

T. R.
GAZIANTEP UNIVERSITY
GRADUATE SCHOOL OF EDUCATIONAL SCIENCES
DEPARTMENT OF FOREIGN LANGUAGES TEACHING
ENGLISH LANGUAGE TEACHING PROGRAM

**LEAN AS AN INNOVATIVE METHOD IN ENGLISH
LANGUAGE TEACHING TO INCREASE LEARNER'S
READING AND WRITING SKILLS**

Master's of Arts Thesis

HUNAR M. FARAJ

GAZIANTEP

July, 2017

T. R.
GAZIANTEP UNIVERSITY
GRADUATE SCHOOL OF EDUCATIONAL SCIENCES
DEPARTMENT OF FOREIGN LANGUAGES TEACHING
ENGLISH LANGUAGE TEACHING PROGRAM

**LEAN AS AN INNOVATIVE METHOD IN ENGLISH
LANGUAGE TEACHING TO INCREASE LEARNER'S
READING AND WRITING SKILLS**

Master's of Arts Thesis

HUNAR M. FARAJ

Supervisor: Assoc. Prof. Dr. Filiz YALÇIN TILFARLIOĞLU

Gaziantep
July, 2017

APPROVAL OF THE JURY

Student : Hunar Nasih M. Faraj
University : Gaziantep University
Graduate School : Graduate School of Educational Sciences
Department : Foreign Language Teaching
Thesis Title : **Lean as an Innovative Method in English Language Teaching to Increase Learner's Reading and Writing Skills**

Thesis Date :

I certify that this thesis satisfies all the requirements as a thesis for the degree of Master of Arts.

Assoc. Prof. Dr. Filiz YALÇIN TILFARLIOĞLU
Head of Department

This is to certify that I have read this thesis and that in my opinion it is fully adequate, in scope and quality, as a thesis for the degree of Master of Arts.

Assoc. Prof. Dr. Filiz YALÇIN TILFARLIOĞLU
Supervisor

This is to certify that we have read this thesis and that in our opinion it is fully adequate, in scope and quality, as a thesis for the degree of Master's of Art.

Examining Committee Members

Signature

Assoc. Prof. Dr. Filiz YALÇIN TILFARLIOĞLU

Assist. Prof. Dr. Fadime YALÇIN

Assist. Prof. Dr. Fatma Çiftçi

It is approved that this thesis has been written in compliance with the formatting rules laid down by the Graduate School Educational Sciences.

Assoc. Prof. Dr. M. Fatih OZMANTAR
Director

RESEARCH ETHICS DECLARATION

The information contained here is, to the best of my knowledge and belief, accurate. I have read the University's current research ethics guidelines, and accept responsibility for the conduct of the procedures set out in the attached application in accordance with these guidelines, the University's policy on conflict of interest and any other conditions laid down by the Gaziantep University Research Ethics Committee or its Sub-Committees. I have attempted to identify all the risks related to this research that may arise in conducting this research, and acknowledge my obligations and the rights of the participants.

I have declared any affiliation or financial interest in this research or its outcomes or any other circumstances which might present a perceived, potential or actual conflict of interest, in accordance with Gaziantep University policy on Conflicts of Interest.

Signature:

Name: Hunar Nasih M. Faraj

Student ID Number: 201443221

Date:

Dedication

I would like to present this study to my parents for what they have done for me. They waited for a long time to see this moment. Also to my only sister and my brothers, who help me in everything I do.



ACKNOWLEDGEMENTS

This thesis appears in its current form due to the help and guidance of several people. I would like to express my gratitude to my supervisor Assoc. Prof. Dr. Filiz YALÇIN TILFARLIOĞLU for her useful comments, thoughts and engagement through the learning process of this master thesis. I would like to thank her for introducing me to the topic as well for the support on the way and receiving a great deal of help and feedback from her.

I am indebted to those people who encouraged and helped me during the period of this study. My special thanks go to my family and my friends.

Also, I would like to thank the participants in my experimental study, who shared their precious time during the teaching process.

ÖZET

ÖĞRENCİLERİN OKUMA VE YAZMA BECERİLERİNİ GELŞTİRMEK İÇİN İNGİLİZCE DİLİ EĞİTİMİNDE YENİLİKÇİ BİR YÖNTEM: LEAN

M. Faraj,Hunar,

Yüksek Lisans, İngiliz Dili Eğitimi Anabilim

Tez Danışman: Assoc. Prof. Dr. Filiz YALÇIN TILFARLIOĞLU

Temmuz-2017, 130 sayfa

İngilizce öğrenenlerin ihtiyaçlarının karşılanması için kullanılan farklı öğretim yöntemleri İngilizce dil sınıflarında tartışmalı bir konu haline gelmiştir. Yenilikçi bir yöntem olan lean methodu, öğrenmeyi sağlamak için etkili bir dil öğrenme yaklaşımı sunar. Burada dikkat edilmesi gereken şey bunun nasıl ele alınacağıdır. Öğrenimi keyifli kılmak ve öğretmenlerin istedikleri hedefe ulaşmaları için etkili öğretim yöntemleri kullanmak gerekir. Bu çalışmada, İngilizce öğreniminde yenilikçi bir öğrenme metodu olan lean methodunun, öğrenenlerin okuma ve yazma becerileri üzerine uygulanmasının etkileri araştırılmıştır. Bir uygulama ve kontrol grubuyla birlikte, ön test yarı deney modeli kullanıldı. Deney grubuna ön testten sonra 12 hafta bu method uygulanırken, kontrol grubunda lean methoduyla ilgili herhangi bir uygulama yapılmadı. Analizler, araştırmaya katılan bir karma lisedeki 56 öğrenciye uygulanmıştır. Buna ek olarak, lean uygulamadan önce öğrencilere tanıtıldı, ayrıca hedefleri belirlemek için katılımcılar arasında dağıtıldı. İstatistiksel analizler, betimsel istatistikler ve t testleri kullanılarak gerçekleştirildi. Sonuçlarda, ön test ve son testlerdeki performanslar göz önüne alınarak iki grup arasındaki puan farkının önemli ölçüde farklı olduğu gözlemlenmiştir ($t=2.923$, $df=54$, $p<.05$). Test sonrası deney grubu 3.7 ortalama ile ortalaması 1.85 olan kontrol grubunun önüne geçmiştir. Ayrıca, betimsel istatistikler, deney grubundaki katılımcıların, okuma becerisinde 2.4 ortalama ile ortalaması 1.71 olan yazma becerisinden daha iyi geliştiğini gösterdi. Sonuç, deney grubunun ön-son test skorlarının okuma ($t= -3.910$, $p<.05$) ve yazma ($t= -4.628$, $p<.05$) bölümlerinde önemli ölçüde farklı olduğunu göstermektedir. Kontrol grubunda ön test ve son testlerde 1.7 okuma ortalaması ve 7.8 yazma ortalamasıyla belirgin artışlar gözlemlendi. Dokuz bölümden oluşan sınavın her bir bölümünde öğrencilerin farklı başarılar kaydettikleri tespit edildi. Ayrıca bu çalışma, iki grubun uygulama sonucundan sonra testin farklı alanlarında geliştiklerini gösterdi. Ancak lean deney grubunda daha yüksek bir başarı elde etmiştir. Bu çalışma lean methodunun, öğrencilerin İngilizce sonuçlarını etkili bir şekilde arttırdığına dair kanıtlar sunmaktadır. Sonuçlar lean methodunu İngilizce dil öğretiminde kullanmanın mümkün ve etkili olduğunu göstermektedir. Çalışmada, lean'ın yeni bir modeli eğitim sürecinin sonuçlarını arttırmak ve müfredatı zamanında bitirmek için gösterilmiştir.

Anahtar Kelimeler: Lean, lean methodu, yabancı dil olarak İngilizce (EFL), okuma ve yazma becerileri, İngilizce Öğrenenler.

ABSTRACT**LEAN AS AN INNOVATIVE METHOD IN ENGLISH LANGUAGE
TEACHING TO INCREASE LEARNER'S READING AND WRITING
SKILLS**

M. Faraj, Hunar

MA Thesis, English Language Teaching Program

Assoc. Prof. Dr. Filiz YALÇIN TILFARLIOĞLU

July-2017, 130 pages

Different methods of teaching have become a controversial topic in English language classrooms as the needs of the English learners should be met. Lean as an innovative method offers an effective language learning method to cater for learning. To exhilarate learning, teachers need to use effective methods of teaching to achieve what target they do want to reach. The current study investigated the impact of applying lean as an innovative method of teaching English on learners' reading and writing skills in English language teaching. A pre-post-test quasi-experimental design was used with a treatment and control group. The experimental group was given the treatment after the pre-test for 12 weeks, while the control group received no lean treatment. The analyses were conducted on 56 students from a coeducational high school participated in the study. Additionally, lean was introduced to the students before applying it as a method of teaching, it was also distributed among the participants to identify their goals. Statistical analyses were carried out using descriptive statistics and t tests. In the results, it was found that the score was significantly different between the two groups in terms of their performances in the pre- and post-tests ($t=2.923$, $df=54$, $p<.05$). The experimental group increased their mean score with an average of 3.7 in the post-test highly more than the control group which was 1.85. In addition, the descriptive statistics showed that the participants in the experiemntal group improved better in the reading skill with an average of 2.4 more than the writing skill with an average of 1.71. The result was significantly different in the reading ($t= -3.910$, $p<.05$) and writing ($t= -4.628$, $p<05$) sections in the pre-post-test scores of the treatment group . In the control group in terms of reading and writing, there were apparent increases between the pre and post tests, reading with an average of 1.7 and writing with an average of .78 increases. It was found that the learners recorded different achievements in each part of the test, which were nine parts. Moreover, the study indicated that the two groups improved in different areas of the test after the treatment period but the use of lean method produced a higher achievement in the experiemntal group. This study provides evidence that applying lean increases the end-result of the learners of English effectively. These findings indicate that implementing lean method is possible and effective in English language teaching. A new model of lean in education has been shown in the study to increase the end-result of an educational process and finish the syllabus on time.

Keywords: Lean, lean method, English as a foreign language (EFL), reading and writing skills, English Learners.

TABLE OF CONTENTS

	<u>Page No</u>
APPROVAL OF THE JURY.....	i
RESEARCH ETHICS DECLARATION	ii
DEDICATION	iii
ACKNOWLEDGEMENTS.....	iv
ÖZET.....	v
ABSTRACT.....	vi
TABLE OF CONTENTS.....	vii
LIST OF TABLES.....	xii
LIST OF FIGURES.....	xiv
LIST OF APPENDICES.....	xv
LIST OF ABBREVIATIONS.....	xvi

CHAPTER I

INTRODUCTION

1.1 PRESENTATION.....	1
1.2. BACKGROUND OF THE STUDY.....	1
1.3. STATEMENT OF THE PROBLEM	4
1.4. PURPOSE AND IMPORTANCE OF THE STUDY	5
1.5. STATEMENT OF RESEARCH QUESTIONS	6
1.6. ASSUMPTIONS OF THE STUDY	6
1.7. DEFINITIONS OF THE TERMS AND ABBREVIATIONS.....	6

CHAPTER II

LITERATURE REVIEW

2.1. PRESENTATION.....	8
2.2. LEAN.....	8
2.3. LEAN THINKING.....	10
2.4. LEAN PRINCIPLES	12
2.4.1 System: Process.....	13
2.4.2 Subsystem: Skilled People	13
2.4.3 Tools and Technology	13
2.5. PRINCIPLES OF LEAN CONSUMPTION	14
2.6. STAGES TO IMPLEMENT LEAN	14
2.7. LEAN MANUFACTURING	15
2.8. LEAN METHODOLOGY	18
2.9. TEACHING AND LEARNING	19
2.10. ORGANIZATIONAL LEARNING	21
2.11 EDUCATION.....	23
2.12. WASTES IN EDUCATION	25
2.13 LEAN IN EDUCATION	26

CHAPTER III

METHODOLOGY

3.1. PRESENTATION	30
3.2. RESEARCH DESIGN	30
3.3. CONTEXT	32

3.4 PARTICIPANTS	32
3.5. PROCEDURES	33
3.6. MATERIALS	36
3.7. RELIABILITY.....	37
3.8. DATA ANALYSIS	39
3.9. VALIDITY	39

CHAPTER IV

FINDINGS

4.1. INTRODUCTION	41
4.2. LEARNERS' PERFORMANCE ON PRE-POST-TESTS	41
4.3. EXPERIMENTAL GROUP'S PRE-TEST AND POST-TEST RESULTS.....	41
4.4. CONTROL GROUP'S PRE-TEST AND POST-TEST RESULTS	43
4.5. LEARNERS' PERFORMANCE IN EACH LANGUAGE AREA:	
EXPERIMENTAL GROUP'S RESULTS	44
4.5.1. Pre-Post-test results for the experimental group in reading skill	45
4.5.2. Significance test for the experimental group's scores	
on writing skill	45
4.6. CONTROL GROUP RESULTS	46
4.6.1 Significance test for the control group's scores on reading.....	46
4.6.2 Significance test for the control group's scores on writing.....	48
4.7. SIGNIFICANCE TEST FOR THE CONTROL GROUP AND	
EXPERIMENTAL GROUPS' SCORES	48
4.8. LEARNERS' PERFORMANCE IN EACH LANGUAGE AREA	
:EXPERIMENTAL GROUP.....	49

4.8.1. Learner performance in each language area between the two groups.....	49
4.9. PRE-POST-TEST RESULTS FOR THE PARTICIPANTS IN THE CONTROL GROUP ACCORDING TO THE NINE DIFFERENT PARTS	51
4.10. PRE-POST-TEST RESULTS FOR THE PARTICIPANTS IN THE EXPERIMENTAL GROUP ACCORDING TO THE NINE DIFFERENT PARTS	53

CHAPTER V

DISCUSSION

5.1. DISCUSSION	62
5.2. CONCLUSION	68

CHAPTER VI

CONCLUSION AND RECOMMENDATIONS

6.1. PRESENTATION	69
6.2. SUMMARY OF THE FINDINGS	69
6.3. SUGGESTIONS FOR PRACTICE	71
6.4. MODEL ANALYSIS	72
6.5. THE MODEL	75
6.6. THE SHAPE OF THE MODEL.....	79
6.7. COURSE DESCRIPTION.....	79
6.8. RATIONALE.....	80
6.9. GOALS AND OBJECTIVES BASED ON THE MODEL.....	80
6.10. GOALS OF THE PROGRAM.....	81
6.11. OBJECTIVE OF THE PROGRAM.....	81
6.12. EVALUATION	81

6.13. REQUIRED TEST.....	82
6.14. INSTRUCTIONAL PROCEDURES	82
6.15. GENERAL COURSE REQUIREMENTS	83
6.16. CONCLUSION	83
6.17. SUGGESTIONS FOR FUTURE RESEARCH.....	87
REFERENCES	89
APPENDICES	100
Appendix I	101
Appendix II	113
Appendix III	114
Appendix IV	115
Appendix V	116
Appendix VI	118
Appendix VII	119
Appendix VIII	120
Appendix IX	121
Appendix X	122
Appendix XI	123
Appendix XII	124
Appendix XIII	125
Appendix XIV	126
Appendix XV.....	127
Appendix XVI.....	128

Appendix XVII.....129

CURRICULUM VITAE130



LIST OF TABLES

	<u>Page No</u>
Table 1. Pre-Post-test results for the experimental group's score.....	42
Table 2. Significance test for experimental group's test scores	42
Table 3. Pre-Post-test results for the control group.....	43
Table 4. Significance test for control group's test scores	43
Table 5. Significance test for the experimental group's on Reading.....	44
Table 6. Significance test for the experimental group's scores on Reading.....	45
Table 7. Significance test for the experimental group's writing	45
Table 8. Significance test for the experimental group's scores on writing	46
Table 9. Significance test for the control group's reading.....	47
Table 10. Significance test for the control group's scores on reading	47
Table 11. Significance test for the control group's writing	48
Table 12. Significance test for the control group's scores on writing	48
Table 13. Significance Test between the experimental and control group's scores.....	49
Table 14. Significance test between the two groups' reading	50
Table 15. Significance test between the two groups' writing skill.....	51
Table 16. The mean scores of the nine parts in control group	52
Table 17. The mean scores of the nine parts in experimental group	53

Table 18. Significance test between the two groups' part one	55
Table 19. Significance test between the two groups' part two	56
Table 20. Significance test between the two groups' part three	56
Table 21. Significance test between the two groups' part four	57
Table 22. Significance test between the two groups' part five	58
Table 23. Significance test between the two groups' part six	58
Table 24. Significance test between the two groups' part seven.....	59
Table 25. Significance test between the two groups' part eight	59
Table 26. Significance test between the two groups' part nine	60
Table 27. Gradig distribution of reading skill	82
Table 28. Gradig distribution of writing skill	81

LIST OF FIGURES

	<u>Page No</u>
Figure 1. House of Lean Model.....	18
Figure 2. Communication Needs Processor	74
Figure 3. ESP Needs Analysis Model.....	74
Figure 4. The Lean-centered Model.....	78

LIST OF APPENDICES

	<u>Page No</u>
Appendix I. Cambridge's Key English Test	101
Appendix II. Parent Consent Form (translated into English)	113
Appendix III. The Permission of Ministry of Education to Conduct the Study in Iraq.....	114
Appendix IV. School's Report to the Directorate of Education in Darbandikhan...	115
Appendix V. Some Examples of the Wastes	116
Appendix VI. The Cambridge English Scale.....	118
Appendix VII. Part One of The Test (KET).....	119
Appendix VIII. Part Two of The Test,(KET)	120
Appendix IX. Part Three of The Test,(KET).....	121
Appendix X. Part Four of The Test,(KET).....	122
Appendix XI. Part Five of the Test(KET).....	123
Appendix XII. Part Six of the Test (KET).....	124
Appendix XIII. Part Seven of The Test (KET).....	125
Appendix XIV. Part Eight of The Test,(KET)	126
Appendix XV. Part Nine of The Test (KET).....	127
Appendix XVI. Appendix I ESP Needs As Necessities, Lacks And Wants	128
Appendix XVI. ESP Needs Analysis Model	129

LIST OF ABBREVIATIONS

CX: Congruence; X refers to the ways congruence can be developed the system.

ELT: English Language Teaching

EFL: English Foreign Learners

ESP: English for Specific Purposes

ESL: English as a Second Language

K12: Levels of Education from 1 to 12

KET: English Key Test

LEE: Lean Enterprise in Education

TPS: Toyota Production System

Le2™: The Lean Program specifically designed by a practicing licensed k- 12 educator and a Certified Lean Master to meet the unique needs of education.

LEE: Lean Education Enterprise

WIP: Work in Progress

CHAPTER I

INTRODUCTION

1.1. PRESENTATION

This chapter introduces the problem of the study. It outlines the importance and aim of the study. It includes the statement of the research questions, explains the limitations and assumptions of the research. The terms and key words are defined with the abbreviations in this study. As the study is new, the background of the study in the field of education in lean is introduced in this chapter.

1.2. BACKGROUND OF THE STUDY

Lean methodology began at Toyota Motor Corporation after the Second World War in Japan (Dennis 2007, Womack, Jones, & Roots, 1990). Lean focuses on waste reduction and takes workforce to respect Ohno, Womack and Jones (as cited in Francis, 2014)

Lean in education is somehow a new realm in English Language Teaching. There are different methods of teaching English. Many techniques are used in each method to increase the achievement of the learners. Still the attempts are enhancing to utilize and find the best method of teaching and learning. Most of the studies and articles, which have been conducted before, do not deal with the application of lean thinking in teaching and learning. The studies focus on administrative activities. As lean is a process of continuous improvement, every school needs lean to increase its achievement. Ziskovsky and Ziskovsky (2011), in their book *Optimizing Student Learning*, state that application of lean in education led a very successful year in terms of learning and teaching. The students learned better and the program finished successfully as it was planned.

Ziskovsky and Ziskovsky (2007) show the results of four studies of lean in education. The first study shows that in a nine-month improvement project, it resulted in the recovery of 120 hours per teacher. Planning and scheduling were in a higher level. The students learned better and comprehensive exposure was in a good level. The result of the second study was the average of 116% of student performance scores, and the individual improvement was 343%. In the third study, reduction in the results, turn-around time and common understating were improved on the remediation in terms of limitation. In addition, it enabled the teachers to identify the weakness of the students. In the last study, the students passed the state language arts assessment test, and teaching and learning achieved 65% increase. The founder of Pawley Learning Institute Dennis Pawley states leadership commences with understanding the current state of an organization, the courage, and means to bridge the gap toward an ideal state (Brockberg, 2008). In 2006, Peters, Potter and Min ran a pilot study focusing on the feasibility and logistics of students who participated in a kaizen event at an industrial partner's facility. The perspective of the skate-holders proved that it had been successful (Peters, Potter & Min, 2008). Randor and Bucci (2011) argue that lean in some organizations contributes to broader managerial ideology, and if human resource and other managements carry out their roles, then lean is a success.

Lean, despite its original methodology, it has been used with different missions in different organizations such as healthcare and government. It has been used in government and healthcare before higher education institutions. Business schools and universities were first in using lean (Randor & Bucci, 2011). Blank (2013) also explains that lean start up is not just an approach but it is applied more and more world-widely. Clauses in lean startup are based on "build-measure-learn" (Harms, 2015).

Randor and Bucci (2011) produced a research report. It focused on five case studies to synthesize how lean was used in higher educations. They reported three advantages are experienced by undertaking lean, it creates understanding the needs to change, revise processes, and practices, which had remained untouchable for years. They stated that lean in higher education is in a nascent stage. There are many stories about lean. Some of them may not give a positive idea of it because lean inadequately has been used as it is a contrast view about lean. It brings endless

possibilities in education for improvement. When lean is a part of thinking and doing, even in a small project, the results are favorable (Flumerleft, 2008). Lean never ends once it starts. It is a recurrent cycle of Plan-Do-Check-Act. It is a scientific method that can be applied to every facets of operation in schools. People do their jobs and they try a new theory. They test to know its appropriateness. If it is good, they apply it and search for a new and better theory to implement. On the contrary, if it does not work as it is expected, they change it and test another theory. Therefore, lean is not an end quest for perfection (Ziskovsky & Ziskovsky, 2007).

Organizations will be more successful where they adapt to a continuous improvement strategy, within the improvement some progresses is made in the chosen strategic direction (Comm & Mathaisel, 2005). It focuses on the process, as there are factors that contribute wastes. They are large set up times, and distance between machines, excess level of work in progress (WIP), and large batches (Boysen & Bock, 2011). It appears that the schools try to implement lean methodology in different levels. In their study, Comm and Mathaisel (2005) stated that all schools have initiatives, which appear to be lean, some of them with very small aims but still want to do more with less. They concluded that lean practices want to eliminate duplicate efforts. It provides success in different projects and levels. Moreover, there are projects wanted to be lean but they could not manage the process appropriately as lean guides or implemented. Gadre, Cudney, and Corns (2011) concluded that lean has been changed as an adoptive ideology in manufacturing to an ideology, which ties all aspects of industries together. It is also important to know about the tools of lean and to know how to apply the tools. Womack (1990) also claimed that lean is applicable anywhere by anyone because the fundamental ideas of lean are universal.

Zhao (2007) concludes that lean is an adoptive system, which includes many continuously varying parameters. They have inner structures, goals, and relationship with other parameters. As lean an adoptive system but it should be applied very carefully, Womack et al. (1990) also state that lean has been changed in a way that the tools are no longer recognizable and Holweg (2007) concluded that it creates confusion between the scholars and the practitioners. It is very important to know how to apply the tools of lean, it is necessary to explore lean as “fitness to purpose” in the public sectors (Randor & Osborne, 2013).

The process becomes successful by decreasing the costs but also there is a cost while the employees are trained as they are taking away from their main duty Landgrave (as cited in Van til et al., 2005). Van Til, Sengupta, Flidner, Tracey and Yamada (2005) state that the effective application of lean helps to improve performances. Organizations, which utilize lean practices, invest a large amount of money and time to educate their employees as a function of their continuous improvement (Standard & David, 1999). Thirkell and Ashman (2014) stated that a senior manager at New University expressed that a framework is needed for lean and lean leadership that goes with it. People should be trained, it is operated for people to get used to it and to see the benefits. An academy at the same university understood that lean measures everything to improve the process.

1.3. STATEMENT OF THE PROBLEM

The process of teaching and learning English as a foreign language never stops in a certain point and it needs more promotion and changes to be more successful. The methods, which are used in English language teaching mostly, are traditional methods. The teachers usually have no choice to change them because of having copious subjects, which are needed to be studied according to their pre-designed curriculums. They use these traditional methods because they do not have the freedom of changing their curriculums. As students are not alike, so they need a very effective method to fulfill the needs of learning. The present study looks into the implementation of lean as an innovative method in English language teaching in a high school level in Northern Iraq. Ziskovsky and Ziskovsky (2011) state by “incorporating a value-adding approach system wide” schools can be more successful in the process of teaching and serve in effect. Schools can make the culture of success and satisfaction for all.

