	.309	-.031	1.190
	Experimental	1.786	.306	1.180	2.392
WritingDifScore	Control	.232	.141	-.047	.510
	Experimental	.557	.140	.281	.834

Table A3.19

Pairwise Comparisons

Dependent Variable	Condition (I)	Condition (J)	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b]	
						Lower Bound	Upper Bound
MCDifScore	Control	Experimental	-1.206*	.435	.006	-2.066	-.346
	Experimental	Control	1.206*	.435	.006	.346	2.066
WritingDifScore	Control	Experimental	-.325	.198	.104	-.718	.067
	Experimental	Control	.325	.198	.104	-.067	.718

Note. Based on estimated marginal means.

* mean difference is significant

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments)

Table A3.20

Multivariate Tests

	Value	*F*	Hypothesis df	Error df	Sig.
Pillai's trace	.061	4.438[a]	2.000	136.000	.014
Wilks' lambda	.939	4.438[a]	2.000	136.000	.014
Hotelling's trace	.065	4.438[a]	2.000	136.000	.014
Roy's largest root	.065	4.438[a]	2.000	136.000	.014

Note. Each *F* tests the multivariate effect of Condition. These tests are based on the linearly independent pairwise comparisons among the estimated marginal means.

a. Exact statistic

Table A3.21

Univariate Tests

Dependent Variable		Sum of Squares	df	Mean Square	*F*	Sig.
MCDifScore	Contrast	50.539	1	50.539	7.688	.006
	Error	900.597	137	6.574		
WritingDifScore	Contrast	3.676	1	3.676	2.685	.104
	Error	187.561	137	1.369		

Note. The *F* tests the effect of Condition. This test is based on the linearly independent pairwise comparisons among the estimated marginal means.

Table A3.22

ANOVA with the Total Difference Score (Pre-test to Post-test) as DV and with Conditions as the IV

Between-Subjects Factors			
		Value Label	*N*
Condition	1	Control	69
	2	Experimental	70

Table A3.23

Levene's Test of Equality of Error Variances

Dependent Variable: TotalDifScore			
F	df1	df2	Sig.
.000	1	137	.991

Note. Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + condition

Table A3.24

Tests of Between-Subjects Effects

Dependent Variable: TotalDifScore					
Source	Type III Sum of Squares	df	Mean Square	*F*	Sig.
Corrected Model	81.476[a]	1	81.476	8.942	.003
Intercept	345.764	1	345.764	37.947	.000
Condition	81.476	1	81.476	8.942	.003
Error	1248.322	137	9.112		
Total	1678.000	139			
Corrected Total	1329.799	138			

Note. a. R Squared = .061 (Adjusted R Squared = .054)

Table A3.25 (A & B)

Estimated Marginal Means & Condition

A. Grand Mean

Dependent Variable: TotalDifScore

Mean	Std. Error	95% Confidence Interval	
		Lower Bound	Upper Bound
1.577	.256	1.071	2.084

B. Condition

Dependent Variable: TotalDifScore

Condition	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Control	.812	.363	.093	1.530
Experimental	2.343	.361	1.629	3.056

Table A3.26

Pairwise Comparisons

Dependent Variable: TotalDifScore						
(I) Condition	(J) Condition	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b]	
					Lower Bound	Upper Bound
Control	Experimental	-1.531*	.512	.003	-2.544	-.519
Experimental	Control	1.531*	.512	.003	.519	2.544

Note. Based on estimated marginal means.

*. The mean difference is significant at the ???

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

Table A3.27

Univariate Tests

Dependent Variable: TotalDifScore					
	Sum of Squares	df	Mean Square	*F*	Sig.
Contrast	81.476	1	81.476	8.942	.003
Error	1248.322	137	9.112		

Note. The *F* tests the effect of Condition. This test is based on the linearly independent pairwise comparisons among the estimated marginal means.