Flumerfelt (2008) states that once he had asked a school administrator from a top-performing school to explain the problems they face. He said the problem is not that the work is too hard or too much, the problem is that all the tricks which were used in the bag they do not work efficiently now. He said data driven decision in this regard is misused. The old instructions of the same stuff are thrown to the initiatives at hand. School-based and district-based activities should be honed to produce better

results. Flumerfelt (2008) states that schools continuously engage the educational change. The schools need to do what are needed to be done.

Francis (2014) concluded that the prospect of doing more research concerning lean education is strong because in spite of the business continuity in the sectors of higher education, it also creates new linkage with worldwide institutions in education and industry. Scott (2008) explained if the purpose of schools is not redefined clearly, it will be expected to have students who are unable to look at the problems with different perspectives that need high levels of thinking, and then it will be the damage of education and society.

Lean wants to eliminate the wastes in a process so the problems, which are clear, will be addressed by lean strategy, such as excessive inventory and excessive motions, etc., and it addresses the data, which are not important. Lean methodology is effective for improving floor space usage and clearness. It reduces cycle time of processes and creates a healthy environment (Antony, 2014).

1.4. PURPOSE AND IMPORTANCE OF THE STUDY

The purpose of the study is to prove the effects of lean implementation on education as an innovative method in English language teaching, in terms of teaching and learning and to show its effectiveness in increasing learner's achievement in learning English as a second language. This study aims to find out if students' achievement where lean as an innovative method is used can increase their success in standardized writing and reading tests.

Lean in education is a program of organizational improvement, which gives power to every worker in a school system to increase personal performance and satisfaction through process improvement. Lean eliminates the steps which are wasteful, unnecessary or do not contribute value to the work (Ziskovsky & Ziskovsky, 2011).

The results of this study is important to make practical changes in English language teaching, especially at high school levels, by implementing lean method to teach English. Further, the results can help teachers and educators better understand lean education and how the present curriculum can be adapted to see the needs of learning and teaching by eliminating the steps which are wasteful and do not add

value to the process of English language teaching. This study is also new and conducted for the first time in English language teaching field.

Scott (2008) explained that the fundamental issue of the schools should be examined and it is important to make lean more successful because lean tries to increase congruence between actions and mission. (Womack et al., as cited in Brockberg, 2008) state that lean is a superior way to make things by humans, with lower cost, which provides better products.

1.5. STATEMENT OF RESEARCH QUESTIONS

1. To which extent, applying lean as an innovative method increases students' achievement in language learning?
2. Do learners who are instructed with lean as an innovative method perform better on a standardized reading and writing test than those who are not?

1.6. ASSUMPTIONS OF THE STUDY

In this study, the Key English Test (Ket) was used as a basic instrument to measure the ability and achievement of the learners. The test was put in the reliability coefficients and it was found that the instrument was used in this research has the criteria of validity and reliability.

1.7. DEFINITIONS OF THE TERMS

The terms, which are very important in this study, are defined and they should be clear to understand while reading this study. The key terms are defined to make the aim of the reading better.

5S: the meaning of lean production, sort, straighten, sweep, standardize and sustain. They are used while organizing a work wants to be lean (Allen, 2010).

Flow: the items are processed to the next process a time. Every processing step finishes before the next process needs the item. It is also known as make one, then move one (Dennis, 2010).

Just-in-time: the name of the logistics of Toyota Production System, as opposed to lean enterprise which management, production and supply chain process are processed (Rich, et al, 2006).

Kaizen: making products continually and process improvement (Wilson, 2010)

lean manufacturing: real philosophy of reducing waste in all forms and areas continuously (Rich, et al. 2006).

TPS: Toyota Production System, implementing and logics of the lean System

(Smith & Hawkings, 2004).

Waste: things are done that use resources but add no value to the end-result (Ruffa, 2011).

CHAPTER II

LITERATURE REVIEW

2.1. PRESENTATION

This chapter starts with a review of previous studies on lean method and lean in education. Moreover, it focuses on the principles and thinking of lean as a manufacturing system. Lastly, the results of some studies of implementing lean in education will be introduced as an outcome of the study.

2.2. LEAN

Ziskovsky and Ziskovsky (2011) state that lean is an approach to forward the task in a process by removing the steps that are not necessary. It improves continuously, and elimination is the heart of lean 'Muda'. It is a term used to describe an approach which is rather-added to process management of personal and work tasks. It deals with the expenditure of time, effort, money or the resources other than the creation of value, and elimination for the things which are considered wasteful by the customers or end users. Balzer and Langer (as cited in Francis, 2014) explain that different services like admissions, hiring, and administration research funds or any functional areas which have benefitted from lean, or any multi-steps which can be simplified, also it focused on the needs of the users.

Wilson (2010) outlined one of the popular definitions of lean, it is a comprehensive set of techniques to eliminate and reduce the seven different kinds of wastes. A company by using this system and only became leaner, but even better and responsive by reducing the wastes. Another definition of lean in Wikipedia which shows that lean is the set of tools which helps in the identification and removing wastes (Muda), which is to improve quality and production time and cost production.

Shah and Word (2007) suggest that lean can be defined in two different perspectives, first philosophical perspective and the second is practical perspectives. Philosophical perspective emphasizes on conceptualization while practical perspective emphasizes on integrated management system.

Lean means working systematically to remove wastes and the processes that add no value to the process to achieve the goals with less effort. The word of waste or unnecessary work is used as an umbrella for the steps that do not give the customer value (Sonnenberg & Sehested, 2011). Wastes are divided into different kinds and they are systematically being reduced. It may be impossible to remove all the wastes but the process will be better and successful by eliminating the more. There are many steps in a process but they all add no value (Davis & Bently, 2010). Francis (2014) stated that lean needs a high level of organizational learning, also culture needs investment to make its success more sure.

Lean is a system of organizational improvement that empowers the workers from the student to superintendent to increase personal performance and job satisfaction. Its focus on the steps that add value in the process. Works people do every day have a defined beginning step and a defined end step, between the two there are multiple steps. The result is desired by someone. The 'result' is the product, the 'desire' is the value, and 'someone' is the customer. The crucial relationship between them distinguishes the lean philosophy. Lean sees process as a functional step to add value, which it is perceived by the customer, as the customer does not value what is done, why wasting time, money, and effort? The answer is "don't" (Ziskovsky & Ziskovsky, 2007).

Other institutions of higher education can learn from the successful implementation of lean. To Comm and Mathaisel (2005), the changes of higher education happen because of five primary factors;

1. Higher public expectations of what the universities deliver.
2. Parental concerns increase about the quality of education.
3. The emphasis on college ratings.
4. Higher expenses.
5. Student population concerning demographic changes.

According to Clare Cotton of the Association of Independent Colleges and Universities in Massachusetts the pressure for services became more and more. Institutions pass this cost to the students (Cotton, 2003).

2.3. LEAN THINKING

Lean thinking is shortened as lean, and it is referred to as lean manufacturing which is sometimes called lean enterprise. It might be called lean for health care or lean for government. It depends on who is selling what (Davis & Bently, 2010). Lean thinking is a management approach for creating a culture of a continuous improvement (Stenzel, 2007).

A process of five steps thought was proposed by Womack and Jones in 1996 to direct the manager, and the transformation of lean. There are five principles of lean. First, value is specified from the first step to the end user by product family. Second, all the steps are identified in the value stream, then remove all the steps that create no value. Third, facilitate the ways which add value flow so smoothly. Forth, the customers pull value from next activity. Fifth, after applying the above mentioned points, the process is reached a state of perfection and it goes on with no waste (Marchwinski, C., Shook, J., & Schroeder, 2008).

There are concerns that lean application will make the schools standardized or the jobs more 'efficient, or schools work like 'factories'. These ideas do not match the application of lean, still they refer to a non-thinking application of lean (Dobbelaer, 2010). Demin's approach (1993) 'Lean Thinking' focuses on doing more with less. It eliminates the steps which are not necessary in the process. It is a dynamic program. It evaluates and asks how a process can be done in a better way with a better outcome. On the other hand, if a step is eliminated, does it affect the value of the customer (Ziskovsky & Ziskovsky, 2007)?

Lean focuses on a continuous improvement, so kaizen is the score tenets of Lean thinking which means continuous process improvement (Kiniberg, 2011). Kaizen gives new definitions to solve problems (Peters, Potter & Min, 2008). Continuous improvement is centered on by a plan to train the workforce effectively and create a culture (Van Til, Sengupta, Fliedner, Tracey & Yamada 2005). Randor et al. (as cited in Thirkell & Ashman, 2014) stated that lean in terms of

implementation can be divided into two different types, full and kaizen type. In addition, lean is a repository which methods are chosen selectively, as Randor et al.(2013) refer to it as a type of Kaizen.

Benchmarking is also a crucial aspect in lean implementation. Benchmarking is also recognized as a tool for continuous improvement of quality (Dattakumar & Jadadeesh, 2003). Xerox Corporation is credited with the first project of Benchmarking in 1979 in the United States. Xerox was interested in Japanese manufacturing, how they produce better products with lesser costs. Xerox learned to design and produce efficiently and reduce costs by benchmarking Japanese manufacturers. Benchmarking analyzes competition. It analyzes every process and methods to assess how competitors get their position (Yasin, 2002).

Applying lean successfully relies on understanding the concepts and methods of production and knowing the distinction between pull and push system (El-Hak & Al Aomar, 2006). Different kinds of efficient workplace, value stream mapping, and Kaizen exercises are tools of lean methodology, Dennis, George, Rowlands, Price, and Maxey (as cited in Francis, 2014). Thirkell and Ashman, 2014 state that implementation of lean can be viewed in the public sectors as a social and economic ideology, which enables new forms of employee subservience.

Experts reduce lean thinking to five elements;

1. Specify value from the customer's perspective (product and service)
2. Identify the value stream and remove waste.
3. Make flow across the value stream.
4. Base production upon the pull from the customer.
5. Strive for perfection by removing waste to Womack et al., Burton and Boeder (as cited in Brockberg, 2008).

The objective of lean thinking is to remove the latter activity, which enhances the first set (Marchwinski et al., 2008). The only focus should not be on eliminating the wastes, the process can not only be improved by removing wastes because

similarly behind the wastes reducing variation still leaves (Arnhelter & Maleyeff, 2005).

Lean thinking changes the ways of production as it is run. It teaches companies which apply lean thinking to simplify information flow by creating a single point of production while it is scheduled for production, and instituting pull loops (Marchwinski et al., 2008). It taught the world to see the differences between value creating and waste (Ries, 2011). This process needs a lot of efforts as a real process of lean needs evaluating the process to rework them to deliver value to the customer. Many institutions are very old, the suggestion of changing the ways, which things have been done, is a radical change (Comm & Mathaisel, 2005).

2.4. LEAN PRINCIPLES

Lean principles evolved systematically in industry. These principles could be applied to health care quickly, as government and education are not too behind because their waste is equaled by becoming more lean and effective (Bell, 2006). First, leadership makes lean more efficient and strong. They should have clear and defined goals to achieve. They should articulate vision and goals to inspire others to embrace both. All school leaders must be committed to the program through their personal involvement in the process. Lean is a continuous improvement, but without the active participation of the leaders, it would be impossible. The second requirement of lean development is culture, which is the way we do things. Lean cannot be applied in a traditional culture, because it is to challenge the status quo. Cultures are learned habits. They can be unlearned and new habits are formed (Ziskovsky & Ziskovsky, 2007). The employees who were recipients of lean implementation acknowledged that while lean raised personal respects and empowerment, also overlooked the prospective of broader people as it is concerned with processes, tools, and techniques, wastes and general savings (Thirkell & Ashman, 2014).

The principles are in three forms, they are system, which is the process, subsystem that is about skilled people, and tools and technology.

2.4.1. System: Process

1. Customer defined value should be established to segregate waste from value.
2. Front-load the product development process to find solutions while maximum design 'space' is there.
3. 'Create a leveled product development process flow'.
4. To reduce variation, rigorous standardization is used.

2.4.2. Subsystem: Skilled People

1. To integrate development from start to finish, a chief engineer system is developed.
1. In all engineers, towering technical competence is developed.
3. 'Organize to balance functional expertise and cross-functional integration'.
4. 'Suppliers are fully integrated into the product development system'.
5. Continuous improvement and learning are built.
6. Create a culture that helps improvement and excellence.

2.4.3. Tools and Technology

1. Technology is adopted to fit the people and the process.
2. Visual communication to align organization.
3. For standardization and organizational learning powerful tools are used (Locher, 2008).

There are some words which lean development system is based on. In spite of these key words, there are some other principles that must be a root of lean process. The concepts which lean development is based on are;

1. Distinguishing between knowledge reuse and knowledge creation.
2. Performing development activities currently wherever possible.

3. Distinguishing between 'good' iterations and 'bad' iterations.
4. Maintaining a process focus throughout (Locher, 2008).

2.5. PRINCIPLES OF LEAN CONSUMPTION

1. The consumer's problem is solved by giving confidence that all the goods and services work.
2. The customer's time should not be wasted.
3. Exactly provide what the customers want.
4. Providing the needs exactly where it is wanted.
5. Provide what is wanted exactly when it is wanted.
6. Reducing customer's time and hassle by aggregating solution continually (Lean Consumption, 2017).

Lean principle may not work in public sector service as they do in private sectors of manufacturing. Public organizations try to implement lean which does not engage the version of Womack et al. (1990). Randor and Osborne (2013) argue that these are the reasons that make the UK failure in implementing lean in public sectors to achieve the desired outcomes.

2.6. STAGES TO IMPLEMENT LEAN

A journey with four stages of lean implementation fills the gap. They are explained here to show how to navigate lean leadership learning (Brockberg, 2008).

Grand Zero: Searching, you are realizing and searching for answers to perplex dilemmas like increasing demands for public accountability, reducing resources, or new competition. In lean thinking for School Introductory Seminar Participants complete Tier 1- participants learn.

Lean is not a set of tools, nor principles or value stream maps. It is not the satisfaction of the customer. It is how everything works together, also lean is not implemented, but it is a journey, Flinchbaugh and Clarlino (as cited in Brockberg, 2008).

At this stage, leaders make divisions with this background knowledge to become full partners with the institute. Then they are ready for the next three stages.

Stage One: Initiating, leaders begin to teach their personal distributing the Tier 1 Survey in a 360 manner to those with important responsibilities. The Tier gives a snapshot of the state of the organization. Flinchbaugh and Carlino (as cited in Brockberg, 2008) explain that even the decisions are made by the leader, but it does not have unilateral determination which area to tester incorporate with the lean tools.

The leader focuses on one or two primary needs emerging from the Tier 1 survey as a beginning accept, it is called 'unlinked islands of lean operation techniques'.

Stage Two: Training, the enterprise moves forward with a strong appetite for lean after the successful institution of one or two facets, Flinchbaugh and Carlino (as cited in Brockberg, 2008). Training arms the personal in the organization with local success at this stage, which links these successful areas with the sequence lean tactics. Balle and Belle (as cited in Brockberg, 2008) state the communication strategies embrace the objectives of lean performance, are in motion through the Tier 2, then employ lean tools in the areas need improvement.

Stage Three: Sustaining, at this stage the organization is enough strong to bear any persons, processes or problems with trained personnel.

The existence of waste cannot be seen easily. By strong goal orientation and observations, they are possible to be found and identified. It is also important that the most effective waste cannot be sorted out Robinson (as cited in Brockberg, 2008).

Levin and Redric (as cited in Brockberg, 2008) used the word 'friction' as a Japanese term for waste. Tier 3 survey pushed the organization to more success, suppliers, friends, customers, friends and others beyond the four walls of the organization for date that show the real state of the organization, waste and its performance.

2.7. LEAN MANUFACTURING

The very clear aim of lean manufacturing is creating more value with less work and zero waste. Therefore, efficiency is the aim, which is desired to be

achieved by the methods, and principles are connected with lean manufacturing, this is called lean production or lean for short. Through the system, flowing materials and information is facilitated by the focus of methods. Dating back to history, some of the methods of lean are originated from the father of industry and engineering Fredrick Winslow Taylor. Toyota production system was developed by Taiichi Ohno and others at Toyota, based on the ideas of Taylor, Henry Ford and others (Allen, 2010).

Womack et al. (as cited in Ward & shah, 2007) state when Toyota realized that mass production did not work very well, they developed a version of lean. There were two limitations in their mass productions. First, employees were disengaged since they focused on doing the repetitive tasks. Second, it was full of wastes and the level of waste was high.

Brockberg (2008) stated that Dell company produced 80 000 computers in 24 hours as a lean enterprise. Dell jettisoned its unnecessary and expensive operations more than a decade ago, Breed (as cited in Brockberg, 2014). Womack and Jones (ibid) make it sure that lean will be successful when it is implemented in a comprehensive way. There is learning from good thinking and application in lean manufacturing, which can be used in education. If the conceptualization includes the approaches of top-down mandates and standardization, it will be inaccurate (Flumerfelt, 2008)

In 1937, Toyota was founded by Kaiichiro Toyota to advance his company as he studied the ideas of Henry Ford and W. Edwards Deming. The result was the creation of TPS from 1948 to 1975 by Taiichi, Ohno, Shigeo, Eiji Toyota and others (Allen, 2010). Toyota production system is known as lean manufacturing. ‘Just-in-time’ is originally used to call the system, now only referring to production manufacturing (Shingo, 1989). Womack (as cited in Allen, 2010) stated that lean manufacturing and Toyota Production System used manpower and the hours of work four times lesser than the corrupted version of the United States were used in 1980s in some manufacturing plants.

There are four methods in lean manufacturing. The methods are process mapping, 5S, Kanban, and Poka-Yoke.

5S words, all were coined by Toyota. They are all Japanese words.

1. Seiri (sifting)
2. Seiton (sorting)
3. Seiso (sweeping)
4. Seiketsu (standardize)
5. Shitsuke (sustain)

The first one, Seiro, means clearing the area of those items which are not used regularly. The needed items are separated from the clutter. Those items make the work easier, easier to move or improving utilization of space.

The second is Seiton, arranges and identifies the items in the area. In that area all the items should be labeled if the items were not very or enough important, there are not labeled in the area or stay in the area. Therefore, the recognition of suitable tooling, resources, materials, etc. will be clearly visible. The third one is Seiso, focusing on a clean and neat production area by sweeping and picking up regularly, for example daily, biweekly at the end of every shift. This using could be accomplished less than 2% (ten minutes) of the scheduled time. Seiketsu is the fourth one. If the activity remains standard, then the place stays cleaned. The employees will go back to the old ways and the area will not be cleaned if the activities do not become institutionalized during the process. Therefore, Seiketsu is about management discipline. The last one is Shitsuke, it is the responsibility of management to support and make the importance of housekeeping also to show leadership by follow-through and walking the talks (Feld, 2001).

In management process, Kanban is used. It is a Japanese word, which means signboard. It was developed by Ohno to control production between processes and to do Just-In-Time in production. To decrease wastes and utilization of machines, Kanban is used by Toyota originally. It is even used for a continuous improvement (Gross and McInnis, 2003).

Lean arranges the process effectively, and process mapping is a tool of lean to lay out the steps of the process visually on the paper. There are some kinds of

mapping. Process mapping is one to arrange the steps represented with the use of symbol labels. Value stream identifies where value is added. Spaghetti map shows the movement while the process is carried out (Ziskovsky & Ziskovsky, 2011).

Barney and Kirby (as cited in Brockberg, 2008) conclude in their RAND review that focusing on the value stream, standardization of jobs, and improving the workers are very crucial because they provide more implications for improving educations.

Poka-yoke is a group of techniques, limited by the imagination of the engineer. The purpose of it is to get error proofing from the activity of a process and make the process robust (Wilson, 2010).

Barney and Kibryas (as cited in Brockberg, 2008) state that the key to success of TPS/Lean production is the dynamic interaction of all three of those principles, leading to a coherent organizational wide system in which problems are dealt with at their source, on the lowest level possible, and with connections and immediate objective feedback,

2.8. LEAN METHODOLOGY

It is important to show the differences between lean method and methodology by using social sciences (Francis, 2014). Creswell and Clark (2011) state that methodology is the philosophical assumptions which leads to the direction of the collection and analysis, while focuses on doing the work. Lean methodology has been explained in many ways. One of them is the 'house of Lean', which is adopted from Dennis (as cited in Francis, 2014).

Figure 1. House of Lean model

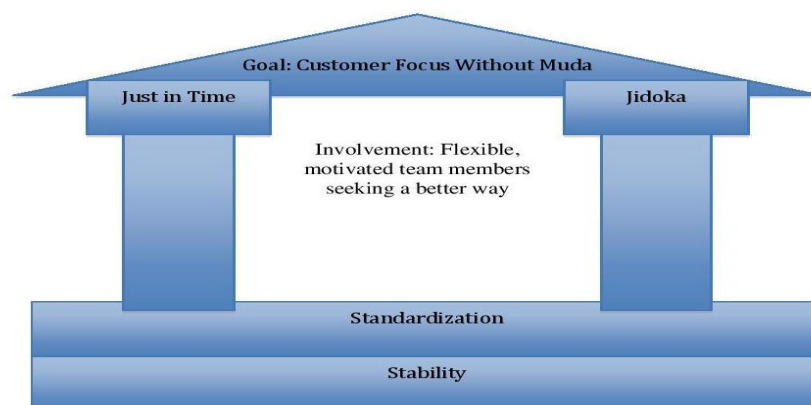


Figure 1. House of Lean model (adapted from Dennis, 2007)

Its methodology is the base of the house through the center. The methods had 'just in time' and 'Jidoka' on each side. 'Just in time' represents control on inventory waste. 'Jidoka' represents the activities of the workers and machines to eliminate errors. The roof is to understand the value from the view of the customer and eliminating wastes 'Muda' in Japanese, while the core is the flexible moment of all employees.

Lean foundations lie in the Socratic Method of questioning, developing hypothesis, and data-driven analysis in the scientific method of Henry Ford to empowering people, and an organizational world was created through the process of continuous improvement principles by Deming (Ziskovsky & Ziskovsky, 2007).

2.9. TEACHING AND LEARNING

Ellis (2012) states that all the methods of teaching English should be reviewed more and more because they take a great role in different institutions. He said the methods are a very mixed branch. The different kinds of methods have been investigated and they are changed from the different institutions. Poulsen (as cited in Karnes & Bean, 2002) states teachers should take the role of leaders to help their students become self-directed learners. They must take learning as their primary function; they must learn how to learn and how to create a very efficient environment of learning. In an environment where the students are considered as unique learners, it helps to grow a positive self-concept naturally. It makes the students to learn responsibility and have an inner sense of control while sharing responsibility, self-evaluations are planned as a part of their day, Hunt and Seney (as cited in Karnes & Bean, 2002). Lean is a liberate program, it is not accomplished by doing more work for school employees. It allows the workers to use their genius to improve the job more efficiently. It supports those who perform each process to remove wastes (Ziskovsky & Ziskovsky, 2007).

Richards (1990) explains that there are many literary works on second language teaching, the methods of teaching, and design of teaching. Mostly when it is assumed that learners do not learn properly, it is said the causes are materials, teaching methods, and teachers. In a successful education, there are many different levels such as planning, development, and implementation. Methodology is those activities, tasks, and learning experiences, which are chosen by the teacher so as to

achieve learning, and how the teachers use them in the learning process. They are justified by the objectives, which the teacher has set out, or by the content, the teacher uses to teach. Flumerfelt (2008) explains that there are many poor institutions of lean because they do not provide an appropriate culture of learning. Lean needs a good environment to be highly successful.

The process of teaching and learning English language involves various elements and principles. On the other hand, because English language is taught to a group of students, their needs should be taken into consideration during constructing and applying syllabus, tasks and methodology (Laborda, 2011). One of the important aspects related to the teachers is the teacher's guide. This guide could be in the shape of a handy guide or handbook and should include all vital program information so as the teachers refer to while they have questions (Brown, 1995). Every factory or school can be successful in the application of lean and it is not difficult if they start with a blank slate (Flumerfelt, 2008). For some teachers using specific English course books enable them to teach directly and effectively while for some others designing special courses are more preferable (Yalden, 1987). Lean cannot be successful if it is considered as an application only, this is because lean is not a set of tools or an application only. Lean is 'a system of an organizational learning journey' (Flumerfelt, 2008). As the culture plays an important role in lean program, McDonough et al. (2013) state that setting can be regarded as another aspect of context. Setting is generally referred to the whole teaching and learning environment. It includes the factors such as the role of English in the country, the role of English in the school, the teachers, management and administration, resource available, support personnel, number of students, time, physical and sociocultural environment, tests, and procedures.

Freeman (2000) states teachers are free to choose the methods they want with focusing on their context, because each context needs a kind of methods. What the teachers do to teach the learners is pedagogy. Methods are in form of integrate which consists of theory (the principles) and practices (techniques). Richards and Renandya (2002) state methods will fail if they just focus on a small part of a set of a complex element in the process of teaching and learning. Ellis (2005) states that written and spoken language which appears that happens automatically, they also need planning. Planning primarily solves the different problems in the activities. In different levels,

planning takes place such as discourse, sentence, and constituent plans, Clark and Clark (as cited in Ellis, 2005).

Methods also have a great role in teachers' endeavor in teaching. Freeman (2000) states that when teachers meet methods and are asked to apply them on their principles with their techniques, then they can give their messages more easily. The majority of the teachers in the high schools still follow grammar translation method in their teaching style, Malla, Awasthi, and Shrestha, (as cited in Bista , 2011).

Met (as cited in Ayşe Kizildağ, 2009) states to start with the role of language teachers, the teachers should be skillful enough to master and monitor student performance and expert, in instructional designs lean respects the individual's knowledge and contribution, it is a respect based program. There is growth for both teachers, staff and the students learn and improve. Lean is more proactive than reactive, and it seeks to prevent rather than to solve (Ziskovsky & Ziskovsky, 2007). Students should like the materials they study; it should be useful when the students are involved in interaction. The materials should give the students a high motivation in learning (Laborda, 2011). Many things have been written about lesson plans. De Geus (1997) states that planning is also important as learning (as cited in Francis, 2014).

2.10. ORGANIZATIONAL LEARNING

Senge (1990) defines learning organization as a group of people working together to make their capacities stronger and better to achieve what they care about, Fulmer and Keys (as cited in Francis, 2014). Senge (ibid) stated the disciplines which are needed for leaning organizations. They are system thinking, personal mastery, mental models, shared vision and team learning. Levitt and March (1988) define organization learning as 'routine-based, history-dependent, and target oriented', p. 319). Bolman and Deal (as cited in Francis, 2014) point to the tension between individual and learning organization, they focus on the system models of Senge, but still they caution that it is hard to sense the relationship between individual and organizational learning.

Flumerfelt (2008) states that lean is appropriate as an organizational learning journey. It is applied in a culture while leaders focus on three main ideas. First,

engaging stakeholders in a continuous organizational learning focuses on improvement via the value stream and the elimination of wastes and its roots. Second, to maximize organizational learning and effective results, stakeholders are enjoined. Third, a great respect is displayed towards those who are involved in the organization, like stake holders, teachers, and leaders.

Learning organization is very hard to be defined because of its divergence, (Garvin, 1993) systems (Senge, 1990) or irreconcilable (Kim, 1993; Simon 1991). It has more attention of its organizational processes, because of the tension between individual and organizational learning (Antonacopoulou, 2006; Bolman & Deal, 2008). Community and social aspects are needed to last organizational learning, Brown, Deguid, and Wenger, (as cited in Francis, 2014). To enable the process and to focus on a comprehensive system of organizational development and learning, such as lean production is for the automotive industry (Pascal, 2007), it would help to contextualize a continuous improvement by including processes, protocols, languages and activities. Lean production gives a good modal of organizational learning for schools. Schools are in a good position to consider lean thinking and applications. It is easy to build organizational learning with implementing lean, specifically as a system for organizational learning is clearly ambiguous for schools (Flumerfelt, 2008). Francis (2014) explains that organizational learning lies at the heart of any successful lean implementation.

Learning organization does not exist until there are systems of management to record all the points of learning (Dennis 2007). Flumerfelt (2008) informed that also lean is misused by leaving out the 'hard' part of it when it is applied, and shared thinking is required for lean success. Deming (as cited in Francis, 2014) notes that a good team has a 'social memory' . He said this while painting for success in learning organizations. Senge (1990) stated that systems thinking are a very important link between lean and learning organization, and he declares systems thinking as a foundational key. In this model, he presented the four disciplines, they are continual mastery, mental models, shared vision, and team learning. Lean methodology is based on some concepts, which are in connections with systems, and system engineering so seeing it as a foundational key is not something very surprising.

Francis (2014) concludes that lean methodology and learning organization are linked through methods and philosophies. He gives recommendations for those who implement lean in higher education institutions or other institutions:

1. Executive leadership; executive sponsors should understand the complexity of lean and learning organization fit it with short or long term goals. They should instantiate the improvements and know when they should back off, then the organizations will improve them, providing a culture of trust that is a primary objective to enhance the initiatives.
2. Training and development; significant training are involved for staff in lean implementation. Training should include organization learning philosophy and information about how to integrate lean with this, also visualization is important to depict the understanding of lean and learning organization.
3. Knowledge management; Lean implementation gives an opportunity to consider the organization handlers the knowledge of management, from easy efforts to difficult efforts.
4. Information technology- IT system should be utilized to ensure creative options and information sharing for collaboration and the sharing of the result. IT leader should remember that Toyota has made their method for decades freely out of the company (Womack & Jones, 1996).
5. Project governance- external consultants are employed to start new lean initiatives and also to expand the existed ones.

2.11. EDUCATION

There are many new ways of thinking about education. Different thinking shows different outcomes. They may translate into improved practices slowly or quickly, or they may not. They may do little more than the old ways of doing things (Jackson, 2012). For delivering an excellent education, highly qualified teachers should be put in every class. As public schools invest more money, they should serve the students better (Wolk, 2011).

Education is not the same as schooling and much of our education is taken place in schools. Schooling is a circumscribed one, even it may be supervised or a

conserving activity. To the young, school is relentless, but our education is not relentless which gives us no rest for good or ill (Postman, 1995). At the beginning of the nineteenth century, there were ideas, which stood against the idea of education. For some, education carried a threat rather than promise (Sutherland, 1971). Popular ignorance was preferred rather than popular learning to maintain social order and national prosperity. It was a view, which became stronger with every passing new year, within two or three decades it was extinct (Bridges & McLaughlin, 1994). Through the rest of the century, “the ride of schooled society” was assured (Wardle, 1974).

Biesta and Tröhler (2008) believe that the purpose of education is not to evoke response from the learners, but it is for communicating meaning. The question of how the responses of the learners are organized is raised. Moreover, the purpose of education for Mead (1910), it is not to organize the response of the learner but it is to facilitate the emergence of what Mead (1910) calls it consciousness of meaning. It is the difference between the artifacts we use and what these artifacts mean. Then, this makes thinking possible. Because of this, Mead stressed that education is a social process. Education does not present the learners with artifacts just like books and materials. Learners respond to these artifacts and in doing, that gives meaning to them, but the response and the meaning will be idiosyncratic.

Dewey’s Parting Words (as cited in Jackson, 2012) states that the main question of the nature of education with no qualifying adjectives prefixed, simple and pure education are needed. There should be large steps of improvements when it is realized what is education and what conditions have to be satisfied because education may be a reality not a slogan. For Mead, education “is a process of creative (trans) formation of meaning,” p. 6, Mead (1910) also believes that education is a social interaction (Biesta & Tröhler, 2008). Bridges and McLaughlin (1994) conclude that elementary schools were compulsory in 1880 and became a crucial element of life. However, as the question was resolved, it was replaced by many other questions, so it was a matter of conflict for the last 150 years.

Monfils, Schorr, Hicks and Martinez (as cited in Wolk, 2011) state that one view is that educational systems are loosely coupled that the teachers depend on their beliefs and preferences, Firestone. The current education system is designed for

standardization. Real progress can be made when it is realized that the problem is not with the performance but with the design (Wolk, 2011).

Lack of good performance explains why education sector is behind other sectors. There is not a clear relationship between schools and teachers performance, incentives, and rewards, which are offered. It is believed that innovative teachers are the keys to student achievement, but the structure of incentives work to constrain them (Hanushek, 1994).

2.12. WASTES IN EDUCATION

Education is a hot topic in the light of current economic crisis and the needs for a successful and production citizenry (Ming, 2008). Many organizations have challenged to do more with less. Ziskovsky and Ziskovsky (2007) state that the successful organizations became successful focusing on a continuous improvement. This process of doing more with the minimum resources has been nicknamed as 'Lean' by the researchers at Massachusetts Institute of Technology. Lean does more with less existed resources. There are nine wastes in education. Waste is anything that does not add value to the process. Ziskovsky and Ziskovsky (2011) state that the wastes in education are:

1. Overproduction/ effort: the generation of more information than it is needed at the time, doing it again is not needed or it can be unwarranted changes that are not a part of the process improvement. It also can be doing something, which it is not needed; just wasting time for another needed activity.
2. Talent: the failure to recognize or develop in placing a person where they use their skill, ability or knowledge to their fullest to benefit the organization. It can be underutilization or overutilization of the people's skills.
3. Motion: any movement that does not add any value. Physical or electronic movement and transporting people and items, which don't add any value.
4. Time: actions, people and information create idleness when time is used unwisely, such as doing work versus playing games.

5. Processing/handling: doing activities which are needed for the end result to be accomplished, unnecessary steps, requirements, reviews and approvals which are mandates but are not necessary.
6. Assets: using more resources, books, people, money, inventory, facilities or information than is needed.
7. Capacity: “the failure to realize full potential and experience its benefits.’ Capacity is measured at both individually or at organization level. In education, the waste of capacity means not using the full abilities of the students, teachers and other staff to achieve the best educational outcomes.
8. Knowledge: ‘the re-creation of already existing knowledge.’ This affects students, teachers and other staff. Waste of knowledge can be poor planning, organization, and communication of information. It could be incomplete mastery of curriculum, redundant or omitted courses or ‘restricted possession or needed information by certain groups’.
9. Defects: ‘human errors, honest mistakes, or any number of things that led to work that contains inaccuracies, omissions or requires that it be done again’.

Researches have shown that 80% percent of the steps are unnecessary which are done to achieve the desired output. It means the time and resources which are wasted, can be saved and used in other processes. The view of end-user is very important, it identifies, reduces, and eliminates what does not add value. The remains are value, so lean method seeks to continuous improvement. Waste is never planned but it happens. People say no one is perfect but they hardly could improve. The reality is no one is perfect but everyone can improve. There will be never a time that wastes does not exist (Ziskovsky & Ziskovsky, 2007).

2.13. LEAN IN EDUCATION

Schools and school systems are organizations which the workers depend on complex processes to accomplish their tasks and give value to the costumer. Students are struggling with the systems that do not fit or give their needs. The Rand Corporation (2004) concluded that “Lean Process Improvement offers educators the most powerful improvement and accountability model available to meet the

challenges of the 21st century.” The RAND study called for to adopt Lean Process Improvement Principles and get the benefits and results as the other educational industries have realized. LEE responding with creating Le2™, it has been designed by ‘practicing licensed k-12 educator and a Certified Lean Master’ to meet the needs of education (Ziskovsky & Ziskovsky, 2007). The students improve properly as Ranky, Kalaba, and Zheng (2012) state that the students who participate in their own learning became more self-critical.

Lean is not the only system to solve the problems of education but its tools and philosophy are useful in education (Flumerfelt, 2008). Teachers negotiate that tests like high-stakes-tests narrow the curriculum content in a way the teachers focus on the subjects included in the tests, this resulted in the fragmentations of the knowledge. The teachers cannot use the teacher-centered pedagogies (Sarra Dobbelaer, 2010). Different tools are used to analyze systems, such as CX lean which is used for analyzing any new system. 'C' stands for congruence ' or ' equal state' and X refers to the ways congruence can be developed in the system. It employs the Plan-Do-Check-Adjust. It is a foundational concept of lean, and CX identifies two areas, organizational intelligence and performance management (ibid). Francis (2014) states that there is no success for lean implementation without an accommodation and understanding of culture and subculture which they serve. A main key to make methodology and methods of lean at Toyota possible is a culture of innovation. Lean is overlaid into the present culture by providing thinking, planning and developing of organizational learning.

Educational leaders would say that Lean as a manufacturing system is not possible for education, they would be right if they do not consider students, and schools are not manufacturing facilities (Flumerfelt, 2008). As Bill Gates says “Training the work force of tomorrow with the high schools of today is like trying to teach kids about today’s computers on a 50 year old main frame. It’s the wrong tool for the times.” Educators agree that the students who leave the school because they think that the system is boring, it does not touch the real world, or just wastes their time.

Houston (2008) states that now higher education concentrates more on improvement rather than accountability, and lean methodology is a central strategy

for improvement. Balzer (2010) published *Lean higher education*; increasing the value and performance of university process. He showed where the process breaks down when wasted material or time exists. He insists that lean is suitable for improvement.

Ziskovsky and Ziskovsky (2007) state lean allows the educators to perform better. To get an idea of what it means, ask these questions regarding your job;

- What things keep you from doing your work?
- What is something you should not have to do?
- What would make your work easier?
- What would make your work more satisfying?
- What would improve the skills and capabilities of those who work for you?
- What would improve your work environment?
- What would make you more successful in your job?

Comm and Mathaisel (2003) in their paper they showed that universities compete for a global region rather than regional by increasing the response of lean. Just like Balzer (2010), they refer to value stream mapping to analyze the areas, which are improved via lean methodology. Comm and Mathaisel (ibid) explained a lean enterprise sustainable framework adopted from Nightingale (1999), they are based on operating principles, 'degree of Leanness; specific Lean improvement, initiatives, and best practices (including collaboration and outsourcing); factors that encourage or discourage lean operations; communication of best practices; and the application of overarching principles'. They include that the use of metrics and analyses of students are essential to direct a successful learning organization since public expectation have been changed from accountability to improvement. Comm and Mathaisel (2005) have published two articles. In the first one, which conducted at some universities in England, they argued there were no measurement techniques in post-secondary education. They surveyed to obtain opinions about lean implementation from administrators. They realized that at some schools, the

improvement projects are not referred to lean initiatives but technology has significant impact on the improvement.

Finn and Geraci (2012) published a research of four universities in England. Lean initiative was to reduce financial affairs the executive-leaders were concerned about. The result was really good. It enabled them to save time and resources, dependent employee relations and satisfaction level, and the accuracy of process increased.

Emiliani (1998) stated that if lean is applied correctly, it results an organization to learn. Bowen and Spear (1990) explain that TPS is a kind of system, which helps the workers and managers. It puts them in experimentation, which is the cornerstone of a learning organization. They conclude that is why this company is different from the other companies they have studied.

Flumerfelt (2008) states it is a mistake for educators to dismiss lean without understanding it, lean may be a base for the school business partnership, rather than the one way of business, the schools suffered in the past. Problems in schools, inadequate funding, lacking organizational learning, and ineffective remediation provide a good opportunity for lean thinking and applications. Response for those culturally diverse students who are at risk in education has been the mindset of remediation, 'let's fix these students' learn opposes to rededication and 'supports in its place intervention of process'. What is proposed in lean is not to fix the people but the root of the problems. Lean problem solving focuses on improvement and the people involved in the system of improvement "let's fix the processes that do not work for these students!" Lean is very helpful for those students who are in shortcomings of education. Therefore, there is an answer for the question: "Yes, but lean has to be understood as a system and implemented with clarity!"

CHAPTER III

METHODOLOGY

3.1. PRESENTATION

This chapter describes the research design, its participants and procedures to collect and analyze the collected data of the study. Reliability and validity of the instruments will be presented.

3.2. RESEARCH DESIGN

The current study was conducted using a quasi-experimental study. In this study, the dependent variable was the learner's performance in a specific standardized reading and writing test. Campbell and Cook (cited in Barker et al., 2002) stated two different kinds of design, the first classification of different kinds of validity. The second is about the analysis of quasi-experimental designs. An experimental design is a plan to assign participants to conditions, which are experimental, and the statistical analysis is connected with the plan (Kirk, 1995). Experimental designs can be applied in different ways as de Vaus (2001) explains that "experimental designs can be implemented in three different ways: in a laboratory, in the field and by utilizing natural occurrences", p. 56. Experimental design can make the researchers to achieve high levels of control, especially on a small scale and manipulate conditions, at the cost of complexity and a level artificiality (Bechhofer & Paterson, 2000). The design of researches is classified into two different kinds, experimental and non-experimental study. In the experimental study, the researcher has an active intervention or manipulates the study. Experimental design is divided into randomized and nonrandomized designs (Barker, Pistrang & Elliott, 2002).

Behar and Borkovec, (as cited in Schinka, 2003) state that in experimental investigation, the control group is employed in the study design to control the variables other than the variable which is under investigation, and it may cause changes in the participants. Kirk (as cited in Schinka, 1995) explains that experimental design is about the interrogation of nature, as nature is unwilling to uncover her secrets,. Quasi-experimental study is defined as “experiments that have treatments, outcome measures, and experimental units, but do not use random assignment to create the comparisons from which treatment-caused change is inferred, p.6” Cook and Campbell, (as cited in Braker, 2002). The words “experience and experiment” has the same root, as they are derived from Latin for test or try (Barker, Pistrang & Elliott, 2002).

In experimental and quasi-experimental study, the learning environment consists of independent features that the researcher can manipulate and control it very easily, Cobb and Gravemeijr (edited by Kelly, Lesh, & Baek, 2008). The independent variable of the study was the exposure of the students to the lessons as they were designed according to lean as an innovative method to increase learners’ achievement. The selection of the control and experimental groups was not in a random. To test the impact of the study, this research uses assembled classes. The participants were given pre- and post-tests to find out and examine the use of lean as an innovative method in education to increase the achievement of the students, and finish the curriculum on time.

This experimental study was conducted at a high school level in Northern Iraq. The test was used as a pre-posttest, it is Cambridge’s Key English Test (KET), which is a proper test and is an appropriate level to A2 level according to the Common European framework of Reference (CEFR) (Cambridge English Preliminary, 2012).

In this study, the participants included two groups of students i.e., one experimental group and one control group that were taught using lean as an effective innovative method with the focus of eliminating the nine wastes in education, as Ziskovsky and Ziskovsky (2011) refer to these wastes as overproduction, talent, motion, time, processing, assets, capacity, knowledge and, defects.

Sunrise is an English course, which has been written specifically for primary and secondary school students in Northern Iraq. The course has a communicative approach of teaching, integrating listening, speaking, reading and writing, with an apparent emphasis on grammar structures. It helps learners to develop and improve their English through a fun method to learning, having motivational topic-based units, adventure stories in the books that introduce new language, different activities including role-plays and guided writing tasks.

3.3. CONTEXT

As the study was conducted in a preparatory school, all the participants were from a coeducational school. Public education In Iraq is divided into two different levels, basic and preparatory education. The students must study and finish basic education because it is compulsory for every individual in the country to study this level of education. It starts from 1st and proceeds to 9th level, and preparatory education for learners includes from 10th to 12th. English as a subject is taught and studied in the all levels of primary, secondary and preparatory educations. In the preparatory level, students attend schools all the weekdays except for Friday, so according to the context and schedule of the school, English is not studied in one day. Learners have five lessons every week and each lesson is 40 minutes. Another language the students study at schools is Arabic.

All other subjects are taught in the native language of the learners. Therefore, the English lesson is the only opportunity and chance for the students to have contact with English language and communication in an effective way. However, the possibility of interacting English and the exposure of the students cannot be overlooked as internet such as social media plays an important role in the life of every student.

3.4. PARTICIPANTS

The participants of this study were 11th graders at high school level, studying at a coeducational preparatory school in the Sulaimaniyah province in Northern Iraq. The participants were from two classes in a coeducational high school in Darbandikhan city. There are some important reasons for choosing and conducting this research site. First, this school had regular number of students in their classes

and was not overcrowded like other schools in the same city. Second, the school's principal provided facilities to conduct the research, which gave easy access to both the students and their parents for consent purposes. In this study cluster sampling was used. In cluster sampling, the researcher needs to visit schools within the selected area. The researcher also has to choose the clusters carefully (Dawson, 2002). Dörnyei (2007) states cluster sampling is a way to make the random sampling more practical when the population is dispersed, to select larger groupings of the participants. It is possible, for example, in schools to examine all the learners in the selected area. Cluster sampling is appropriate when the population of interest is boundless, and the distribution of the individuals geographically dispersed. It involves groups rather than choosing the individuals in the population. The clusters are naturally based on groupings such as specific institutions or geographical areas.

There were 28 students in the experimental group and 28 students in the control group. All of the students were from the Northern Iraq region and from the same city. The students were between 16 to 19 years old. There were 16 girls and 12 boys in the control group, 15 girls, and 13 boys in the experimental group. In the control group, most of the students had scores below 40 out of 60 in the pre-test except for some, whose scores were over 45. In the experimental group, also most of the students had scores below 37 except for some students whose scores were 45. Since students with different scores such as low and high marks were present in the scores, it can be proven that the findings of this study are more suitable to the all participants of the study.

3.5. PROCEDURES

To conduct the experimental study and start the research, written permission was obtained from the General Directorate of Education, in Darbandikhan city in Northern Iraq. Since the research was experimental, the steps of applying lean as an innovative method previously developed and arranged appropriately by the researcher and the research supervisor. Details of this process were described in the section "materials". Lean methods and steps used in this study were applied on Sunrise Student and activity book, 11th grade. The steps were mostly taken according to the book of Ziskovsky and Ziskovsky (2011), and applying lean as an innovative method with extra techniques and procedures of the same method by

other writers and institutions. Lean as an innovative method and techniques were only used with the experimental groups, as the study was experimental. The control group was taught without getting any guides from lean or making any changes.

In preparatory education in Iraq, most of the schools give courses to their students. The courses are three months, the students who attend these courses have passed grade 10. The students study the subjects as they will be teaching next year. These courses are arranged by the directorate of education in the district. The courses are not mandatory. The study went through different stages. First, it was explained for the students why this research is conducted and the researcher was asking them to join in. Second, lean was introduced to the students in detail. Most of the students were under 18 years old so their parents' permission was obtained prior to starting the study. The next step was to tell the students of the experimental group that they study four English lessons every week based on lean methodology. It was explained that it is being applied on Sunrise Student Book and Sunrise Activity Book 11th grade, also emphasizing on the time as this study lasted for three consecutive months, and every week they took four lessons. Each lesson was 40 minutes.

The next step of conducting the research was applying the KET reading and writing test, to all groups, the experimental and the control groups to obtain data for the pre-test. All the candidates or students with the examiner required for taking the reading and writing test. The researcher acted as a proctor and verifier to verify the test papers and assess them. The researcher was the English teacher in the field who took no part in the exam except monitoring but giving instructions.

The treatment period of the research lasted for three months. The participants spent four lessons of 40 minutes every week. The groups were studying the lessons on the same day by the same researcher. In the experimental group, the researcher recorded the lessons especially the nine wastes in education by Ziskovsky and Ziskovsky (2011), the nine wastes are:

1. Overproduction: such as more information than the parent, student or staff member needs, more information than the next process requires, creating reports no one reads, making extra copies, requiring curriculum that were not needed, and not offering what is needed.

2. Talent: such as must wait for management before can make a decision on basic tasks, professionals doing non-professional tasks, under or over utilization of people's skills, not soliciting or listening to other ideas.
3. Motion: Searching for, storing, retrieving files, extra computer clicks or key strokes, taking files to another person, going to get a signature, searching /looking through manuals and resources for teaching aids, handling paperwork, moving resources between building.
4. Time: such as waiting for the system to come back up, copy machine, faxes, parent/student/staff responses, and a handed-off document to come back.
5. Processing: unclear directions or expectations, repeated manual entry of data, use of outdated standard forms, use of inappropriate software, and creating reports no one reads.
6. Assets: files waiting to be worked on open projects, office supplies, unread e-mails, and unused/inadequately used facilities.
7. Capacity: students who fail to dream, set goals, learn, and experience success. Students who do not understand how, they learn, students who see no value in school, non-mastery of assigned curriculum, various unresolved challenges, problems, or abandoned opportunities "Can't" or "we've always done it this way". Environments, negative school/community growth, significant population that relies on, community rather than contributes to it, burned out, disheartened staff, and loss of student population through open enrollment.
8. Knowledge: going through training you have already had, after searching and finding information, recalling you already knew it, re-teaching previously taught curriculum, and creating a new report when the data exists in a different department or format
9. Defects: data entry error, corrections, failure to meet scope and sequence targets, missing information, lost records, missed specifications/requirements, and learning mastery deficiencies

These wastes were introduced to the participants of the experimental groups in order to give the same chance to all individuals to understand lean. Prior to

starting the process, all the lesson plans and materials to be covered, were prepared by the researcher according to lean method. The lesson plans showed what had to be done in the three months of the study. The final step of the study included the post-test for all the groups, it was taken as the pre-test after finishing the period of the treatment, using lean as an innovative method. The collected data were put into the computer program Statistical Package for Social Science (SPSS 24) and analyzed. In the “data analysis”, the data were discussed.