Test total score analyses

Table A3.28

One Way ANOVAs

Descriptives

		N	Mean	SD	Std. Error	95% Confidence Interval for Mean		Min.	Max.
						Lower Bound	Upper Bound		
Pre-test total scores	Control	69	15.91	5.207	.627	14.66	17.16	6	28
	Experimental	70	16.83	5.858	.700	15.43	18.23	6	34
	Total	139	16.37	5.543	.470	15.44	17.30	6	34
Post-test total scores	Control	69	16.72	4.537	.546	15.63	17.81	8	30
	Experimental	70	19.17	6.258	.748	17.68	20.66	8	38
	Total	139	17.96	5.588	.474	17.02	18.89	8	38

Table A3.29

Test of Homogeneity of Variances

	Levene's Statistic	df1	df2	Sig.
Pre-test total scores	.407	1	137	.525
Post-test total scores	4.961	1	137	.028

Table A3.30

ANOVA

		Sum of Squares	df	Mean Square	*F*	Sig.
Pre-test total scores	Between Groups	29.126	1	29.126	.947	.332
	Within Groups	4211.421	137	30.740		
	Total	4240.547	138			
Post-test total scores	Between Groups	208.030	1	208.030	6.948	.009
	Within Groups	4101.711	137	29.939		
	Total	4309.741	138			

Table A3.31

Descriptive Statistics for Control Condition Difference Scores

Control	*N*	Mean	Std. Dev.	Skewness	Kurtosis	Min	Max	Std. error.
MC difference score	69	0.58	2.603	-1.304	2.360	-8	5	0.313
Writing difference score	69	0.23	1.226	-0.164	-0.444	-2	3	0.148
Total difference score	69	0.81	3.035	-1.290	2.270	-10	5	0.365

Table A3.32

Descriptive Statistics for Experimental Condition Difference Scores

Experimental	*N*	Mean	Std. Dev.	Skewness	Kurtosis	Min	Max	Std. error.
MC difference score	70	1.79	2.525	-0.947	2.996	-8	8	0.302
Writing difference score	70	0.56	1.112	0.047	-0.115	-2	3	0.133
Total difference score	70	2.34	3.002	-1.053	2.601	-9	9	0.359

Table A3.33

Tests of Between Subject Effects for Two Different Scores (Post-test Minus Pre-test)

DV	Type III SS	df1	df2	MS	*F*	Sig.
MC difference score	50.54	1	137	50.539	7.688	0.006
Writing difference score	3.68	1	137	3.676	2.685	0.104

Table A3.34

Spreadsheet for the Test

id	school	condition	class	choose1	writing1	pre-test	choose2	writing2	post-test
1	1	1	1	21	2	23	22	4	26
2	1	1	1	13	0	13	14	1	15
3	1	1	1	12	1	13	14	2	16
4	1	1	1	15	2	17	17	1	18
5	1	1	1	16	1	17	17	2	19
6	1	1	1	25	3	28	24	4	28
7	1	1	1	11	0	11	13	1	14
8	1	1	1	20	2	22	20	3	23
9	1	1	1	10	1	11	12	1	13
10	1	1	1	13	2	15	16	0	16
11	1	1	1	16	3	19	16	1	17
12	1	1	1	14	0	14	17	2	19
13	1	1	1	11	1	12	11	0	11
14	1	1	1	23	4	27	15	2	17
15	1	1	1	16	2	18	11	0	11
16	1	1	1	9	0	9	12	1	13
17	1	1	1	18	1	19	13	0	13
18	1	1	1	13	2	15	13	1	14
19	1	1	2	19	0	19	11	1	12
20	1	1	2	9	0	9	12	2	14
21	1	1	2	14	1	15	17	1	18
22	1	1	2	23	4	27	23	3	26
23	1	1	2	13	2	15	15	2	17
24	1	1	2	17	2	19	19	1	20
25	1	1	2	16	1	17	16	4	20
26	1	1	2	13	0	13	14	1	15
27	1	1	2	23	3	26	21	3	24
28	1	1	2	18	1	19	19	2	21
29	1	1	2	11	0	11	13	1	14
30	1	1	2	16	1	17	16	2	18
31	1	1	2	17	2	19	19	2	21
32	1	1	2	18	3	21	18	4	22
33	1	1	2	19	2	21	22	1	23
34	1	1	2	23	4	27	25	5	30
35	1	1	2	9	0	9	13	1	14
36	1	1	2	17	0	17	17	2	19
37	2	1	3	11	0	11	12	0	12
38	2	1	3	6	0	6	9	0	9
39	2	1	3	7	0	7	7	1	8