3.6. MATERIALS

Sunrise Student Book and Sunrise Activity Book were used to teach the experimental group with lean implementation as an innovative method. Salli (2005) states the adaptation strategies, by omitting, modifying and recording, then sunrise were taught, as there were omitting and re-ordering. Those strategies were needed to make the process of applying lean more effectively. To apply lean on the Sunrise books, adding, omitting, modifying and re-ordering as adaptation strategies were used. As illustrated in the first unit, some of the strategies were used.

All the applications and the activity changes were carried out according to the Lean System and Methodology. The instrument used in the data collection was the KET test (see Appendix I). As it was explained before, it was a reliable test to use in the study. The reason for choosing and using this instrument was that the level proficiency of the test was very suitable for the students of 11th grade in the region. Therefore, the KET test consisted of two main parts and there were overall 56 items. The items were divided differently for each section. The participants were supposed to choose from matching, multiple choice, multiple-choice cloze, word completion, open cloze, information transfer, and the last section which was a guided writing part. After that, the test was piloted by giving it to 10 students. The students found no difficulties in answering the questions in a good level. In order to estimate the reliability of the study results, the data were analyzed using (SPSS 24) and the results showed that the Cronbach's Alpha reliability was .92 for the control group and .98 for the experimental group. This is considered to be reliable (Ary et al., 2010). The results of this analysis will be presented in the next chapter.

To decide which standardized test to use for pre-posttests, the researcher piloted one of the KET tests. The KET test was for non-native speakers of English at

A2 level (see appendix VI.). The results of this pilot study showed that the students found it appropriate to understand the KET test questions (see Appendix I). Thus, the researcher of this study, together with the research supervisor, decided to use KET as a standardized pre- and post-test as it was more suitable for the A2 level (see Appendix VI).

Therefore, the material used for collecting data in the pre- and post-tests were the KET's reading and writing sections. The test was administered to both the experimental and control groups. The test was taken on the same day for each group. The KET reading and writing sections consisted of nine parts (see Appendix I). In the first part, each student matches each sentence to the right sign or notice (see Appendix VII). In the second part, each sentence has a missing word and students have to choose the best word (A, B or C) to complete each of the sentence (see Appendix VIII). The third section consists of two parts. In the first part, test takers have to choose what the other person says next (A, B or C) (see Appendix IX). While in the second part, students find the right sentence for each space from a list of (A–H). In the fourth part, students read a text(s) and seven sentences. They have to decide if each sentence is “Right, Wrong, or Doesn't say”, or choose the right answer (A, B or C) to the questions (see Appendix X). In the fifth part of the test, there is a missing word and students have to choose the right answer (A, B or C) for each (see Appendix XI). In the sixth part, students are given the first letter of the word and the number of letters, and they have to complete the word (see Appendix XII). In the seventh part, students have to think of the right word to complete each space(see Appendix XIII). In the eighth part, students have to use the information in the texts to fill in a note, form, diary, or other document correctly. The last section, the students have to write a guided-writing paragraph (see Appendix XIV).

3.7. RELIABILITY

Ary et al. (2010) state that “the reliability of a measuring instrument is the degree of consistency with which it measures whatever it is measuring” (p. 236). As the main instrument for collecting data was testing, to ensure that the participants were graded in a reliable way, KET reading and writing section was used. Cambridge's KET reading and writing sections require a rater to verify the candidates' reading and writing skills.

The assessor gives marks based on the analytical assessment scales for these criteria: the nine different sections of the test which were matching, gapped sentences, conversations, comprehension, text with gaps, word completion, text with gaps, fill in a form, and guided writing. The assessor has 1 point to give for each point of the different sections except the ninth part, which the assessor has 5 points for the guided writing (see Appendix I). The marks were given following the KET guidelines for the reading and writing sections (see Appendix from XII to VX). Finally, all the marks given to the four analytical scales are combined with the global assessment scale. Together, they all make the total mark, which is 60.

Concerning multi-item scales, Ary et al. (2010) argue that “these measures typically have only moderate reliability (.60 to .70)” (p. 249). The Cronbach Alpha score which was calculated for students of control group was .92. It was also calculated for the students of experimental group and the result was .98, so the test was highly reliable.

The KET reading and writing test consists of nine parts. To assess the students' skill of reading, marks were given to the different sections of the reading part which were matching, multiple choice, multiple choice, multiple choice, multiple-choice cloze, word completion, open cloze, information transfer, and guided writing (Appendix VI).

The test is divided into different parts. In the first part, each student answers the different sections of the reading. In the second part, the students answer the writing parts of the test. The students should answer individually without getting help from each other. In the test some pictures were given on the test papers to make the students to respond the questions better.

Therefore, the instrument was thought to be reliable. For this, the data was put into SPSS to find its reliability. The Cronbach Alpha score was also calculated for students of control group which was .92. It was also calculated for the students of experimental group and the result was .98 which were both high reliability coefficients.

3.8. DATA ANALYSIS

Statistical Package of Social Science 24 was used to analyze the data. The data were analyzed quantitatively as the data was collected through pre and post-tests. Many “would claim it to represent quantitative research at its most scientific because it can establish an ambiguous cause-effect relationships.” (Dörnyei, 2007, p. 115). The student’s grade was out of 60 and the outcome was put into SPSS. To analyze the tests paired samples t-test and independent sample t-test were used to compare the experimental group and the control group’s performance in the pre-and post-tests to find out if there is any significant difference in their reading and writing skills. Descriptive statistics was used to analyze the data.

3.9. VALIDITY

Ary et al. (2010) define validity as “the extent to which scores on a test enable one to make meaningful and appropriate interpretations” (p. 24) The study was conducted by using two groups of participants, one group of experimental and one control group. The variable was varied by the experimenter was the independent variable and measuring the effect of experimental variable known as dependent variable (Barker, Pistrang & Elliott, 2002). To achieve the internal validity, the researcher was the teacher of the two groups in the study to minimize the differences in terms of teacher experiences, teaching method and personality. To achieve the aim of the study, the experimental group was taught with lean as an innovative method and the teacher applied the techniques and steps of lean on Sunrise course books 11th grade. The control group of the study was taught with the guidance of Sunrise teacher’s book which the students normally study them at schools without getting any techniques or guidance from lean as an innovative method in English language teaching. After the treatment, the participants of the two groups, control group and experimental group were put on the KET test again. Then the data was analyzed by using SPSS. Pre-and post-tests used to see the differences in the performances of the students after getting the treatment. In order to measure the validity of the tests, which were used to find out the performances of the students, Cambridge KET test was used which is designed by Cambridge testing experts. Systematic sources of error in testing are prevented which is according to Ary et al (2010) is the root of the problems.

The level of students was significant in choosing the test. To find out whether the test items were easy or suited the ability of the students, the test was administered to a group of 10 students. The pilot study was to find out that the participants would not face any problems while answering the questions.



CHAPTER IV

FINDINGS

4.1. INTRODUCTION

In this chapter, the results of the analysis of students' pre-tests and post-tests are presented and discussed. The results are analyzed using the Statistical Package for Social Sciences (SPSS 24) by the use of paired sample t-tests, independent samples t-tests, and descriptive statistics. The following analyses were guided by the two main research questions already presented in the first chapter of this thesis:

1. To which extent, applying lean as an innovative method increases students' achievement in language learning?
2. Do learners who are instructed with lean as an innovative method perform better on a standardized reading and writing test than those who are not?

4.2. LEARNERS' PERFORMANCE ON PRE-POST-TESTS

It was indicated in the previous chapter that the students in both the experimental and the control groups were given the Cambridge Key English Test (KET) reading and writing sections to find out the level of their performances in reading and writing skills before and after the treatment. The data collected through this instrument to find out how much the students in both groups have improved their reading and writing skills after the treatment.

4.3. EXPERIMENTAL GROUP'S PRE-TEST AND POST-TEST RESULTS

Different analyses were used to find out if there is any significant difference between the pre-test and the post-test results of the experimental group, Paired sample t-test was used. Table 1. shows the mean scores of the pre-test and post-tests

of the experimental group. The analysis indicates that the mean score for this group was 29.55 in the pre-test, which has increased to 33.25 in the post-test. Therefore, it appears to be a high improvement in the reading and writing performances of the participants in the post-test. To see whether this improvement was statistically significant or not, a paired sample t-test was utilized.

Table 1. shows that the mean score of the students in the test increased remarkably, in the pre-test it was 29.50 but in the post-test increased to 33.25

Table 1. Pre-Post-test Results for the Experimental Group

	Mean	N	Std. Deviation	Std. Error Mean
Pretest	29.50	28	10.362	1.958
Posttest	33.25	28	10.810	2.043

In Table 2, the paired samples t-test analysis of the mean differences of the two tests is presented in the experimental group. The results of this test explain the difference between the pre-test and post-test to be statistically significant ($p < .05$).

Table 2. Significance Test for Experimental Group's Test Scores

	Paired Differences					t	Df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
pretest – posttest	-3.750	2.876	.543	-4.865	-2.635	-6.901	27	.000

It can be concluded that the participants of the study in the experimental group have significantly improved their performances in the standardized reading and writing test, following the treatment the learners received during the use of lean as an innovative method. As paired sample t-test was used, the score is considered significant ($p < .05$), which means that the participants have improved their achievement. The outcomes of this analysis show that the t value is $t -6.901$ (27), the participants achieved a high level of increase after taking the treatment in the study (see Table 2.).

4.4. CONTROL GROUP'S PRE-TEST AND POST-TEST RESULTS

The control group's pre-test and post-tests were analyzed. The results show that the mean score of the participants' pre-test results was 30.86 and this score has increased to 32.71 in the post-test, which the learners of the control group achieved this result without providing any treatments from lean (see Table 3.).

Table 3. Pre-Post-test Results for the Control Group

	Mean	N	Std. Deviation	Std. Error Mean
Pretest	30.86	28	7.143	1.350
Posttest test	32.71	28	9.439	1.784

In Table 3. the control group's pre-test and post-tests were presented. The results indicate that the mean score of the participants' pre-test results is 30.86 and that this score has increased to 32.713 in the post-test.

Table 4. presents the t-test analysis of the mean differences of the two tests in the control group. The results of this paired samples t-test show the difference between the pre-test and post-test to be statistically significant but not in the range of the participants of the experimental group which was highly significant.

Table 4. Significance Test for Control Group's Test scores

	Paired Differences					t	Df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error	95% Confidence Interval of the Difference				
		n	Mean	Lower	Upper			
pretest – posttest tests	- 1.857	4.327	.818	-3.535	-.179	- 2.271	27	.031

The outcomes of this analysis show that the t value is $t -2.271 (27)$, $p < .05$. This score means that the difference between the pre-test and post-test was statistically significant in the control group.

The paired samples t-tests of the two tests show that learners in both the control and the experimental groups have significantly improved their reading and writing skills in the post-test when compared to their scores in the pre-test(see Table 6 and 7). However, a comparison of the mean differences for each group's pre and

post-test results indicate that the learners in the experimental group increased their mean scores highly more than the participants in the control group. To know whether this difference is statistically significant, an independent samples t-test was run. Table 4. shows the findings of the independent samples t-test. The results of the t-test analysis suggest that the result is statistically significant between the two groups in terms of their performances in the reading and writing sections of the test. However, if the mean scores of the pre-tests are closely looked at for the two groups, a meaningful and remarkable difference can be noticed. The experimental group's mean score for pre-test was 29.57 and the control group's mean score was 30.36 (see Table 3.). These two scores were initially close to each other, whereas this difference appears to have expanded in the post-test, these increases have been explained in the following sections.

4.5. LEARNERS' PERFORMANCE IN EACH LANGUAGE AREA:

EXPERIMENTAL GROUP'S RESULTS

The participants' performances in the experimental group were compared between their scores in the pre-test and the post-test within each section of the test. There were two different skills, reading and writing skills. It was found that the participants increased their scores in the sections and also in the different parts of the test but in various levels of increase.

4.5.1. Pre-Post-test Results for the Experimental Group on Reading Skill

The participants seem to have increased in reading section highly. To determine whether these noticeable increases in the performances of the participants in the experimental group are significant, paired sample t-tests were run for each section and different parts of the test (see Table 5.).

Table 5. Significance Test for the Experimental Group's on Reading

	Mean	N	Std. Deviation	Std. Error Mean
pretest_reading	18.39	28	5.718	1.081
posttest_reading	20.43	28	6.239	1.179

Paired sample t-test was run to find out how much the learners in the experimental group have improved their reading skill. Table 5. presents the mean scores of all the participants' performances of the experimental group in the pre-

post-tests in the reading section. The analysis indicates that the mean score of the pre-test was 18.39, which increased to 20.43 in the post-test. The finding of the paired t-test analysis of the experimental group's performance on reading section is shown in Table 6.

Table 6. Significance Test for the Experimental Group's Scores on Reading

	Paired Differences					t	Df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error	95% Confidence Interval of the Difference				
				Lower	Upper			
pretest_reading - posttest_reading	-2.036	2.755	.521	-3.104	-.967	-3.910	27	.001

According to the results of the analysis, the t value is $t = -3.910$ (27). The score is considered significant ($p < .05$), which provides the clue that the participants have improved significantly in this language area.

The mean scores of the pre-post-test performances of the participants in the experimental group increased for reading skill. The mean scores of the pre-test for the participants' reading section were 18.39 and these increased to 20.43 in the post-test (see Table 5.).

4.5.2. Significance Test for the Experimental Group's Scores on Writing skill

The finding of the paired t-test analysis of the experimental group's performance on writing section is shown in Table 7. As the table shows, the participants' achievement increased remarkably. The participants seem to have increased in writing skills highly and effectively. To determine whether the obvious increases in the performances of the participants in the experimental group are significant, paired samples t-tests were run for each language area (see Table 7.).

Table 7. Significance test for the Experimental group's Writing

	Mean	N	Std. Deviation	Std. Error Mean
pretest_writing	11.11	28	5.195	.982
posttest_writing	12.82	28	4.997	.944

Paired sample t-test was run to find out how much the learners in the experimental group have improved their writing skill. Table 7. presents the mean scores of participants' performances in the pre-post-tests in the writing section. The analysis indicates that the mean score of the pre-test is 11.11, which increased to 12.82 in the post-test.

The finding of the paired t-test analysis of the experimental group's performance on writing section is shown in Table 8. The students in the experimental group have improved their scores in the writing skill of the test after the treatment.

According to the results of the analysis, the t value is $t = -4.628$ (27). The score is highly significant ($p < .05$), which means that the participants have improved significantly in this language area where the ability of the participants in the writing skill was the target (see Table 8.).

Table 8. Significance Test for the Experimental Group's Scores on Writing

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
pretest_writing - posttest_writing	-1.714	1.960	.370	-2.474	-.954	-4.628	27	.000

4.6. CONTROL GROUP RESULTS

When the participants' performances in the control group were compared between their scores in the pre-test and the post-test within each language skill of the tests, it was found that the participants increased their scores in reading and writing skills. The achievement of the students in the control group was different from the achievement of the participants in the experimental group while the rate of the increases were high.

4.6.1. Significance Test for the Control Group's Scores on Reading

The participants seem to have increased in reading skills. To ascertain whether these transparent increases in the performances of the participants in the control group were significant, paired samples t-tests were run for each section of the

test which explained the improvement of the students achievement in the different skills of reading and writing (see Table 9.).

For the mean scores of the pre-post-test performances of the participants in the control group for reading achievement, the analysis indicates that the mean scores of the pre-test was 18.25, which increased to 19.32 in the post-test. It can be considered as a remarkable increase in the scores of the participants in the control group without getting the treatment, but the analysis shows that the achievement of the participants in the experimental was more effective. The findings of the paired t-test analysis of the participants' performance in this section of the test were shown in Table 9.

Table 9. Significance Test for the Control Group's Reading

	Mean	N	Std. Deviation	Std. Error Mean
pretest_reading	18.25	28	4.812	.909
posttest_reading	19.32	28	6.171	1.166

The results of the t-test analysis indicate that the t value is $t = -1.528$ (27). The score is not considered significant. However, the result is not statistically significant but the students improved in the area as the mean score increased in the post test in the reading section.

To find out whether this increase in the mean scores in the post-test is statistically significant a paired samples t-test was run. As it is been shown in Table 10. the result is not statistically significant. The mean scores of the participants' reading in the pre-test was 18.25 and this increased to 19.32 in the post-test.

Table 10. Significance Test for the Control Group's Scores on Reading

	Mean	Paired Differences		95% Confidence Interval of the Difference		t	Df	Sig. (2-tailed)
		Std. Deviation	Std. Error Mean	Lower	Upper			
pretest_reading - posttest_reading	-1.071	3.711	.701	-2.510	.368	-1.528	27	.138

4.6.2. Significance Test for the Control Group's Scores on Writing

The findings of this analysis of the control group's performance in writing section are shown in Table 11. The participants in the control group seem to have increased in writing skill. To ascertain whether these increases in the performances of the participants in the control group were significant, paired samples t-tests were run for each language area. Table 11. presents the mean scores of the pre-post-test performances of the participants in the control group for writing achievement. The analysis indicates that the mean scores of the pre-test were 12.61 which increased to 13.39 in the post-test.

Table 11. Significance test for the Control group's Writing

	Mean	N	Std. Deviation	Std. Error Mean
pretest_writing	12.61	28	3.436	.649
posttest_writing	13.39	28	4.450	.841

The findings of the paired t-test analysis of the participants' performance in the writing section of the test are shown in Table 12. As it is shown in the table, the end-result is not statistically significant. The results of the t-test analysis indicate that the t value is $t = -1.625$ (27). The score is not considered significant, which means that the participants improved but not significantly.

Table 12. Significance Test for the Control Group's Scores on Writing

	Paired Differences					T	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error	95% Confidence Interval of the Difference				
				Lower	Upper			
pre_writing - post_writing	-.786	2.558	.483	-1.778	.206	-1.625	27	.116

4.7. SIGNIFICANCE TEST FOR THE CONTROL GROUP AND EXPERIMENTAL GROUPS' SCORES

The experimental group's mean score was 29.19 in the pre-test (3.75 points increase) as the group's mean scores in the post-test was 33.25 (see Table 1) . The control group's mean score was 30.86 in the pre-test (1.85 points increase) while it

was 32.71 in the post-test (see Table 3). According to the results of the analysis, the t value is $t = 2.923$ (27). The score is highly significant ($p < .05$), which means that the participants improved significantly in the language areas where the students received treatment during the teaching weeks by means of using lean as an innovative method. Table 13, shows the difference between the experimental and control groups achievement, which also explains the second research question of the study.

Table 13. Significance Test between the Experimental and Control Groups' Test Scores

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	Df	Sig. (2- tailed)	Mean Differen- ce	Std. Error Differen- ce	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	.224	.638	2.92	54	.005	2.964	1.014	.931	4.998
Equal variances not assumed			2.92	49.5	.005	2.964	1.014	.927	5.002
			3	39					

The difference in the proportions of improvement for the groups is very apparent and effective. So, this may show that both groups have not improved in similar ways. The possible reasons and effects for this finding will be discussed and explained further in the discussion section.

4.8. LEARNERS' PERFORMANCE IN EACH LANGUAGE AREA : EXPERIMENTAL GROUP'S RESULTS

The two sections of the test will be analyzed in the control and experimental groups to show the different achievement of both groups.

4.8.1. Learner Performance in Each Language Area between the Two Groups

Reading: The descriptive analysis of the post-test results indicated that both the experimental and the control groups have improved their scores in reading skill in the post-test. However, the experimental group appears to have highly increased their mean score more than the control group. An independent samples t-test was

conducted to ascertain whether this result is statistically significant. Table 14. shows the results of the independent samples t-test.

In order to find out whether this difference between the two groups is statistically significant, an independent samples t-test was run. Table 14. presents the findings of that analysis. The results of the analysis suggest that the score is statistically significant between the two groups in terms of their performances on the reading skill of the test ($p < .05$), which means that the participants have improved significantly. The participants in the experimental group have improved their performances in the reading skill more than the participants of the control group (see Table 14.).

Table 14. Significance Test between the Two Groups 'Reading

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	Df	Sig. (2- tailed)	Mean Differ ence	Std. Error Differ ence	95% Confidence Interval of the Difference	
									Lower	Upper
Pre – Equal	variances	3.771	.057	-	54	.055	-1.643	.839	-3.324	.038
post tests	assumed			1.9	59					
	Equal			-	46.	.056	-1.643	.839	-3.330	.044
	variances			1.9	581					
	not assumed			59						

Writing: This skill was also tested to find out the improvement of the participants in each group, control group and experimental group. The descriptive analysis of the post-test results indicated that both the experimental and the control groups have improved their scores in writing in the post-test. However, the experimental group appears to have highly increased their mean score more than the control group. This needs an independent samples t-test to be used to determine whether this result is statistically significant. Table 15. shows the results of the independent samples t-test between the achievements of the participants in both groups.

The results of the independent samples t-test reveal that the score is statistically different between the two groups in terms of their performance in the writing section and its different parts, though the achievement of the students in the experimental group was higher with the use of lean as an innovative method in ELT. The control group and experimental group have improved as the mean of the control group in the pretest was 12.61, but in the post test the mean was 13.39. the mean of the experimental group was 11.11 but in the posttest it was 12.82. The results show that both groups have increased their achievements differently as the mean scores explain (see Table 15.)

Table 15. Significance Test between the Two Groups' Writing Skill

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Pre-	Equal	.56	.457	-	54	.046	-1.321	.646	-2.616	-.026
post	variances assumed	2		2.0	46					
writi	Equal			-	53.	.046	-1.321	.646	-2.617	-.026
ng	variances not assumed			2.0	226					
	assumed			46						

According to the result, the score is statistically different between the results of the two groups in the writing section as ($p < .05$), which means that the participants have improved significantly.

4.9. PRE-POST-TEST RESULTS FOR THE PARTICIPANTS IN THE CONTROL GROUP ACCORDING TO THE NINE DIFFERENT PARTS

The mean scores of the students in the different parts of the test have been explained in Table 16.

The descriptive analysis of the control group's pre-test and post-test reveal that the control group participants have improved their scores in different parts of the

tests in different ranges, and improvements in some parts turn to be statistically significant. Participants in the control group have increased their mean scores in the post-test. In the first part of the test, signs and texts (see Appendix VII), the participants' mean score was 2.68 while in the post-test the participants' mean score have increased to 3.07 (see Table 16.).

Table 16. The mean scores of the nine parts in control group

Paired Samples Statistics				
Different Parts	Tests	Mean	N	Std. Deviation
Part One	Pretest	2.68	28	1.090
	Posttest	3.07	28	1.215
Part Two	Pretest	2.79	28	.995
	Posttest	2.75	28	.887
Part Three	Pretest	4.89	28	1.969
	Posttest	4.96	28	2.516
Part Four	Pretest	3.11	28	1.286
	Posttest	3.50	28	1.732
Part Five	Pretest	4.79	28	1.988
	Posttest	5.04	28	1.795
Part Six	Pretest	2.89	28	1.100
	Posttest	3.32	28	1.156
Part Seven	Pretest	4.89	28	1.641
	Posttest	4.89	28	1.931
Part Eight	Pretest	2.79	28	1.475
	Posttest	2.79	28	1.500
Part Nine	Pretest	2.04	28	1.261
	Posttest	2.39	28	1.423

In the second part of the test, gapped sentences (see Appendix VIII) the participants' mean score has not increased. The participants' mean score decreased from 2.79 to 2.75. It shows that the learners' achievements of the study were not statistically significant. The participants' mean score increased in the third part of the test, conversations with multiple choices (see Appendix IX). The mean score of the participants in the pre-test was 4.89, but their mean score increased to 4.96 in the

post test in the third part of the test. In the fourth part, long texts with multiple choice questions (see Appendix X), the participants mean score increased from 3.11 to 3.50. The mean of the participants in the fifth part of the test increased, texts with choice gaps (see Appendix XI), it shows improvement in the achievement of the learners that the mean score increased from 4.79 to 5.04 (see Table 16.).

In the sixth part of the test, word completion (see Appendix XII) the students' achievement improved as the mean score of the participants increased from 2.89 to 3.32. It shows that there was no increase in the achievement of the participants in the seventh part of the test, text with gaps (see Appendix XIII) and eighth part, fill in a form (see Appendix XIV) of the test as the students' scores were not improved. In the ninth part of the test (see Appendix XV), as it was a writing section. The participants' score increased from 2.04 to 2.39 (see Table 16.).

4.10. PRE-POST-TEST RESULTS FOR THE PARTICIPANTS IN THE EXPERIMENTAL GROUP ACCORDING TO THE NINE DIFFERENT PARTS.

In the first part of the test, the participants' mean score was 2.64 while in the post-test the participants' mean score has increased to 2.89. The result shows that the participants in control group improved their performances in the first part of the test slightly more than the participants in the experimental group. In the second part of the test, the participants' mean score has increased. The participants' mean score increased from 2.39 to 3.18. It shows that the learners' achievements of the study were increased while the learners in the control group have not increased their performances. The participants' mean score increased in the third part of the test. The mean score of the participants in the pre-test was 4.96, but their mean score increased to 5.25 in the post test in the third part of the test. In the fourth part of the test, the participants' mean score increased from 3.71 to 4.04. The mean of the participants in the fifth part of the test increased, it shows improvement in the achievement of the learners. The mean score increased from 4.29 to 5.07. In the sixth part of the test, the students' achievement improved as the mean score of the participants increased from 1.75 to 2.39. There were no increases in the achievement of the participants in the seventh and eighth part of the test in the control group, but the participants increased their performances in the eighth and ninth part of the study. In the seventh part of the test, the mean score was increased from 5.14 to 5.50, and in the eighth part, it

increased from 2.29 to 2.46. In the ninth part of the test, the participants' score increased from 1.93 to 2.46 (see Table 17.).

Table 17. The mean scores of the nine parts in Experimental group

Differnt parts	Tests	Mean	N	Std. Deviation
Part one	Pretest	2.64	28	1.393
	Posttest	2.89	28	1.286
Part Two	Pretest	2.79	28	.995
	Posttest	3.18	28	.905
Part Three	Pretest	4.96	28	2.236
	Posttest	5.25	28	2.648
Part Four	Pretest	3.71	28	1.697
	Posttest	4.04	28	1.688
Part Five	Pretest	4.29	28	1.740
	Posttest	5.07	28	1.844
Part Six	Pretest	1.75	28	.967
	Posttest	2.39	28	1.370
Part Seven	Pretest	5.14	28	2.445
	Posttest	5.50	28	1.732
Part Eight	Pretest	2.29	28	1.675
	Posttest	2.46	28	1.598
Part Nine	Pretest	1.93	28	1.359
	Posttest	2.46	28	1.427

The descriptive analysis of the experimental group's pre-test and post-test explains that the experimental groups participants improved their scores in all the different parts of the study. However, participants in the control group increased their mean scores in the post-test and the participants' improvements were increased highly.

For analyzing, the data of the different parts of the test where the learners took, independent samples t-test was used to analyze the difference between their achievements.

Table 18. shows the difference between the experimental group and control group in the first part of the achievement.

The results of the independent samples t-test revealed that there was no statistically significant difference between the two groups in terms of their performance in the first part of the test, but the achievement of the learners in the experimental group was higher than the learners in the control group (see Table 18.). It shows that the learners in the experimental group improved in this part of the test. The results of the two groups will be explained in the next tables. It will be shown how the students scored in the test.

Table 18. Significance Test between the Two Groups' Part One

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	df	Sig. (2- tailed)	Mean Differ ence	Std. Error Differ ence	95% Confidence Interval of the Difference	
									Lower	Upper
Part one	Equal variances assumed	.286	.595	.470	54	.640	.143	.304	-.467	.753
	Equal variances not assumed			.470	51. 493	.641	.143	.304	-.468	.753

The results of the independent samples t-test show that the result is statistically different between the two groups, control group and experimental group, in terms of their performance in the second part of the test, the result and achievement of the learners in the experimental remarkably improved than the learners in the control group.

In the following table, the data analysis of the participants has been shown to clarify the significant difference in the results they scored in this part of the test (see Table 19.).

Table 19. Significance Test between the Two Groups' Part Two

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Part two	Equal variances assumed	23.239	.000	-.288	54	.774	-.107	.372	-.852	.638
	Equal variances not assumed			-.288	33.074	.775	-.107	.372	-.863	.649

Table 20, shows that the results of the independent samples t-test prove that there is no statistically significant difference between the two groups in terms of their performance in third part of the test, but the result and achievement of the learners in the experimental remarkably improved more than the learners in the control group.

Table 20. Significance Test between the Two Groups' Part Three

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Part three	Equal variances assumed	2.040	.159	-	54	.692	-.214	.539	-1.295	.866
	Equal variances not assumed			-	49.754	.693	-.214	.539	-1.297	.868

Table 21. shows the results of the independent samples t-test prove that there is no statistically significant difference between the two groups in terms of their performance in fourth part of the test, but the result and achievement of the learners in the experimental has remarkably improved more than the learners in the control group.

The results of the independent samples t-test show that the participants in the control group improved better than the participants in the experimental group. The achievement of the participants in the control group was 0.41 increase while in the experimental group it was 0.33. Table 21. shows how the participants scored in this part of the test. It is shown that inspite of increasing their achievement, the result was not statistically significant between the participants of the two groups.

Table 21. Significance Test between the two groups' part four

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	Df	Sig. (2- tailed)	Mean Differ ence	Std. Error Differ ence	95% Confidence Interval of the Difference	
									Lower	Upper
Part four	Equal variances assumed	.116	.735	.183	54	.855	.071	.390	-.710	.853
	Equal variances not assumed			.183	53. 144	.855	.071	.390	-.710	.853

The results of the independent samples t-test show that the participants recorded higher achievement in the test in the experimental group. The leaners of the treatment group recorded more as the learners achieved in the control group (see Table 22.).

Table 22. Significance Test between the Two Group' Part Five

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Part five	Equal variances assumed	.249	.620	-1.236	54	.222	-.536	.433	-1.405	.333
	Equal variances not assumed			-1.236	53.968	.222	-.536	.433	-1.405	.333

The results of the independent samples t-test reveal that the results are not statistically significant between the two groups in terms of their performance in sixth part of the test in the pre and posttest, but the achievement of the learners in the experimental is higher than the learners in the control group (see Table 23.).

Table 23. Significance Test between the two Groups Part Six

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Part six	Equal variances assumed	3.153	.081	-.679	54	.500	-.214	.316	-.847	.418
	Equal variances not assumed			-.679	48.076	.500	-.214	.316	-.849	.420

Table 24. Significance Test between the Two Groups' Part Seven

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	df	Sig. (2- tailed)	Mean Differ ence	Std. Error Differ ence	95% Confidence Interval of the Difference	
									Lower	Upper
Part seven	Equal variances assumed	1.419	.239	-	54	.397	-.357	.419	-1.196	.482
	Equal variances not assumed			-	51.096	.397	-.357	.419	-1.197	.483

The results of the independent samples t-test show that the results are not statistically significant between the two groups in terms of their performance in seventh part of the test in the pre-test as p-value is not ($p < .05$), which means that the participants have not improved significantly but the achievement of the learners in the experimental is higher than the learners in the control group in the post-test.

Table 25. Significance Test between the Two Groups' Part Eight

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	df	Sig. (2- tailed)	Mean Differ ence	Std. Error Differ ence	95% Confidence Interval of the Difference	
									Lower	Upper
Part eight	Equal variances assumed	.566	.455	-	54	.611	-.179	.349	-.878	.521
	Equal variances not assumed			-	42.507	.612	-.179	.349	-.883	.526

The results of the independent samples t-test showed that the difference was not significant between the results of the two groups in the ninth part, though the achievement of the experimental group was higher. The independent samples t-test revealed that the achievement of the participants in the experimental group was higher than the learners in the control group which they did not get any treatment from using lean as an innovative method during the experimental teaching lessons (see Table 26.).

Table 26 . Significance Test between the two Groups' Part Nine

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Part nine	Equal variances assumed	.020	.889	-.825	54	.413	-.179	.216	-.612	.255
	Equal variances not assumed			-.825	53.908	.413	-.179	.216	-.612	.255

According to the analyses of the data explained in a descriptive way, in the first part of the test the learners in the experimental study had an increase of 0.25 while the learners in the control group had an increase of 0.39. In the second part of the test, the participants in the experimental study had an increase of 0.39, but the learners in the control group did not increase their achievement. In the third part of the test, the learners in the experimental group improved their achievement and had an increase of 0.29 while in control group the participants had an increase of 0.17. In the fourth part of the test, 0.41 increase was achieved by the learners of the control group but in the experimental group the learners did not increase their achievement effectively. In the fifth part, the participants of the experimental group had better results as they had an increase of 0.78 but the learners in the control group had an

increase of 0.25. In the sixth part of the test, the control group recorded better and also the experimental group increased their achievement. The participants of the control group did not improve their achievement in the seventh and eighth parts of the test, but in the experimental group the learners improved their end-result effectively. In the last part of the test, the learners in the experimental group had an increase of 0.53 while the participants in the control group recorded 0.35.



CHAPTER V

DISCUSSION

5.1. DISCUSSION

The findings of the current study brought about certain topics that are discussed hereafter. First, the results of the reading proficiency indicated that the achievement of the participants increased highly in the experimental group after the treatment. Alagaraja and Egan (2013) state intervening the strategies of lean is to focus on the overall improvement in the organizations. It demands a systemic focus to develop the organization in a variety of different contexts, and similar finding has been reported. Similar findings appear in Flumerfelt's study in 2008, he states a good model of lean is provided by the lean system for education. It integrates well with the learning communities in a way to enable educators and school leaders for identifying problems and problem solving.

“Lean approaches” have effects on the way people think and work throughout organizations. Interestingly, it was found that applying lean as an innovative method and principles had a strong positive impact on the participants of the current study. Applying the elimination of nine wastes of lean and all the steps in the methodology of lean which can be applied in the process of education, teaching, and learning might imply that better results would have been obtained. The achievement of the students improved noticeably amongst the participants in both groups but highly in the experimental group after the treatment and this is an approval with the fact that lean as an innovative method is believed to increase the production exceedingly. The possible explanation to this could be the fact that after removing the wastes in lean which were nine wastes, made the end production better in the experimental group. The wastes are overproduction / effort, talent, motion, time, processing / handling,

assets, capacity, knowledge, and defects which were eliminated during the teaching period.

According to another study conducted by Balzer (2010, p. 16) over the past years, the lean practitioners have amassed more techniques which may be pertinent in higher education for use. Lean thinking is also a help for the universities to improve their processes in a way to achieve what they expect to have as an outcome. Womack and Jones (2003, p. 19) state in *lean Thinking for Schools* that leaders for lean address the values, it concentrates on specifying the value accurately which is a critical step in Lean Thinking. This result partially conforms to what Doman, (2011) in a study shows that lean principles can be applied in industry successfully, it also can be applied in high education through engaging learning experience involving undergraduate students. He states that the universities can give opportunity to their students by involving them to improve the administrative universities. The students can play a major role to improve the process of the universities.

However, lean was one of the most effective methods to operate an organization, with the main focus on the identification and elimination of wastes throughout its processes. Lean is a famed best practice in business in the world. Lean as an innovative method has been applied to a wide variety of settings, and its origins are in manufacturing, including higher education, with noticeable success (Balzer, 2010). Participants of the current study might have bearings on their performances. Lean was considered as the variable like the independent variable of the study. It was carried out to set a more extensive scope of lean as an innovative method during the treatment. Hence, it seemed that the application of the principles of lean has strongly affected the participants' performances in both reading and writing skills as taking the proficiency test. The changes in teaching process which were aligned with the philosophical aspects of lean triggered more production of learning. As it has been presented in the results earlier, the end-result of each participant differed in their productions in reading and writing skills, which were the main parts that related to the focus of this study the most. The wastes which were prevented in the study appeared to have a strong positive correlation with the achievement of the students. This conforms with the findings of this study, which indicate that learners with applying lean methodology as an innovative method has moderately increased their mean scores in the post-test. The other findings have been carried out in the other

fields, not in language learning. In other words, strong improvement appeared to have contributed to the improvement of the participants' reading and writing skills adequately, especially in the production of the group after the treatment.

The achievements of the participants in experimental group improved which were statistically significant after receiving the treatment. The participants' achievement in the control group was also statistically significant, but as it was explained in the descriptive analysis of the study, the achievement of the participants in the treatment group was higher than the control group. The reading skill was increased highly in the experimental group after applying lean in the teaching performance. The improvement in the reading skill in the treatment group was statistically significant. The pre and post-test results of the participants in the treatment group in the writing skill indicate that participants achieved apparent increases in the performances in the experimental group which were statistically significant. The results show the difference was statistically significant between the pre-test and post-test scores.

Another important finding of the current study points to the effectiveness of applying lean activities in improving EFL learners' performances on writing tests. The comparison of the experimental group's pre-post-tests shows the students' achievement was highly significant in the reading skill more than the writing skill. There were big increases in the reading performances more than the writing skill. The comparison of the two groups' pre-post-tests was statistically significant, though learners in the experimental group improved their mean scores more than the control group.

In line with this, in a study, Castro, Putnik, and Shah (2012) present that lean approach is considered as a good method to ascertain waste and increase efficiency which is applicable to supply chain, it is According to research action "Integrative logistics tools for supply chain improvement," from the research topic "Technologies for sustainability.". Comm and Mathaisel (2005) state that concepts of lean sustainability will make the schools to provide better services with lower costs, they are two concepts which are attractive to any school. In this sense, the sustainability of lean is a good fit for higher education. The results revealed that students in the experimental group who received lean instruction performed better in the KET

writing section. Furthermore, the findings of the current study were found to be statistically significant in the post-test in the control and the experimental group as the achievement was in favor of the latter one.

According to Alves, Dinis-Carvalho and Sousa (2012), lean method changes the way the operators work and continuously improves the operations and the processes. In lean, responsibility applies in all levels as each worker has freedom to control its own work, which explored the effectiveness of using lean-based teaching in improving the skills. Spear and Bowen (1999) stated Key Lean principles, which were focused on, deployed from the HBR article “Decoding the DNA of the Toyota production system”. The first three rules of the Toyota system were the most critical to the kaizen team’s analysis, which they are:

- (1) How people work.
- (2) How people connect.
- (3) How the production line (or process) is constructed.

The findings of the study revealed that students in the experimental group outperformed those participants in the control group both in writing and in reading performances. Thus, the findings of the current study also add to the arguments in favor of using lean as an innovative method with high school students in different settings. In the study, Significant differences between the experimental and control groups of the current study were found and these can be taken into consideration for the fact that the control group continued to use their Sunrise textbook, which is considered to be designed according to the following modern methods of learning and teaching. The study showed that the syllabus the students studied as their main course book could not improve the achievements of the students in both reading and writing sections as the students improved in the experimental group. However, it seemed that its communicative approach was enough effective to improve learners’ performances on the reading and writing tests used in the current study.

As analyzed earlier, the KET (Key English Test) reading and writing tests used in this study had nine different sections and the learners had different scores and improved not on the same line in each section. The results showed the fact that it was the case with learner performance in the general reading and writing tests, learners’

achievement was better in the post-test in the various sections of the test except the control group participants who could not improve in the second, seventh, and eighth parts of the tests. Similar to the results of the reading and writing tests, these improvements from the pre-test to the post-test proved to be significant in the groups. Interestingly enough, these findings are in line with Emiliani's study in (2008) which describes real lean as respect for people are the leading strategy, and continuous process improvement is followed by. The difference between this study and the other studies of this field is the way of application. This study is an applied study and focused on English teaching according the principles and system of lean.

The findings showed that participants improved their performances in the two groups in the writing section obviously. Bicheno (2008) said that Toyota Production System is not only about tools and techniques, but it is all about the system. Lean is not a technical system, but it is a learning system. Doman (2011) found that in a university administrative process, a small group of undergraduate students learned the basics of lean principles, tools, and practices and applied them to improve the university administrative process. The current study had similar findings; learners in the experimental group outperformed the learners in the control group in the post-test. However, the results were statistically significant. This could be due to the fact that this study used lean as an innovative method to teach the learners effectively to cater for improving writing and reading performances in general; specific activities to improve learner's reading and writing skills were not designed as the techniques were applied during the teaching period.

The language skill that the participants in the experimental group increased was reading section. The participants started with a mean score of 18.39 in the pre-test and this increased to 20.43 in the post-test. On the other hand, the most improved language skill in the control group was the reading section. The learners started with the mean score of 18.25, which increased to 19.32. Concerning the different parts of the test, part five in the experimental group and part two in the control group were the least improved language areas. As discussed earlier, the increase in part six by the participants in the control group was apparent to the design and teaching approach used by the Sunrise textbook exercises and activities, which mainly improved students' achievements. Those techniques used in the control group were according to the communicative approach of Sunrise, which might have increased

the participants' achievements in the sixth part and nearly fourth parts of the test. Worth mentioning is the result that the experimental group also improved their achievement in the first part of the test, but with a slightly lesser degree than the control group. This becomes clear when looking at the results in the pre and post-tests. The experimental group's post-test mean score is 2.89, which is .25 increase, while the control group's post-test mean score is 3.07, which is a .39 increase. The same is true for the fourth section of the reading and writing test. The control group's post-test mean score is 3.50 which is .041 increase, while the experimental group's mean score in the post-test is 4.04 which is .33 increase.

Alagaraja and Egan (2013) think that some organizations adopt lean to improve their performances in business as a strategy, especially to improve structural factors such as operational process and cultural factors. It can be concluded that that lean as an innovative method contributes more to different aspects of learning. As the findings of this research revealed, that applying lean method does not have similar effects on learners' reading and writing performances and also the participants increased their achievement differently to the improvement of that performances. The analysis of participants in the experimental group with considering the elimination of the wastes in the teaching lessons increased their scores and performed better in the reading and writing tests. Alagaraja and Egan (2013) focus on continuous improvement in the process of the different organizations and it works to create a "perfect value" for the customers.

Hence, the findings of Alagaraja and Egan (2013) together with the current study strengthen the argument in favor of using lean as an innovative method to increase the achievement of the students, especially focusing on the elimination of the wastes and creating the culture of lean, with high school EFL learners. In addition to that, the results showed that using lean as an innovative method was effective and contributed the most to the improvement of the participants' reading and writing performances. Therefore, the activities which were designed to be applied with the usage of lean as an innovative method were successful.

In the principles and practice syllabus of lean, three changes should be made. First, lean should be introduced in the schedule. Second, it initially concentrates on a few key lean principles. The third one is to design the team Lean Workout Schedule.

Flumerfelt , Siriban-Manalang, and Kahlen (2012) state that management by design, but not default, shows wonderful opportunities for the future. Thus, the findings of the current study are on the side of those studies. Using lean to provide and make the system of education more successful and this study offers using lean with learners in foreign language learning.

5.2. CONCLUSION

This chapter presented the findings that were obtained by analyzing the data collected from the participants through the reading and writing test and using lean as an innovative method. The results were analyzed and discussed in accordance with the relevant literature in the field. It was found that lean was effective and could improve the performance of the learners in the experimental group more than the participants in the control group could. The test had two sections, reading and writing. The learners increased their achievement in the reading more than the writing section. Reading performance contributed the most to the improvement of the participants' skills. Mostly the use of lean as an innovative method improved the participants' reading skills, it was found to be statistically significant in the pre-post-test scores in each group but it was highly significant in the experimental group after the treatment. In the next chapter, conclusions will be shown based on these results and their indications together with recommendations for future study will be discussed too.

CHAPTER VI

CONCLUSION AND RECOMMENDATIONS

6.1. PRESENTATION

In this chapter, the result of the study will be explained and recommendations are given for future studies. A model is also shown to finish a program of any institutions in education or teaching and learning with better results with the use of lean as an innovative method.

The findings and results of the present research concerning lean as an innovative method in teaching and its application in foreign language learning will be summarized. Finally, educational implications and suggestions for further researches will be provided.

6.2. SUMMARY OF THE FINDINGS

The present research found that learners gain who had the chance to get the lessons with the different steps of lean perform better in reading and writing skills, though some achievements were not in the same level among the participants of each group. It was also found that the participants increased their performance in the reading section more than the writing section. The elimination of the steps which do not help the students to increase their end-result makes the students perform better. These findings are in line with the other findings as Ziskovsky and Ziskovsky (2007) conducted which indicated that learners with the application of lean as an innovative method to increase the results is very effective and improve the whole process, the application of lean moderately increased the participants' reading and writing test scores. Other steps of lean, for instance planning before doing the project, and

checking every step “poka-yokes” to remove the unnecessary actions had a strong effect on making the process more labour saving.

Part 1, 3, and 8 were the areas where the participants had the least achievements, and they appeared not to have been effective like the other areas in their contribution to the improvement of the reading and writing test scores. In other words, the participants developed and performed not in the same range in the reading and writing sections and also in the different areas of the two skills. The areas were found to have different improvements in the performances of the learners in reading and writing skills. Applying lean as an innovative method has different roles in improving the end-result as the learners’ achievement is contrasting in the end-result, but it improves the whole process. There were no negative effects of the application of lean. It was positive in different sections of the test which were covered. Concerning this, it was also found that the participants in the control group appeared to have improved their scores in the parts of 5, 6, and 9.

Learners have shown improvement in their reading and writing skills in all language areas after being instructed with the steps of lean. Learners in the control group also increased their reading and writing skills, however their improvement was not as much as the group who studied with the application of lean as a method in English language teaching. One interesting finding of the study is that while the experimental group participants showed improvement part 5 the most, the control group participants have increased part 4 the most. Concerning the least improved test sections, the participants in the experimental group improved in all the sections of the test while the participants in the control group could not improve their scores in the parts 2 , 7, and 8.

The current study also found out those learners with the application of Lean as a treatment improved their reading and writing skills nearly twice more than the participants in the control group. Therefore, it is most likely that using lean in teaching English as an innovative method in a foreign language was successful. During the experimental study, it was also found that after eliminating the steps that did not add value to the process, less time needed to finish the pre-planned course book to study, or the remained time can be used to make sure that a level has finished successfully before jumping to the next one.

6.3. SUGGESTIONS FOR PRACTICE

Applying lean as a method of teaching for EFL learners should be taken into careful consideration when improving learners' reading, writing and other skills is targeted. As the findings of the current study demonstrate, applying lean not only improves their reading and writing skills but also gives more respect to the learners, and finishes the pre-scheduled teaching period on time, identifying each step before starting the process also helps teachers understand to focus on and work for what adds value and important for the learners.

The results reveal that the learners of 11th grade have improved their performance. Therefore, applying lean as a method for the learners in the primary school and kindergartens should be one of the priorities of any teacher or institution confirming at completing language learning in different skills in particular. In this way, teachers can recognize learners' strengths and help them to develop all of their skills with the lean application in different levels of ages.

In this study, adapting an existing textbook was carried out which claimed to be designed following new methods of teaching and learning. Though the results suggest that students who used only this textbook also improved their reading and writing skills, but they did not improve their end-results as much as those who were treated with the application of lean. Lean implications for teaching and learning suggest that teachers can constantly adapt and reformulate their teaching materials in order to lead the learners to higher achievements. Dennis (2002) describes the system of lean as a house, with some elements. The lean house has an input and a foundation. Two exterior walls and an interior. The input and foundation as data and facts, the two exterior walls are delight customers, and improve the processes. Interior is the teamwork. This house helps to understand lean better. The current study suggests that it is better to teach students with using lean as a method in language teaching.

The focus of the current study was methodological and to use lean as an effective method to teach the learners with better results. Therefore, it is clear in advance, if the teachers and lean administrators can adapt their own textbooks which are specially designed or can develop activities accordingly and this might lead to better results. It is common that teachers have their own preferred teaching styles and

methods or sometimes textbook activities direct their way of teaching. However, as the results of this study demonstrate, learners have different ability to improve their skills in a different range by using various techniques and different methods. Therefore, having this diversity demands teachers to use varied teaching styles and applying lean as an innovative method can be a good choice.

As it is appeared in the findings, applying lean different levels of contribution to the improvement of learners' reading and writing skills. It was found that learners with the class that was run by the lean system improved the learners especially in reading skills. This suggests that teachers may realize that using lean as an innovative method increases the performances of the learners and find out which methods appear to provide the most to the improvement of learners' reading and writing skills, then they can teach and expect better results from the projects they want to boost.

6.4. MODEL ANALYSIS

As English language is one of the important factors and keys to combine the whole speakers of the world, different methods and ways have been used to teach English. Teaching English for specific purposes is crucial and noticeable in English language teaching field. After developing the importance of teaching languages, the term needs analysis appeared in the field. Some needs analysis models were investigated in the field.

In the field of ESP, there are different numbers in models of needs analysis such as Munby (1978), McDonough (1984), Hutchinson & Waters (1987), Robinson (1991), West (1994), Jordan (1997) and Dudley-Evans & St. John (1998). These models aimed to find the needs of the learners.

The achievement of the learners in the model was developed in this study depending on the needs of the students in reading and writing. The application was closely related to what the teachers want to provide during the teaching period, as in this study the participants were from a high school and, then the accomplishment of the specific curriculum was taken into account. Widdowson (1983) wrote about the difference between English for specific purposes and English for general purposes.