40	2	1	3	12	1	13	14	0	14
41	2	1	3	12	1	13	14	1	15
42	2	1	3	11	0	11	11	1	12
43	2	1	3	19	2	21	19	1	20
44	2	1	3	13	0	13	14	1	15
45	2	1	3	7	0	7	11	1	12
46	2	1	3	13	0	13	12	1	13
47	2	1	3	13	2	15	17	2	19
48	2	1	3	10	1	11	14	2	16
49	2	1	3	19	2	21	14	1	15
50	2	1	3	12	3	15	14	2	16
51	2	1	3	16	2	18	19	3	22
52	2	1	3	9	0	9	9	1	10
53	2	1	4	12	0	12	17	0	17
54	2	1	4	11	0	11	14	0	14
55	2	1	4	16	1	17	14	1	15
56	2	1	4	14	1	15	13	0	13
57	2	1	4	14	2	16	16	0	16
58	2	1	4	12	0	12	15	1	16
59	2	1	4	13	2	15	16	2	18
60	2	1	4	15	1	16	14	3	17
61	2	1	4	19	2	21	19	2	21
62	2	1	4	17	3	20	16	1	17
63	2	1	4	11	0	11	11	1	12
64	2	1	4	14	2	16	14	0	14
65	2	1	4	15	3	18	14	4	18
66	2	1	4	21	1	22	17	4	21
67	2	1	4	21	4	25	19	4	23
68	2	1	4	10	2	12	10	1	11
69	2	1	4	11	0	11	11	1	12
70	3	2	5	8	0	8	10	1	11
71	3	2	5	12	2	14	12	1	13
72	3	2	5	7	1	8	8	0	8
73	3	2	5	16	4	20	18	3	21
74	3	2	5	28	6	34	32	6	38
75	3	2	5	9	0	9	12	1	13
76	3	2	5	8	2	10	12	2	14
77	3	2	5	12	3	15	11	2	13
78	3	2	5	6	0	6	9	1	10
79	3	2	5	13	1	14	11	3	14
80	3	2	5	11	2	13	12	1	13
81	3	2	5	12	1	13	12	0	12

82	3	2	5	14	0	14	15	3	18
83	3	2	5	14	2	16	15	4	19
84	3	2	5	17	3	20	19	4	23
85	3	2	5	23	4	27	31	5	36
86	3	2	5	21	3	24	23	5	28
87	3	2	5	24	3	27	28	5	33
88	3	2	5	12	1	13	14	3	17
89	3	2	5	17	1	18	12	1	13
90	3	2	6	12	0	12	9	0	9
91	3	2	6	19	0	19	21	1	22
92	3	2	6	9	1	10	11	2	13
93	3	2	6	21	2	23	22	4	26
94	3	2	6	14	1	15	14	1	15
95	3	2	6	20	2	22	18	1	19
96	3	2	6	15	1	16	18	2	20
97	3	2	6	13	1	14	14	1	15
98	3	2	6	19	3	22	21	4	25
99	3	2	6	13	0	13	13	2	15
100	3	2	6	25	4	29	27	5	32
101	3	2	6	16	2	18	18	4	22
102	3	2	6	10	1	11	15	1	16
103	3	2	6	12	0	12	13	1	14
104	3	2	6	15	1	16	15	1	16
105	3	2	6	12	0	12	14	0	14
106	3	2	6	27	4	31	19	3	22
107	3	2	6	17	2	19	19	2	21
108	3	2	6	17	3	20	21	3	24
109	4	2	7	15	1	16	19	2	21
110	4	2	7	19	3	22	16	1	17
111	4	2	7	7	0	7	13	2	15
112	4	2	7	14	3	17	15	3	18
113	4	2	7	26	4	30	27	5	32
114	4	2	7	16	3	19	17	1	18
115	4	2	7	19	2	21	21	3	24
116	4	2	7	17	3	20	22	4	26
117	4	2	7	10	1	11	13	3	16
118	4	2	7	11	0	11	12	1	13
119	4	2	7	13	4	17	15	4	19
120	4	2	7	18	2	20	23	3	26
121	4	2	7	13	0	13	16	1	17
122	4	2	7	14	1	15	14	2	16
123	4	2	7	18	0	18	22	3	25

124	4	2	8	19	1	20	21	2	23
125	4	2	8	13	1	14	16	1	17
126	4	2	8	9	0	9	13	1	14
127	4	2	8	13	1	14	18	1	19
128	4	2	8	11	2	13	14	2	16
129	4	2	8	19	0	19	18	3	21
130	4	2	8	13	1	14	14	2	16
131	4	2	8	12	1	13	16	1	17
132	4	2	8	15	2	17	19	2	21
133	4	2	8	11	3	14	17	3	20
134	4	2	8	16	1	17	20	1	21
135	4	2	8	18	0	18	18	1	19
136	4	2	8	14	1	15	15	0	15
137	4	2	8	19	3	22	22	3	25
138	4	2	8	22	5	27	24	5	29
139	4	2	8	15	3	18	16	3	19