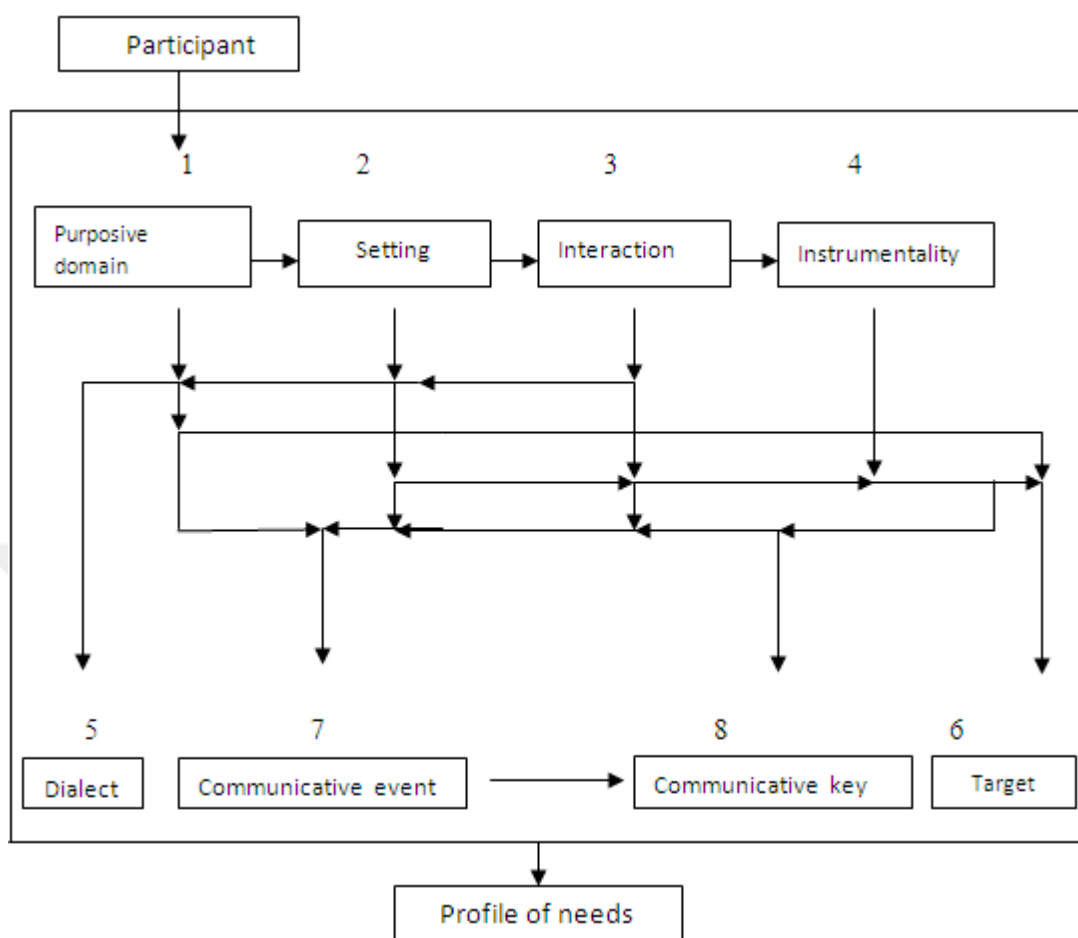
He states that English for specific purposes intends to develop competence, which has been restricted. English for general purpose aims to develop general capacity.

Hutchinson and Waters (1987) explain that English for specific purpose is constructed on the needs of the learners and it is a language approach. According to their definition, it includes the learners, the required language, and the context of learning.

Language needs analysis has different components. The most important components are Target Situation Analysis, Learning Situation Analysis, and Present Situation Analysis. West (1994) explains that Target Situation Analysis focuses on finding what the students require in an occupational or academic setting. Dudley-Evans and St. John (1998) state that Learning Situation Analysis shows "why the learners" want to learn the language. Robinson (1991) argues that Present Situation Analysis shows the strength and weakness of the learners.

In the field, some writers have designed models to identify the needs of language learners. Munby's "Communicative Syllabus Design (1978) is one of the oldest models in the field (see figure 2.).

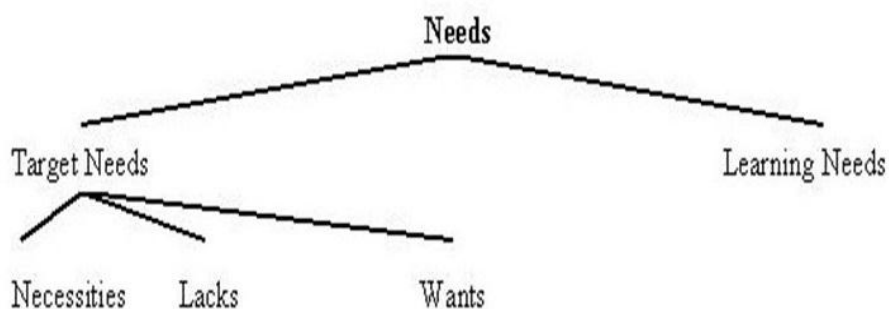
Figure 2. Communication Needs Processor



(Munby, 1978)

Another model of ESP needs analysis that was designed by Hutchinson and Waters (1987) is known as ESP Needs Analysis Model it is also shown in (Appendix XVII).

Figure 3. ESP Needs Analysis Model (McDonough, 1984)



To Hutchinson and Waters (1987) the necessities are what the learners want to achieve or what their necessities are. “Lacks” are what the practitioners want to find that the students are weak in and they do not have it. “Wants” are what the students want to learn. The needs analysis models concentrate on what the students need.

Iwai et al. (1999) conclude that needs analysis commonly means collecting needed information to develop a curriculum to achieve the needs of a specified group of students. John (1991) states that one of the first steps is “needs analysis” in course design. As Munby’s *Communicative Syllabus Design* in 1978 published, it had been experienced in different situations. Munby (1978) provided the terms of participants, communication needs processor, profile of needs, meaning processor, the language skills selector, the linguistic encoder, and the communicative competence specification. A framework was proposed by Hutchinson and Waters (1987) as an analysis of learning needs, they are the followings:

1. What makes the learners to take the course?
2. How does the learner learn?
3. What source is available?
4. Who are the learners?

Hutchinson and Waters (1987) also state discourse analysis. Before this, they think that pedagogic is the primary factor behind register analysis. Then, they found how the sentences were combined into discourse analysis. The models of Dudley-Evans and St John 1998, *English for Specific Purposes*, Needs as Necessities, Lacks and Wants are also shown in (Appendix XVI).

The following model of lean, which will be proposed in the next section, is closely paid attention to the components of the needs analysis.

6.5. THE MODEL

Mager (1975) states that in the curriculum the teachers should know where they are going. If they do not know what to do, then how do they know about the time and ending up the syllabus? To apply lean as an innovative method for preparatory classes to increase learners’ achievements, a syllabus model depending

on the analysis of the result and steps of the study is designed in this part. The data collected through applying lean as an innovative method in an experimental study for three months in Iraq.

The suggested model was based on the system that lean works on as can be seen in figure 1. The model begins with defining the program of the institution which wants to meet the goals and needs of the program. Lean program is specified to be applied in the program to achieve the needs. The accessibility of lean as an innovative method is the following phase which is being prepared to be applied. The accessibility of lean shows how it is possible to apply lean in a specific field as this study focuses on lean implementation in English language teaching as an innovative method. It is followed by outlining the program as it clarifies the major goals and identifying the goals in the program. Lean is a very consistent method of different steps. Identifying the goals from the very beginning is the base of the process. The goal is evaluated after it is identified according to the lean process and program as an innovative method.

Another major component of the model is a “needs analysis” process of the program to identify and verify the duration of time which is needed to figure out the holidays, including the exams and off days. Assessment of the unit time periods and different sections of the program enable the researcher to define the objectives and goals. Specifying the goals in the program is strongly related to the program. According to the lean practices, sections of the materials with verifying the steps and creating pull connection between them make lean application ready.

When the application of lean as an innovative method is ready, the students’ information, registration, expectations, their attitudes toward lean, individual characteristics and students’ parent supports need to be considered as a great respect to the stakeholders. To start the application, verification and assessment will play an important role to make it completed. The projects and needed steps of application are evaluated and assessed to make the lean method more effective. In the practices, it involves in completing the program before completing the syllabus but in consistent and together.

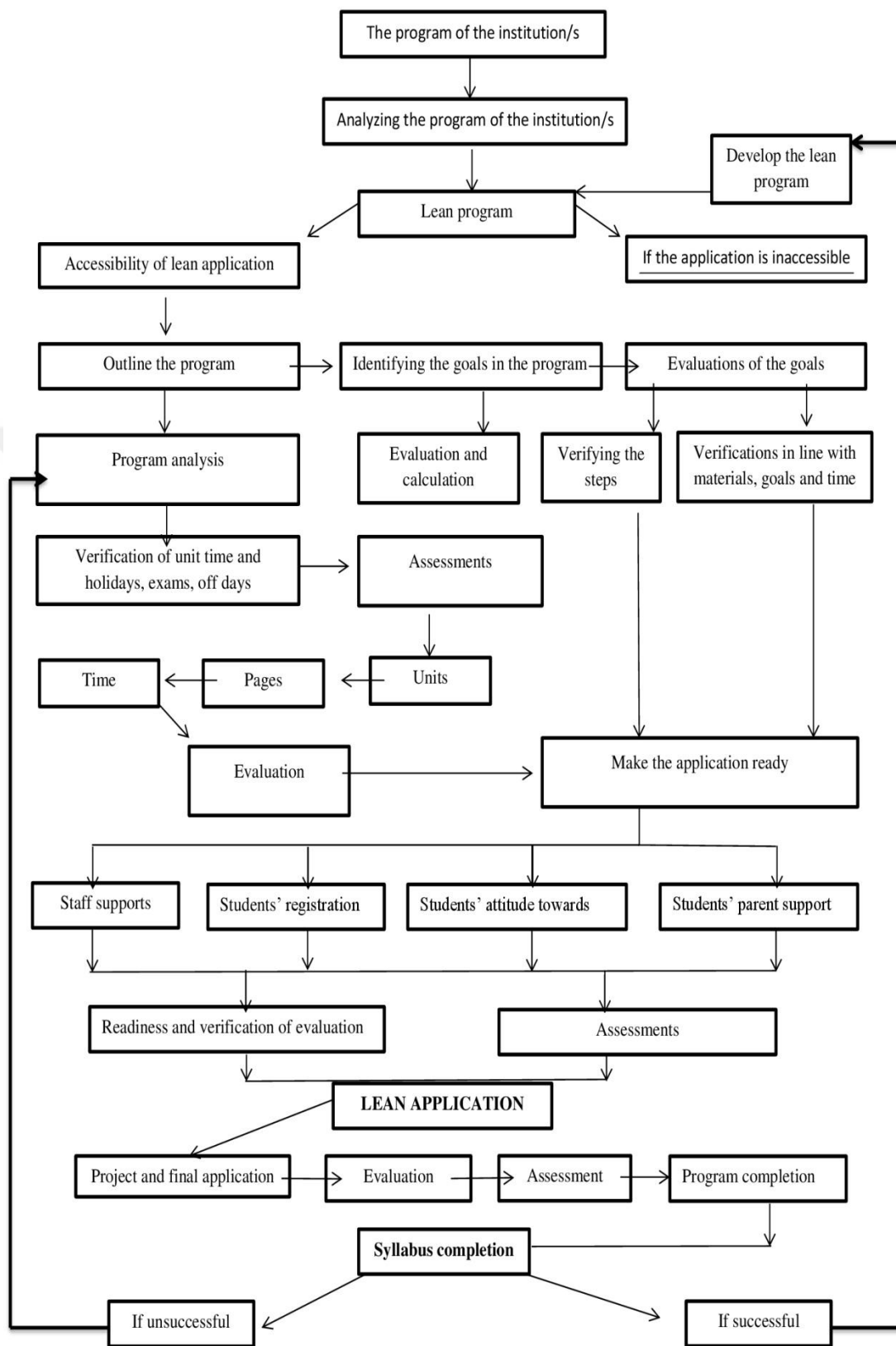
If the application of the lean-centered model would be successful, the process continues but differently in the next program. It would be different as lean never

stops in a level. It tries to make the process effective with better achievement. If the use of the lean-centered model could not achieve the pre-designed meets and goals, then it starts again from the analysis of the program. The program is ready to be applied but verification of the steps again is needed to make the project more effective. It is assessed and evaluated again to make the phases ready to product the achievement. Three stages will be evaluated in the program. They are time, pages, and the units of the program.

The suggested lean-centered model is expected to increase the end result of the program as it provides guidelines to make each program more efficient and successful. The lean-centered model design is based upon the lean techniques, principles, and practices as were explained in the previous chapters, and also the study was the main guideline to derive this model.

One apparent difference between this model and the other models is the progress they make. The lean-centered model never stops in a certain point, it works to get continuous improvement in terms of practices and application of lean. This models does not stop in a level after achieving the goals, if it fails, it develops the program to meet the needs. If it will be successful, it tries to reach the state of perfection. It works to eliminate the wastes in a process. The model does not move or jump into the next level until meeting the demands that it works for. It gives respect to all the stakeholders of the process from the parents to the students to the staff and managers (see figure 4).

Figure 4. A Lean-centered Model



6.6. THE SHAPE OF THE MODEL

The syllabus was based on the practices and principles of lean as mentioned in chapter two of the study. Lean as an innovative method helped to recognize the needs of the learners at a co-educational high school. After having applied lean to increase the achievement of the learners and analyzing the results, according to lean method, it has been understood that lean as an innovative method or syllabus design is effective when it includes all the practices and steps of lean in terms of system and principles. Introducing lean as an innovative method was the starting point of the study because making lean ready to apply is considered as the most important part of the study which the experimental study was based on. In order to motivate the learners, the method with its steps, goals, and components were introduced.

Yalden (1984) replaces the word of syllabus to method. Syllabus is now considered as a tool, with getting help from the syllabus designer. The teachers use them to meet the needs of the learners. It also helps to carry out all the activities, which are taken place in classrooms. Learners of English language want to increase all the skills to make their production better and improve their language. The researcher was allowed to combine the skills of reading and writing to reach the aim of the learners. While reading and writing are considered very important, the syllabus in lean method gives a great and effective respect to the learners to make decisions and preferences to accomplish every step of learning before starting the next. In this respect lean as an innovative method is learner-centered. So as to include all the qualities in the method, a lean-centered model was developed to meet the needs of the students and schools. Considering the goals, the proposed syllabus was designed mainly upon a process of increasing end-results.

6.7. COURSE DESCRIPTION

The experimental study as a course focuses on increasing and developing reading and writing skills in English language teaching at a high school. The students who study at high schools take different subjects to study in a year. The students take four lessons a week, each lesson is 40 minutes. The hours of studying English is divided to be studied in four days. The course primarily focuses on completing the program on time with a better production. Dubin and Olshtain (1986) explain that in order to teach successfully in a school, it is important to know all about the subjects

which are taught and the students have to study. In addition, the teachers should know their levels of English to teach the learners if they were not native speakers.

Within the course, the principles of lean were used with the elimination of the nine wastes in education as they are *nine wastes* in order to practice lean vigorously. The wastes are overproduction, talent, motion, time, processing, assets, capacity, knowledge and, defects. Finocchiaro and Brumfit (1983) state how the curriculum can be affected. For example, they mention functional-nationalism, which has a great impact on the learners and their communicative targets in the curriculum. The teachers should know what they concentrate to teach. Considerable focus was mainly on practicing lean to raise students' achievements. This model concentrated on the need of the students to be equipped with the skills of reading and writing and increasing language learning achievement. To lead the students towards success at high schools or any other departments or institutions, lean enables the students to encounter and participate in how the end-result develops by providing them needed construction and information about lean before applying it.

6.8. RATIONALE

Learners begin learning English in this course at level A2, usually have a low level of reading and writing. Students in English language schools and department, or learners of English must build a strong base in reading and writing as they are basic academic parts of any languages. Reading and writing are fundamental skills to put thoughts and study in academic researches. Furthermore, reading and writing skills are good foundations of having books and keeping data in existence forever. The practices allow the learners of English to develop their skills during the program. At the global level, English language is the base of business and technology. In a wider sense, English is the language of science. Teaching and learning English is a process which must be developed and tested to meet the needs of the students. The syllabus is based on the needs of the learners and processing lean principles as a method in the experimental study by conducting it in a high school.

6.9. GOALS AND OBJECTIVES BASED ON THE MODEL

Locke (2013) states that with complex tasks, learning goals are very crucial for improving performances. Drucker (1996) stated that objectives in every area are

needed where results and performance directly and effectively affect the personality and survival of the business. Thus, every team member to have an important role in the program and managing the process successfully. Richards and Rodgers (1986) argued that learning a language needs to know the different blocks and rules of the language. By continuing the process, these elements will be combined, it forms phoneme, then to morpheme and followed by words and sentences. So the learners can evolve their skills systematically.

6.10. GOALS OF THE PROGRAM

The program is designed to:

- i. Prepare the students of high schools to increase their achievements and meet their needs.
- ii. And to comprehend the materials and the course.
- iii. Develop learner's reading and writing skills.
- iv. Allow students to be an effective participant of the whole process.
- v. Eliminate all the wastes in the program that add no value to the end result.

6.11. OBJECTIVE OF THE PROGRAM

- i. Finishing the program on time and resulting in a better achievement.
- ii. Developing and increasing the end-result.
- iii. Completing the whole program.
- iv. Completing a step before starting the next.

6.12. EVALUATION

The test used in this study consists of reading and writing parts. The learners will be graded with 60 points for answering the different parts of reading. Each item costs one mark as the reading test had 5 parts. The writing test consists of 4 parts. In the end, the total mark of the test is 60 points. In a process, to know the ability of the students, they should be tested to know what they need to be improved in designed curriculum (see Table 27 and 28).

Table 27. Gradig distribution of reading skill

Parts of the test: Reading section	
Part one	5 marks
Part two	5 marks
Part three	10 marks
Part four	7 marks
Part five	8 marks
Total	35 marks

Table 28. Grading distribution of writing skill

Parts of the test: Writing section	
Part six	5 marks
Part seven	10 marks
Part eight	5 marks
Part nine	5 marks
Total	25 marks

6.13. REQUIRED TEST

The required test for reading and writing skills is Cambridge Key English Test (KET) reading and writing sections to find out the level of learner's performances in reading and writing sections. The test is considered as a reliable and an authentic test to assess students achievements according to (CEFR). It is a test used in ESL/EFL for putting the students on the test to ensure and assess their ability.

6.14. INSTRUCTIONAL PROCEDURES

- i. The teacher will teach authentic materials with its practices and exercises.
- ii. All parts of the program are taught following the instructions and practices of lean.
- iii. The learners have great roles from the very beginning of the course and in class activities.
- iv. Students need to develop their reading and writing skills, as the four skills are the basic parts of each program.
- v. To increase the students' skills, the teacher uses the formal language of the authentic program, which is being taught.

- vi. The students during the teaching process collect the ways to improve their skills.
- vii. The students' plans and intentions are important parts of the lessons as they are major parts of the program.
- viii. Expose the students to the reading and writing skills during the program.

6.15. GENERAL COURSE REQUIREMENTS

- i. Students' registration.
- ii. Students take pre-tests to find what is the next step like in the process and to Find their weak points to be worked on.
- iii. To assess their goals in accordance with the program.
- vi. Attendance, learners must attend the lessons.
- v. Materials, the students are given what is needed to accomplish the program, they must attend and bring them into classes.
- vi. Follow the instructions of the school staff and objective management.
- vii. The students and teachers must work according to the plan to complete the program such as exam dates and assignment submission.
- viii. Applying 'post-test' to explore to which extent the needs of students have been met and to assess the end-result increase.

6.17. CONCLUSION

The present research study shed light on the effectiveness of applying lean as an innovative method in the field of English language teaching. The findings point to the importance of implementing this method and its effects on improving writing and reading skills performances. The difference between the control and experimental groups was statistically significant. It is hoped that the findings would encourage teachers to use different methods of teaching to meet learners' needs and be flexible in applying different methodologies and techniques in their classrooms.

It is not possible or to happen to teach languages thoroughly. Course designers or teachers should be selective. By selection, the teachers know what the

language is and in language learning what is important (Basturman, 2014). The study applied lean as an innovative method with its evaluation as Dickens and Germaini (1998) think that evaluation is about creating judgment and giving evidence and clue to show why is a process worth something. In addition, evaluation is to address the needs of the stakeholders. In this experimental study, lean was applied as an innovative method to increase learners' achievement in reading and writing skills. Edge and Mann (2013) define innovation as a process which needs concentration. A new idea is not considered as an innovation but it needs strong attention to the ways we train or teach as the topic is being completed. It can be considered as the link between lean and innovation as lean analyzes every step before applying it. Innovations will be affected by some factors according to Dickens and Germaini (1998). The factors are "(1) teachers' attitude, (2) clarity of the innovation proposal, (3) teachers' training, (4) communication and support during implementation, (5) compatibility of the innovation with the contingences of the classroom and the wide educational system, p. 11". Doman, (2011) explains after learning the principles, practices, and tools of lean, then the students applied all to the processes of their universities and engaging them to the learning processes.

It aimed to investigate the possible impact of applying lean as an innovative method (in improving reading and writing skills of learners of English as a foreign language). Stukalenko et al. (2016) state that on a defined level of education, innovative activity is a system of measures to provide innovation. Innovative phenomena consist of two different theories, they are the theory of pedagogical innovation and innovative learning. The theory of pedagogical learning means having innovations in the system of education to reconstruct, modify, and improve the system of education with the different parts and aspects of education. The theory of pedagogical innovations can be creating models, new structures, new acts, and learning paradigms. In the process of education, innovation learning is seen as a specific type of managing the knowledge and goal-oriented founded activity. As the society moves to a new high stage of development, innovative learning is the reaction to meet the goals of education. It also supports learning and makes changes in the different cultures and social environments. It tries to solve the problems, which faced by individual or public.

In the recent years, the teachers have been expected to make their own curriculum. They are expected to design, apply, and evaluate what they use as a curriculum. The teachers see it as they have the primary responsibility for all the tasks in the process. Some teachers feel very comfortable as their roles are expanded, and this is in line with what lean as an innovative approach gives the participants and staff a strong respect. Some teachers are asked to develop the syllabus by expertise, these part of the teachers think that they are asked to do something that they are not trained for. EFL learners could better improve their reading and writing skills when their classes were presented through lean as an innovative method of teaching that led to diverse areas of interest and learning. Lean is a method to language learning and considers what adds value to the process of learning and teaching, and eliminates what does not add value to the result. Learners tend to feel more comfortable and accessible to read, write and participate when they are addressed that what they study is what they want to achieve, i.e., their goals were concentrated on and covering the knowledge which was important.

Following lean as a an innovative method of teaching in English as a foreign language, which derived from the Toyota Production System, will open a window for teachers to realize various techniques and principles in teaching and learning amongst the learners. This has been used for the first time in English language teaching to increase students' achievement, reading and writing . It is possible to announce that lean as an innovative method will be more likely to led t more achievement and produce better results. Borbye (2010) states that teachers develop innovation that is endless seemingly. In classrooms or schools, teachers can use individualism or collectivism if it seems comfortable for them. It should be known that not all innovations could be successful or valuable. One of the important parts of the success is the support from the school administrators. When the teachers create this effort and have coworkers, practice or principles, they should be supported but not stopped them by different obstacles.

The lean-centered model was designed to finish any program institutions with a better achievement. Lean-centered model concentrates on meeting the needs of the whole program, to finish the program on time and result a better achievement, developing and increasing the end-result, completing the whole program, and completing every step before starting the next. The designed program in the lean-

centered model focuses on preparing the students of any institutions or stakeholders to increase their achievements and meet their needs, and to comprehend the materials and the course. In this study, specifically developing learner's reading and writing skills was studied and paid strong attention, to allow students to be an effective participant of the whole process. In addition, the model is designed to eliminate all the wastes in the program that add no value to the result. Finally, the model works on preparing the students of high schools to increase their achievements and meet their needs with completing the materials and the courses effectively. Pienemann and Johnston (1987) state that application and learning should be ordered in language learning. They refer to learning grammar as they divide them in different steps which the learners meet their needs. The model arranges the syllabus in a way to finish the program on time. Lean as an innovative method gives respect to the stakeholders. It is also applied in the model that the students and students' parents play an important role in developing the program. To make the production and achievement of the learners, lean never stops. If the end achievement is successful, it tries to improve the application of the program for the next time. If it fails, it seeks to find the solution to the problems. To improve a process, innovation must be focused on by measuring the steps and verifying them to make the application more effective.

Borbye (2010) explains that innovation can be an effective way for the students to stretch themselves intellectually. When the students are allowed to make something, they will be very happy to see that they can make a change on society and have a positive effect on it. This is a very important aspect of making the products better in the companies and it is critical that the companies allow the students to have their roles in developing the process. To go to the top grade, the students should be asked to invent or make a new product. Broten and Yule (1983) state that it is difficult to find a principle that the world agree on. The emphasis should be changed from focusing on providing interesting materials to carry out and do the materials interestingly, not to think about their interests. The materials should meet the achievements for what they are designed.

In 1970, two studies were conducted in second language acquisition by Duly and Burt in 1973 and Bailey, Madden, and Krashen in 1974. The studies focused on how the students learned in a particular order focusing on grammar items. The order, which was used in the study, was the same for all the ages. So orders are important to

apply the program. Innovation plays an important role in solving the problems. Noonan (2003) states that when having a problem or a crisis, which have ripple effects on other parts of the development, then innovation and renewal can be considered as a productive response. Innovations and renewals can be considered as two useful weapons to combat the bad effects of a crisis.

6.16. SUGGESTIONS FOR FURTHER RESEARCH

The participants of the present study were from a coeducational preparatory school in Sulaimani province in Northern Iraq. Therefore, more studies need to be conducted aiming students from other schools in other cities of the country or other cities to examine whether the application of lean as an innovative method has any impacts on the achievement of the learners. Further studies should also cover the impacts of using lean as an innovative method with school-aged children on other language skills, overall achievements and motivation in this context.

The fact that this study only addressed one level of high school, namely 11th graders, makes it hard to generalize the findings and results since it might not be the case that other students if they will gain the same results as the participants of this study had done. For that reason, more studies and researches aiming other levels or classes of high schools need to be conducted.

This research found out that using lean as an innovative method of teaching in English Language can improve learners' reading and writing skills and is also effective . It makes the end production better in general but some elements of the writing and reading tests do require further research. It seems that learners studying with lean as an innovative method improved their reading more than their writing skills.

This indicates that teaching with the implementation of lean could have been a reason or factor behind this improvement in learners' reading achievement more than the writing section. In the scientific pedagogic knowledge, innovation theory is new in education. Innovation theory can be considered as the integration of three subjects of mastering, development, and novelties. Innovation theory is defined in educational systems and in an innovative environmental as an innovative process,

following by taking place the innovation (Stukalenko, Zhakhinaa, Kukubaeva, Smagulova, & Kazhibaeva, 2016).

Yet, this is not enough clear from the findings of the current study since the assessment of the study was reading and writing in general not writing or reading alone. Therefore, experimental studies focusing on reading alone should be conducted in order to find out whether lean better improves learners' reading or not. Hence, it should be studied whether this is the case with the students in the North of Iraq or not. More experimental studies focusing on speaking also should be conducted in order to find out whether lean as an innovative method improves learners' speaking better or not. The ways that listening and what stimulates the learners should be studied, (Anderson & Lynch (1988) ; Wright (1987). an experimental study to improve learners' listening can be conducted.

Future research studies should focus on the impact of applying lean as an innovative method on finishing the pre-scheduled syllabus and find the differences between the achievement of the learners between male and female participants since the findings of the current study show that the learners improved their performances differently.

In practicing lean, Comm and Mathaisel (2005) state that colleges or universities are good candidates for lean or sustainable practices. It happens more on the operations of the enterprise rather than the teaching or research side. The reason behind this is because there have been important changes in the way that higher education has been regarded by the public. Therefore, experimental studies are recommended to compare other methods of teaching English with lean application and instructions as an innovative method.

REFERENCES

- Alagaraja, M. & Egan, T. (2013). The strategic value of HRD in lean strategy implementation. *Human Resource Development Quarterly*, 24(1), 1-27. <http://dx.doi.org/10.1002/hrdq.21155>
- Allen, T. (2010). *Introduction to engineering statistics and lean sigma* (1st ed.). London: Springer.
- Alves, A., Dinis-Carvalho, J., & Sousa, R. (2012). Lean production as promoter of thinkers to achieve companies' agility. *The Learning Organization*, 19(3), 219-237. <http://dx.doi.org/10.1108/09696471211219930>
- Anderson, A., & Lynch, T. (1988). *Listening* (1st ed.). Oxford: Oxford University Press.
- Antony, J. (2014), "Readiness factors for the Lean Six Sigma journey in the higher education sector", *International Journal of Productivity and Performance Management*,. 63(2) 257 – 264 pp Permanent link to this document: <http://dx.doi.org/10.1108/IJPPM-04-2013-0077>
- Arnheiter, D, Maleyeff, J (2005), The integration of lean management and Six Sigma. *The TQM Magazine*, 17 (1) pp. 5 – 18
- Ary, D., Jacobs, L., Sorensen, C., & Razavieh, A. (2013). *Introduction to research in education*. Belmont, CA: Cengage Learning.
- Bailey, K. C. Madden, and S. Krashen (1974). 'Is there a "natural sequence" in adult second language learning?'
- Balzer, W. K. (2010). *Lean higher education: Increasing the value and performance of university processes*. New York: Productivity.
- Barker, C., Pistrang, N., Elliott, R., & Barker, C. (2002). *Research methods in clinical psychology* (2st ed.). West Sussex, John Wiley & Sons.
- Basturkmen, H. (2014). *Ideas and Options in English for Specific Purposes* (1st ed.). Mahwah: Taylor and Francis.

- Bechhofer, F. & Paterson, L. (2000). *Principles of research design in the social sciences* (1st ed., p. 13). London: Routledge.
- Bicheno, J. (2008). *Lean toolbox for service systems. England: lean Enterprise Research Centre, Cardiff Business School and University of Buckingham.*
- Bell, S. (2006). *Lean enterprise systems* (1st ed.). Hoboken, NJ: Wiley.
- Bentley, W. & Davis, P. (2010). *Lean six sigma secrets for the CIO* (1st ed.). Boca Raton: CRC Press.
- Bista, K. (2011). Teaching English as a foreign/second language in Nepal: Past and present. *English For Specific Purposes World, 11*(32).
- Blank, Steven G. (May 2013). "Why the lean start-up changes everything". *Harvard Business Review, 91* (5), 63–72
- Bolman, L. G., & Deal, T. E. (2008). *Reframing organizations: Artistry, choice and leadership*. San Francisco: Jossey-Bass.
- Borbye, L. (2010). Out of the Comfort Zone: New Ways to Teach, Learn, and Assess Essential Professional Skills --An Advancement in Educational Innovation. *Synthesis Lectures On Technology, Management, And Entrepreneurship, 2*(1),1-79.
<http://dx.doi.org/10.2200/s00251ed1v01y201001tme002>
- Bowen, H. K., & Spear, S. (1999). Decoding the DNA of the toyota production system. *Harvard Business Review, 77*(5), 97–106.
- Boysen N., and Bock S. (2011). Scheduling just-in-time part supply for mixed-Model ssembly lines. *European Journal of Operational Research, 211*, 15–25
- Bridges, D. & McLaughlin, T. (1994). *Education and the market place* (1st ed.). London: Falmer Press.
- Brockberg, K. H. (2008, April). Becoming lean: Stages of lean implementation [Electronic version]. In S. Flumerfelt (Ed.), *White papers. The Pawley Institute for Learning*. Available: <http://www4.oakland.edu/?id=4709&sid=12>
- Brockberg, K. H. (2008, February). The origins and elements of lean: A brief review of the literature. In *White Papers. The Pawley Institute for Learning*. Retrieved from http://www4.oakland.edu/upload/docs/Pawley/White_Paper_Origins_and_Elements_Lit_Review_021208.pdf
- Brown, G. (1983). *Teaching the spoken language* (1st ed.). Cambridge: Cambridge University Press.
- Brown, J. (1995). *The elements of language curriculum* (1st ed.). Boston: Heinle & Heinle.

- Brumfit, C. (1984). *General English syllabus design* (1st ed.). Oxford [u.a.]: Pergamon Pr. [u.a.].
- Burton, T. T., & Boeder, S. M. (2003). *The lean extended enterprise: Moving beyond the four walls to value stream excellence*. Boca Raton, FL: J. Ross Publishers.
- Cambridge ESOL Examinations. (2003). *Cambridge Key English test 2: Examination papers from university of Cambridge ESOL examinations*. Cambridge: Cambridge University Press.
- Cambridge ESOL Examinations. (2012). *Cambridge Key English Test. (KET) CEFR level A2*. Cambridge: ALTE
- Candlin, C. (1987). 'Syllabus design as a critical process' in Brumfit.
- Castro, H., Putnik, & G. Shah, V.(2012) "A review of agile and lean manufacturing as issues in selected international and national research and development programs and roadmaps", *The Learning Organization*, 19 (3), 267 – 289
- Comm, C., & Mathaisel, D. (2005). A case study in applying lean sustainability concepts to universities. *International Journal Of Sustainability In Higher Education*, 6(2), 134-146. <http://dx.doi.org/10.1108/14676370510589855>
- Comm, C. L., & Mathaisel, D. F. X. (2003). Less is more: A framework for a sustainable university. *International Journal of Sustainability in Higher Education*, 4, 314–323.
- Comm, C.L. & Mathaisel, D.F.X. 2005a, "An exploratory study of best lean sustainability practices in higher education", *Quality Assurance in Education*, 13(3), 227-240.
- Cotton, C. (2003), published interview, *Association of Independent Colleges and Universities of Massachusetts*, Boston, MA
- Creswell, J. W., & Plano Clark, V. L. (2011). *Designing and conducting mixed methods research* (2nd ed.). Thousand Oaks, CA: Sage.
- Dattakumar, R. and Jagadeesh, R. (2003), "A review of literature on benchmarking", *Benchmarking: An International Journal*, 10 (3), 176-209.
- Dawson, C. (2002). *Practical research methods* (1st ed.). Oxford: How To Books.
- De Vaus, D. (2001). *Research design in social research* (1st ed., p. 56). London: SAGE.
- Dennis, P. (2007). *Lean production simplified: A plain language guide to the world's most powerful production system*. New York: Productivity.
- Dennis, P. (2010). *The Remedy* (1st ed.). Hoboken: John Wiley & Sons.

- Dobbelaer, S. G. (2010, April). Do high-stakes assessments improve learning? [Electronic version]. In S. Flumerfelt (Ed.), *White papers. The Pawley Lean Institute*. Available: <http://www.oakland.edu/?id=4709&sid=12>
- Dörnyei, Z. (2007). *Research methods in applied linguistics* (1st ed.). Oxford: Oxford University Press.
- Drucker, P. (1996). *Management by objectives: SMART*. Retrieved on 22nd June, 2013 from [http:// E:\Management by Objectives \(Drucker\)_ SMART.htm](http://E:\Management by Objectives (Drucker)_ SMART.htm)
- Dubin, F., & Olshtain, E. (1986). *Course design* (1st ed.). Cambridge: Cambridge University Press.
- Dudley-Evans, T., and St. John, M. (1998). *Developments in ESP: A multi-disciplinary approach*. Cambridge: Cambridge University Press .
- Edge, J., & Mann, S. (2013). *Innovations in pre-service education and training for English language teachers* (1st ed.). London: British Council.
- Elda Nikolou] Walker & Kathy Lavery (2009) A work based research assessment of the impact of lean manufacturing on health and safety education within an SME, *Research in Post-Compulsory Education*, 14 (4), 441-458, DOI: 10.1080/13596740903360992
- El-Haik, B. & Al-Aomar, R. (2006). *Simulation-based design for lean six sigma* (1st ed.). Hoboken, N.J.: Wiley.
- Ellis, R. (2012). *Language teaching research and language pedagogy*. Malden, Mass.: Wiley-Blackwell.
- Emiliani, B. (2008), *Practical Lean Leadership: A Strategic Leadership Guide for Executives*, Lean Enterprise Institute, Cambridge, MA.
- Emiliani, M. L. (1998). Lean behaviors. *Management Decision*, 36, 615-631.
- Feld, W. (2001). *Lean manufacturing* (1st ed.). Boca Raton, FL: St. Lucie Press.
- Finn, L., & Geraci, L. (2012). Implementing Lean for process improvement: Strategies and recommendations for process improvement in financial affairs. *Education Advisory Board*, University Business Executive Roundtable.
- Flumerfelt, S. (2008), "Lean thinking for schools: learning to identify value and eliminate waste", *Education Reports*, online, July 21, available at: [www.educationreport.org/pubs/mer/ article.aspx?id%49674](http://www.educationreport.org/pubs/mer/article.aspx?id%49674) (accessed 20 March 2011).
- Flumerfelt, S. F. (2008, April). Is lean appropriate for schools? [Electronic version]. In S. Flumerfelt (Ed.), *White papers. The Pawley Lean Institute*. Available:

- Flumerfelt, S., Bella Siriban-Manalang, A., & Kahlen, F. (2012). Are agile and lean manufacturing systems employing sustainability, complexity and organizational learning?. *The Learning Organization*, 19(3), 238-247. <http://dx.doi.org/10.1108/09696471211219976>
- Francis, D. (2014). Lean and the learning organization in higher education. *Canadian Journal Of Educational Administration And Policy*, (157).
- Gadre, A., Cudney, E., & Corns, S. (2011). Model Development of a Virtual Learning Environment to Enhance Lean Education. *Procedia Computer Science*, 6, 100-105. <http://dx.doi.org/10.1016/j.procs.2011.08.020>
- Garvin, D. (1993). Building a learning organization. *Harvard Business Review*, 7(4), 78–91.
- George, M. L., Rowlands, D., Price, M., & Maxey, J. (2005). *The Lean Six Sigma pocket toolbox*. New York: McGraw-Hill.
- Gross, J. & McInnis, K. (2003). *Kanban made simple* (1st ed.). New York: AMACOM.
- Hamilton, J. (1996). *Inspiring innovations in language teaching* (1st ed.). Clevedon: Multilingual Matters.
- Hanushek, Eric A. (1994) *Making Schools Work*. 1st ed. Washington, D.C.: Brookings Institution., Print.
- Harms, R. (2015). Self-regulated learning, team learning and project performance in entrepreneurship education: Learning in a lean startup environment. *Technological Forecasting And Social Change*, 100, 21-28. <http://dx.doi.org/10.1016/j.techfore.2015.02.007>
- Holweg, M. (2007). The genealogy of lean production. *Journal Of Operations Management*, 25(2), 420-437. <http://dx.doi.org/10.1016/j.jom.2006.04.001>
- Houston, D. (2008). Rethinking quality and improvement in higher education. *Quality Assurance in Education*, 16(1), 61–79.
- Hutchinson, T., and Waters, A. (1987). *English for specific purposes: A learning-centered approach*. Cambridge: Cambridge University Press.
- Iwai, T., Kondo, K., Limm, S. J. D., Ray, E. G., Shimizu, H., and Brown, J. D. (1999). *Japanese language needs analysis*. Available at: <http://www.nflrc.hawaii.edu/Networks/NW13/NW13.pdf>
- Jackson, P. (2012). *What is education?* (1st ed., p. 2). Chicago: University of Chicago Press.

- Johns, A. (1991). English for specific purposes: Its history and contribution. In Celce-Murcia, M. (Ed). *Teaching English as a second or foreign language* (pp.67-77). Boston, MA: Heinle & Heinle.
- Jordan, R. R. (1997). *English for academic purposes: A guide and resource book for teachers*. Cambridge: Cambridge University Press.
- Karnes, F., & Bean, S. (2001). *Methods and materials for teaching the gifted*. Waco, Tex.: Prufrock Press.
- Kelly, A., Lesh, R., & Baek, J. (2008). *Handbook of design research methods in education* (1st ed., p. 86). New York: Routledge.
- Kim, D. H. (1993). The link between individual and organizational learning. *Sloan Management Review*, 35(1), 37–50.
- Kniberg, H. (2011). *Lean from the trenches* (1st ed.). Dallas, Tex. [u.a.]: Pragmatic Bookshelf.
- KIZILDAGI, A. (2009). Teaching English in Turkey: Dialogues with teachers about the challenges in public primary schools. *International Electronic Journal of Elementary Education*, 1, 1307-9298
- Laborda, J. (2011). Revisiting Materials for Teaching Languages for Specific Purposes. *The Southeast Asian Journal Of English Language Studies*, 17(1)(102–112).
- Langer, T. (2011). *The application of Lean thinking for improving processes in higher education institutions: Evidence from three UK case studies*. Queen's University Belfast.
- Larsen-Freeman, D (2000). *Techniques and principles in language teaching*. Oxford: Oxford University Press.
- Lean Consumption. (2017). Harvard Business Review. Retrieved 6 February 2016, from <https://hbr.org/2005/03/lean-consumption>
- Levinson, W. A., & Rerick, R. A. (2002). *Lean enterprise: A synergistic approach to minimizing waste*. Milwaukee, WI: ASQ Quality Press.
- Levitt, B., & March, J.G. (1988). Organizational learning. *Annual Review of Sociology*, 14, 319–340.
- Liker, J. (2004), *The Toyota Way*, McGraw-Hill, New York, NY.
- Locher, D. (2008). *Value Stream Mapping for Lean Development: A How-to Guide for Streamlining Time to Market* (1st ed.). Taylor & Francis Group.

- Locke, E. A., & Latham, G. P. (2013). *New developments in goal setting and task performance*. New York, NY: Routledge
- Mager, R. (1975). *Preparing instructional objectives* (1st ed.). Mumbai: Jaico Pub. House.
- Marchwinski, C., Shook, J., & Schroeder Alexis., (2008). *Lean Lexicon* (1st ed.). USA (One Cambridge Center, Cambridge, MA 02142 USA): Lean Enterprise Institute.
- Mark S. Doman, (2011), "A new lean paradigm in higher education: a case study", *Quality Assurance in Education*,. 19 (3). 248 – 262 Permanent link to this document: <http://dx.doi.org/10.1108/09684881111158054>
- McDonough, J. (1984). *ESP in perspective: A practical guide*. London: Collins ELT.
- McDonough, J., Shaw, C., & Masuhara, H. (2013). *Materials and methods in ELT* (1st ed.). Chichester, West Sussex, UK: Wiley-Blackwell.
- Mead, G., Biesta, G., & Tröhler, D. (2008). *The philosophy of education* (1st ed.). Boulder: Paradigm Publishers.
- Ming, C. G. (2010, January). Can federal initiatives rescue failing schools? [Electronic version]. In S. Flumerfelt (Ed.), *White papers. The Pawley Institute for Learning*. Available: <http://www.oakland.edu/?id=4709&sid=12>
- Munby, J. (1978). *Communicative Syllabus Design*. Cambridge: Cambridge University Press.
- Noonan, S. (2003). *The elements of leadership* (1st ed.). Lanham, Md.: Scarecrow Press.
- Nunan, D. (1985). *Language teaching course design: trends and issues*. Adelaide: National Curriculum Resource Center
- Nunan, D. and J. Burton (1985) *Using learner data in designing language courses: workshop guide*. Adelaide : National Curriculum Resource Center
- Ohno, T. (1988). *Toyota Production System: Beyond large-scale production*. Cambridge, MA: Productivity.
- Pascal, D. (2007). *Lean Production Simplified: A plain-language guide to the world's most powerful production system* (2nd ed.). New York: Productivity Press.
- Pawley, D. (2006). Foreword. In J. Flinchbaugh & A. Carlino (Eds.), *The hitchhiker's guide to lean: Lessons from the road* (pp. ix - xii). Dearborn, MI: Society of Manufacturing Engineers.
- Peters, Frank E.; Potter, Leslie; and Min, Kyung J., (2008) "Developing Students' Understanding of Global Issues through Lean Manufacturing" *Industrial and*

Manufacturing Systems Engineering Conference Proceedings and Posters.
Paper 15. http://lib.dr.iastate.edu/imse_conf/15

- Pienemann, M., & Johnston, M. (1985). *Factors influencing the development of language proficiency* (1st ed.). [Australia]: [publisher not identified].
- Postman, N. (1995). *The end of education (1st ed.)*. New York: Knopf.
- Radnor, Z. and Osborne, S.P. (2013) 'Lean: A failed theory for public services?' ,*Public Management Review*, 15(2), 265-287.
- Radnor, Z. J. & Bucci, G. (2011). *Analysis of Lean implementation in UK business schools and universities*. London: Association of Business Schools.
- Ranky P. G., Kalaba O. and Zheng Y., (2012) "Sustainable lean six-sigma green engineering system design educational challenges and interactive multimedia solutions," IEEE International Symposium on Sustainable Systems and Technology (ISSST), Boston, MA, 2012,1-6.doi: 10.1109/ISSST.2012.6227999
- Rea-Dickins, P., & Germaine, K. *Managing evaluation and innovation in language teaching* (1st ed.).
- Rich, N. (2006). *Lean evolution* (1st ed.). Cambridge: Cambridge University Press.
- Richards, J. (1990). *The language teaching matrix*. Cambridge [England]: Cambridge University Press.
- Richards, J., & Renandya, W. (2002). *Methodology in language teaching* (pp. 235-238). Cambridge: Cambridge university press.
- Richards, J., & Rodgers, T. (1986). *Approaches and methods in language teaching* (1st ed.). Cambridge: Cambridge University Press.
- Ries, E. *The lean startup* (1st ed.). The United States: Crown Business.
- Robinson, A. (1990). *Modern approaches to manufacturing improvement: The Shingo system*. Portland, OR: Productivity Press.
- Robinson, P. (1991). *ESP today: A practitioner's guide*. Prentice Hall. UK: Prentice Hall International (UK) Ltd.
- Ruffa, S. (2011). *The going lean fieldbook* (1st ed.). New York: American Management Association.
- Salli, D. (2005, July 5). *Materials adaptation and development* [Web log course outline]. Retrieved from <http://denizsc.freeservers.com/photo2.html>

- Scott, S. T. (2008, March). An argument for redefining public schools [Electronic version]. In S. Flumerfelt (Ed.), *White papers. The Pawley Institute for Learning*. Available: <http://www4.oakland.edu/?id=4709&sid=12>
- Sehested, C. & Sonnenberg, H. (2011). *Lean innovation* (1st ed.). Heidelberg: Springer-Verlag.
- Senge, P. M. (1990). *The fifth discipline: The art and practice of the learning organization*. New York: Doubleday.
- Shah, R. & Ward, P. (2007). Defining and developing measures of lean production. *Journal Of Operations Management*, 25(4), 785-805. <http://dx.doi.org/10.1016/j.jom.2007.01.019>
- Shingo, S. (1989), *Study of the Toyota Production System: From an Industrial Engineering Viewpoint*, Portland, OR: Productivity Press.
- Simon, H. (1991). Bounded rationality and organizational learning. *Organization Science*, 1, 125–134.
- Smith, R. & Hawkins, B. (2004). *Lean maintenance* (1st ed.). Amsterdam: Elsevier Butterworth Heinemann.
- Spear, S. and Bowen, H. (1999), “*Decoding the DNA of the Toyota production system*”, Harvard Business Review, September-October, 97-106.
- Standard, C. and Davis, D., (1999). *Running Today's Factory: A Proven Strategy for Lean Manufacturing*, SME, Dearborn, MI.
- Stenzel, J. (2007). *Lean accounting* (1st ed.). Hoboken, N.J.: John Wiley & Sons.
- Sutherland, G. (1971) *Elementary Education in the Nineteenth Century*, London, Historical Association
- Stukalenko, N., Zhakhinaa, B., Kukubaeva, A., Smagulova, N., & Kazhibaeva, G. (2016). *INTERNATIONAL JOURNAL OF ENVIRONMENTAL & SCIENCE EDUCATION*, 11(14), 6612-6617. Retrieved from <http://files.eric.ed.gov/fulltext/EJ1116044.pdf>
- Thirkell, E. & Ashman, I. (2014). Lean towards learning: connecting Lean thinking and human resource management in UK higher education. *The International Journal Of Human Resource Management*, 25(21), 2957-2977. <http://dx.doi.org/10.1080/09585192.2014.948901>
- Van Til, R., Sengupta, S., Flidner, G., Tracey, M., & Yamada, K. (2005). Teaching lean manufacturing principles using an interdisciplinary project featuring industrial/academic cooperation. In *Proceedings - Frontiers in Education Conference, FIE. (Vol. 2005)*. [1612258]
- Wardle, D. (1974) *The Rise of the Schooled Society*, London, RKP.

- Weiner, I., Freedheim, D., Schinka, J., & Velicer, W. (2003). *Handbook of psychology* (1st ed.). New York: Wiley.
- West, R. "Needs analysis in language teaching". *Language Teaching* 27.01 (1994): 1. Web.
- Widdowson, H.G. (1983). *Learning purpose and language use*. Oxford: Oxford University Press.
- Wilson, L. (2010). *How to implement lean manufacturing* (1st ed.). New York: McGraw-Hill.
- Wolk, R. (2011). *Wasting minds* (1st ed.). Alexandria, Virginia, USA: ASCD.
- Womack, J. & Jones, D. (2003). *Lean thinking* (1st ed.). New York: Free Press.
- Womack, J. P., & Jones, D. T. (1996). *Lean thinking: Banish waste and create wealth in your corporation*. New York, NY: Simon & Schuster.
- Womack, J. P., & Jones, D. T. (1996, September/October). Beyond Toyota: How to root out waste and pursue perfection. *Harvard Business Review*, 74(5), 140-158.
- Womack, J. P., Jones, D. T., & Roos, D. (1990). *The machine that changed the world: The story of Lean production—Toyota's secret weapon in the global car wars that is revolutionizing world industry*. New York: Free Press.
- Womack, J.P. and Jones, D.T. (2003), *Lean Thinking: Banish Waste and Create Wealth in Your Corporation*, Free Press, New York, NY.
- Wright, T. (1987). *Roles of teachers and learners* (1st ed.). Oxford: Oxford University Press.
- Yalden, J. (1987). *Principles of course design for language teaching* (1st ed.). Cambridge [Cambridgeshire]: Cambridge University Press.
- Yalden, J. (1984a). *Syllabus design in general education* in C.J. Brumfit.
- Yasin, M. (2002), The theory and practice of benchmarking: then and now, *Benchmarking*, 9 (3), pp. 217-43.
- Zhao J., 2007, "Supply chain system planning in complex adaptive system perspective" *2005 International Conference on Services Systems and Services Management*, 2, 1005–1008
- Ziskovsky, B. & Ziskovsky, J. (2010). *Optimizing student learning* (1st ed.). Milwaukee, Wis.: ASQ Quality Press.
- Ziskovsky, B., & Ziskovsky, J. (2007). Doing more with less—going lean in education. *Lean Education Enterprises Inc. White Paper*, 1-18. Available at

<http://www.leaneducation.com/whitepaper-DoingMoreWithLess.pdf> (lastly accessed on 18 July 2013).



APPENDICES





APPENDIX I. CAMBRIDGE'S KEY ENGLISH TEST

Appendix I.

Test 1

PAPER 1 READING AND WRITING (1 hour 10 minutes)

PART 1

QUESTIONS 1–5

Which notice (A–H) says this (1–5)?

For questions 1–5, mark the correct letter A–H on the answer sheet.

EXAMPLE	ANSWER
0 This is broken.	C

1 Children pay less than adults here.

2 Be careful because this will burn.

3 We don't want any money yet.

4 Things are cheaper here.

5 You must pay with cash.

A **SUMMER SALE
LOW PRICES IN ALL
DEPARTMENTS**

B **FIRE DOOR
KEEP CLOSED**

C **LIFT NOT WORKING**

D **TOY SHOP NOW OPEN**

E **BUY NOW
PAY NEXT YEAR!**

F *Keep this nightdress
away from fire!*

G **We do not take cheques
or credit cards.**

H **Under 12s
HALF PRICE**

PART 2**QUESTIONS 6–10**

Read the sentences (6–10) about going to the zoo.

Choose the best word (A, B or C) for each space.

For questions 6–10, mark A, B or C on the answer sheet.



EXAMPLE	ANSWER
0 On Sunday, Tim up early because he was going to the zoo.	B
A stood B woke C went	
6 He put some biscuits and an apple in a bag for his	
A meat B lunch C dish	
7 He took a bus to the zoo and got off outside the entrance.	
A high B important C main	
8 He at the monkeys eating some bananas.	
A enjoyed B watched C laughed	
9 The lions were sleeping under a tree because it was very	
A hot B tired C full	
10 Tim some photos of the elephants.	
A put B took C made	

Test 1

PART 3**QUESTIONS 11-15**

Complete the five conversations.

For questions 11-15, mark A, B or C on the answer sheet.

EXAMPLE			ANSWER C
	How are you?	A I'm 18. B I'm Peter. C I'm fine.	

11 John's broken this plate.

- A That's very good.
 B Here you are.
 C It doesn't matter.

12 Is this your watch?

- A It's three o'clock.
 B I think it's Dave's.
 C I'm sorry I'm late.

13 Can I have a sandwich?

- A Yes, of course.
 B Yes, it is.
 C Yes, that's right.

14 How many people were in the café?

- A Not much.
 B A few.
 C A little.

15 We're from London.

- A Not at all.
 B Yes, please.
 C How interesting.

QUESTIONS 16–20

Complete the conversation about a flat.

What does Ben say to Ann?

For questions 16–20, mark the correct letter A–H on the answer sheet.

EXAMPLE	ANSWER
Ann: 279616, Ann Beaton speaking.	
Ben: 0	D

Ann: Oh yes, in the Evening Post?

Ben: 16

Ann: £300 a month.

Ben: 17

Ann: Two, both of them with double beds.

Ben: 18

Ann: Yes. It's quite small, but there are some nice plants in it.

Ben: 19

Ann: I'm afraid not, but you can park outside on the street.

Ben: 20

Ann: Of course – is tomorrow all right? At about 10 a.m.?

Ben: Yes, that'll be fine. So I'll see you tomorrow. Goodbye.

A How many bedrooms does it have?

B That's right. How much is it?

C OK. Can I come and see it?

D Hello, I'm phoning about your advertisement for a flat.

E Is there a bus stop near the flat?

F Does it have a garden?

G How many beds are there?

H And is there a garage?

Test 1

PART 4

QUESTIONS 21–27

Read the article about some birds.

Are sentences 21–27 'Right' (A) or 'Wrong' (B)?

If there is not enough information to answer 'Right' (A) or 'Wrong' (B), choose 'Doesn't say' (C).

For questions 21–27, mark A, B or C on the answer sheet.

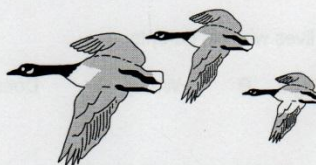
CANADA GEESE

Canada Geese are large blue and white birds. When autumn arrives, they have to fly south where the weather is warmer. The winters are so cold in Canada that the birds die if they stay there.

Last spring, Bill Lishman found sixteen young Canada Geese on his farm. They had lost their parents. Bill thought, 'These young birds won't know what to do in the autumn.'

Bill had a small plane and he decided to teach the birds to follow him. All through the summer, he went on short trips in his plane and the young geese flew after him.

When the cold weather arrived in autumn, Bill flew to Virginia in the United States, 600



miles south of his home in Canada. The geese followed him all the way. Bill left the geese in Virginia and he returned home.

This spring, Bill was waiting for the birds to come back. They didn't arrive, so Bill flew to Virginia to get them. He looked for them for two weeks but he couldn't find them.

When he arrived back home, Bill found the geese waiting for him. They had found their way home without him!

EXAMPLE**ANSWER**

0 Winters in Canada are too cold for Canada Geese.

A

A Right **B** Wrong **C** Doesn't say

21 Bill Lishman is a farmer.

A Right **B** Wrong **C** Doesn't say

22 Bill lives with his parents.

A Right **B** Wrong **C** Doesn't say

23 Bill carried the geese in his plane.

A Right **B** Wrong **C** Doesn't say

24 This was Bill's first visit to Virginia.

A Right **B** Wrong **C** Doesn't say

25 Bill wanted the geese to stay at his home for the winter.

A Right **B** Wrong **C** Doesn't say

26 Bill stayed in Virginia all winter.

A Right **B** Wrong **C** Doesn't say

27 The geese returned to Canada in the spring.

A Right **B** Wrong **C** Doesn't say

Test 1

PART 5

QUESTIONS 28–35

Read the article about bicycles.

Choose the best word (A, B or C) for each space (28–35).

For questions 28–35, mark A, B or C on the answer sheet.

BICYCLES

The bicycle is**0**..... cheap and clean way to travel. The first bicycle**28**..... made about one hundred and fifty years ago.



At first, bicycles were expensive. Only rich people**29**..... buy one. These early bicycles looked very different from the ones we have today. Later,**30**..... bicycles became cheaper, many people**31**..... one. People started riding bicycles to work and in**32**..... free time.

Today, people use cars more than bicycles; cars are much**33**..... and you don't get wet when it rains! But some people**34**..... prefer to cycle to work. They say that**35**..... are too many cars in town centres and you can't find anywhere to park!

EXAMPLE			ANSWER
0	A some	B any	C a
			C
28	A was	B is	C were
29	A must	B could	C may
30	A when	B if	C that
31	A buy	B buys	C bought
32	A their	B his	C its
33	A fast	B faster	C fastest
34	A yet	B still	C already
35	A they	B there	C here

PART 6**QUESTIONS 36–40**

Read the descriptions (36–40) of some people in a family.

What is the word for each description?

The first letter is already there. There is one space for each other letter in the word.

For questions 36–40, write the words on the answer sheet.

EXAMPLE	ANSWER
0 If your child is a boy, he is this.	s <u>o</u> <u>n</u>
36 This is your mother's brother.	u _ _ _ _ _
37 She is your father's mother.	g _ _ _ _ _ _ _ _ _
38 This is the person a man is married to.	w _ _ _ _
39 This is your father's sister.	a _ _ _ _
40 If your child is a girl, she is this.	d _ _ _ _ _ _ _

Test 1

PART 7

QUESTIONS 41–50

Complete these letters.

Write ONE word for each space (41–50).

For questions 41–50, write your words on the answer sheet.

Dear Sir,

I (Example: *read*) your advertisement for English courses41..... the newspaper. I would42..... to have some more information. How43..... does a course cost? Also,44..... long is each course and when does the next course start?

Yours,

Maria Gonzalez

Dear Ms. Gonzalez,

Thank45..... for your letter. Our next course starts in three weeks,46..... Monday, 9 May. This is a 6-week course and it47..... £150. If you prefer48..... begin in June, we have49..... 10-week course for £200. I hope50..... is the information you want.

Yours,

David May

PART 8**QUESTIONS 51–55**

Read the note from a student who wants a book from a library.

Fill in the information on the Reservation Form.

For questions 51–55, write the information on the answer sheet.

Rose Cottage

Northfleet

26 March

To: Weston University Library

My teacher, Robin Gibson, has told me to read *Understanding Science* before my exam on 17th April. I am on holiday in Northfleet at the moment but I'll return to my home at 22 King's Road, Weston on 9th April. I'd like to get the book the next day and keep it for one week. It's by S J Renshaw. Thank you.

Mary Jones

Weston University Library

Reservation Form

Name of book:

Understanding Science

Name of writer:

51

When do you want the book?

52

For how long?

53

Student's name:

54

Student's address:

55

Test 1

PART 9

QUESTION 56

Your friend has asked you to go swimming tomorrow evening. You can't go.
Write a note to your friend.

Say:

- **why** you can't go
- **when** and **where** you can meet your friend on another day.

Write 25–35 words.

Write your note on the answer sheet.

Appendix II.

Parent Consent Form (translated into English)

Dear Parents:

Do you allow your child to participate in a study to apply a new method of teaching in English Language Teaching? I am Doing a research to find out wether applying Lean, as a new method of teaching increaes the achievement of the students.

This could be an opportunity for your child to be taught with a new method of teaching. I do not have any personal demands from your child and he/she participates as one of his/her intrests.

I want to make you sure that any private or personal information related to your child is kept safe.

You can call or contact me if you have further questions about the reserach.

I hope you show your accpetance to let your child to participate in this study.

Best regards

Name and the signature of the parents

Researcher: Hunar M. Faraj
Master Student in English Language Teaching
Telephone number. 07701910167
Gmail. hwnart@gmail.com

Appendix III

The permission of Ministry of Mducation to conduct the study in Iraq

COUNCIL OF MINISTERS

MINISTRY OF EDUCATION

GENERAL DIRECTORATE OF EDUCATION/ SULAIMANIYAH

**DIRECTORATE OF EDUCATION IN DARBANDIKHAN, SULAYMANIYAH
GOVERNORATE, IRAQ**

Number: 1615

Date: 1-6- 2016

To: Safin High School in Darbandikhan

Subject: Permission to conduct a scientific study

Hunar Naih M. Faraj is an MA student of English Language teaching at Gaziantep University in Turkey to conduct a scientific study will start working at your school. This study is considered as a main part of his study to accomplish MA degree. The teaching period starts from 1 June 2016 to 1 September 2016. We ask you sincerely to help and provide every facility to teach and conduct his study during the teaching period.

Best Regards.....

Omar Muhammad A. Raza

The head of Directorate of Education in Darbandikhan

Appendix IV

School's report to the Directorate of Education in Darbandikhan

COUNCIL OF MINISTERS

MINISTRY OF EDUCATION

GENERAL DIRECTORATE OF EDUCATION/ SULAIMANIYAH

**DIRECTORATE OF EDUCATION IN DARBANDIKHAN, SULAYMANIYAH
GOVERNORATE, IRAQ**

Number of the issue: 59

Date: 5-2- 2017

FROM: SAFIN HIGH SCHOOL

**To: DIRECTORATE OF EDUCATION IN DARBANDIKHAN,
SULAYMANIYAH GOVERNORATE, IRAQ**

SUBJECT: TEACHING PERIOD COMPLETION

We inform you that Hunar Nasih M. Faraj has taught English at our school for three months successfully to conduct his study.

Starting date: 1 June 2016

Finishing date: 1 September 2016

BEST REGARDS....

SORAN ABDUL-KARIM

SAFIN HIGH SCHOOL PRINCIPAL

Appendix V

Some examples of the wastes

Activity 3, p. 12 (Student's book) waste of time

“Write the 16 words for transport shown on Student's Book page 12 in a vertical column on the board (in the order they occur in the Student's Book). Tell students to copy them.”

In this exercise waste of time can be seen because adding or copying the words on the board doesn't add anything to the process of teaching while the students are asked to copy the words in their note books. The words are written in the same page all with pictures.

Grammar section, p. 4 (Student's book) waste of motion

If students need more information, ask them to turn to page 10 Lesson 1: Prepositions, and discuss it with them.

In this exercise, there is the waste of motion which makes the waste of motion which does not add any value top the process of teaching and learning.

Acticity 1. Grammar section, p. 5. Waste of talent

Make sure that students understand that they can use who only for people and which only for things but that they can use that with both people and things.

The students in the last grades has studied this subject , so less time should be devoted and the skill of the students should be used properly to avoid wasting talent of the students.

Section B Grammar p. 12. The waste of over production

Certainty and possibility

Two grammar subjects are explained in the same page together for the students.

Speak Section, p. 5. waste of processing

Tell students to read individually the example in C and to choose the letter of the balloon (balloon E).

The students have read the words in accurately, it is in the form of recreating already existed knowledge or the waste of processing / handling.

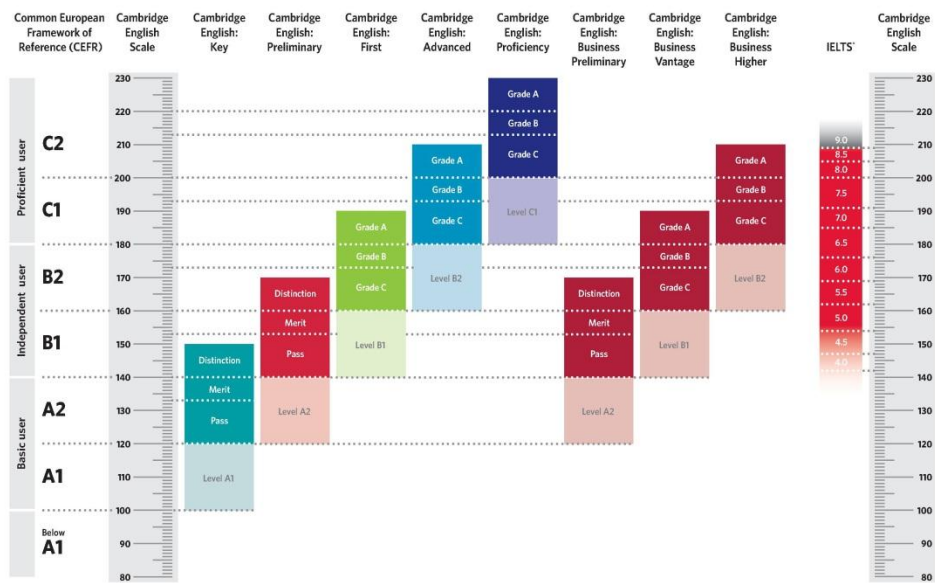
Page 20. Waste of knowledge recreation

Past simple is explained again , it is the creation of knowledge again



Appendix VI.

The Cambridge English Scale



*IELTS is mapped to, but will not be reported on the Cambridge English Scale

Appendix VII.

Part One of The Test (KET), Signs And Texts

One Mark for Each Correct Answer.

PART 1
QUESTIONS 1-5

Which notice (A-H) says this (1-5)?
 For questions 1-5, mark the correct letter A-H on the answer sheet.

EXAMPLE	ANSWER
0 This is broken.	C

1 Children pay less than adults here.	A SUMMER SALE LOW PRICES IN ALL DEPARTMENTS
2 Be careful because this will burn.	B FIRE DOOR KEEP CLOSED
3 We don't want any money yet.	C LIFT NOT WORKING
4 Things are cheaper here.	D TOY SHOP NOW OPEN
5 You must pay with cash.	E BUY NOW PAY NEXT YEAR!
	F <i>Keep this nightdress away from fire!</i>
	G We do not take cheques or credit cards.
	H Under 12s HALF PRICE

Appendix VIII.

Part Two of The Test (KET), Gapped Sentences

One Mark for Each Correct Answer

Paper 1: Reading and Writing

PART 2
QUESTIONS 6–10

Read the sentences (6–10) about going to the zoo.
Choose the best word (A, B or C) for each space.
For questions 6–10, mark A, B or C on the answer sheet.

EXAMPLE	ANSWER
<p>0 On Sunday, Tim up early because he was going to the zoo.</p> <p>A stood B woke C went</p>	B
<p>6 He put some biscuits and an apple in a bag for his</p> <p>A meat B lunch C dish</p>	
<p>7 He took a bus to the zoo and got off outside the entrance.</p> <p>A high B important C main</p>	
<p>8 He at the monkeys eating some bananas.</p> <p>A enjoyed B watched C laughed</p>	
<p>9 The lions were sleeping under a tree because it was very</p> <p>A hot B tired C full</p>	
<p>10 Tim some photos of the elephants.</p> <p>A put B took C made</p>	

3


Appendix IX.

Part Three of The Test (KET), Conversations With Multiple Choices


One Mark for Each Correct Answer.

PART 3
QUESTIONS 11–15
 Complete the five conversations.
 For questions 11–15, mark A, B or C on the answer sheet.

EXAMPLE



How are you?



A I'm 18.
 B I'm Peter.
 C I'm fine.

ANSWER
 C

11 John's broken this plate.

12 Is this your watch?

13 Can I have a sandwich?

14 How many people were in the café?

15 We're from London.

A That's very good.
B Here you are.
C It doesn't matter.

A It's three o'clock.
B I think it's Dave's.
C I'm sorry I'm late.

A Yes, of course.
B Yes, it is.
C Yes, that's right.

A Not much.
B A few.
C A little.

A Not at all.
B Yes, please.
C How interesting.

QUESTIONS 16–20
 Complete the conversation about a flat.
 What does Ben say to Ann?
 For questions 16–20, mark the correct letter A–H on the answer sheet.

EXAMPLE

Ann: 279616, Ann Beaton speaking.

Ben: 0

ANSWER
 D

Ann: Oh yes, in the Evening Post?

Ben: **16**

Ann: £300 a month.

Ben: **17**

Ann: Two, both of them with double beds.

Ben: **18**

Ann: Yes. It's quite small, but there are some nice plants in it.

Ben: **19**

Ann: I'm afraid not, but you can park outside on the street.

Ben: **20**

Ann: Of course – is tomorrow all right? At about 10 a.m.?

Ben: Yes, that'll be fine. So I'll see you tomorrow. Goodbye.

A How many bedrooms does it have?
B That's right. How much is it?
C OK. Can I come and see it?
D Hello, I'm phoning about your advertisement for a flat.
E Is there a bus stop near the flat?
F Does it have a garden?
G How many beds are there?
H And is there a garage?

Appendix X.

Part Four of The Test (KET), Long Test With Multiple Choice Questions

One Mark for Each Correct Answer.

PART 4

QUESTIONS 21–27

Read the article about some birds.

Are sentences 21–27 'Right' (A) or 'Wrong' (B)?

If there is not enough information to answer 'Right' (A) or 'Wrong' (B), choose 'Doesn't say' (C).

For questions 21–27, mark A, B or C on the answer sheet.

CANADA GEESE

Canada Geese are large blue and white birds. When autumn arrives, they have to fly south where the weather is warmer. The winters are so cold in Canada that the birds die if they stay there.

Last spring, Bill Lishman found sixteen young Canada Geese on his farm. They had lost their parents. Bill thought, 'These young birds won't know what to do in the autumn.'

Bill had a small plane and he decided to teach the birds to follow him. All through the summer, he went on short trips in his plane and the young geese flew after him.

When the cold weather arrived in autumn, Bill flew to Virginia in the United States, 600



miles south of his home in Canada. The geese followed him all the way. Bill left the geese in Virginia and he returned home.

This spring, Bill was waiting for the birds to come back. They didn't arrive, so Bill flew to Virginia to get them. He looked for them for two weeks but he couldn't find them.

When he arrived back home, Bill found the geese waiting for him. They had found their way home without him!

EXAMPLE

ANSWER

0 Winters in Canada are too cold for Canada Geese.

A

A Right **B** Wrong **C** Doesn't say

21 Bill Lishman is a farmer.

A Right **B** Wrong **C** Doesn't say

22 Bill lives with his parents.

A Right **B** Wrong **C** Doesn't say

23 Bill carried the geese in his plane.

A Right **B** Wrong **C** Doesn't say

24 This was Bill's first visit to Virginia.

A Right **B** Wrong **C** Doesn't say

25 Bill wanted the geese to stay at his home for the winter.

A Right **B** Wrong **C** Doesn't say

26 Bill stayed in Virginia all winter.

A Right **B** Wrong **C** Doesn't say

27 The geese returned to Canada in the spring.

A Right **B** Wrong **C** Doesn't say

Appendix XI.

Part Five of The Test (KET), Text With Multiple Choice Gaps

One Mark for Each Correct Answer.

PART 5

QUESTIONS 28–35

Read the article about bicycles.

Choose the best word (A, B or C) for each space (28–35).

For questions 28–35, mark A, B or C on the answer sheet.

BICYCLES

The bicycle is**0**..... cheap and clean way to travel. The first bicycle**28**..... made about one hundred and fifty years ago.



At first, bicycles were expensive. Only rich people**29**..... buy one. These early bicycles looked very different from the ones we have today. Later,**30**..... bicycles became cheaper, many people**31**..... one. People started riding bicycles to work and in**32**..... free time.

Today, people use cars more than bicycles; cars are much**33**..... and you don't get wet when it rains! But some people**34**..... prefer to cycle to work. They say that**35**..... are too many cars in town centres and you can't find anywhere to park!

	EXAMPLE			ANSWER
0	A some	B any	C a	C
28	A was	B is	C were	
29	A must	B could	C may	
30	A when	B if	C that	
31	A buy	B buys	C bought	
32	A their	B his	C its	
33	A fast	B faster	C fastest	
34	A yet	B still	C already	
35	A they	B there	C here	

Appendix XII.

Part Six of The Test (KET), Word Completion

One Mark for Each Correct Answer.

PART 6
QUESTIONS 36–40

Read the descriptions (36–40) of some people in a family.
 What is the word for each description?
 The first letter is already there. There is one space for each other letter in the word.
 For questions 36–40, write the words on the answer sheet.

EXAMPLE	ANSWER
0 If your child is a boy, he is this.	s o n
36 This is your mother's brother.	u _ _ _ _
37 She is your father's mother.	g _ _ _ _ _ _ _
38 This is the person a man is married to.	w _ _ _ _
39 This is your father's sister.	a _ _ _ _
40 If your child is a girl, she is this.	d _ _ _ _ _ _

Appendix XIII.

Part Seven of The Test (KET), Text With Gaps

One Mark for Each Correct Answer

PART 7**QUESTIONS 41–50**

Complete these letters.

Write ONE word for each space (41–50).

For questions 41–50, write your words on the answer sheet.

Dear Sir,

I (Example: *read*) your advertisement for English courses41..... the newspaper. I would42..... to have some more information. How43..... does a course cost? Also,44..... long is each course and when does the next course start?

Yours,

Maria Gonzalez

Dear Ms. Gonzalez,

Thank45..... for your letter. Our next course starts in three weeks,46..... Monday, 9 May. This is a 6-week course and it47..... £150. If you prefer48..... begin in June, we have49..... 10-week course for £200. I hope50..... is the information you want.

Yours,

David May

Appendix XIV.**Part Eight of The Test (KET), Fill In A Form**

One Mark for Each Correct Answer.

PART 8**QUESTIONS 51–55**

Read the note from a student who wants a book from a library.

Fill in the information on the Reservation Form.

For questions 51–55, write the information on the answer sheet.

	Rose Cottage Northfleet 26 March
To: Weston University Library	
My teacher, Robin Gibson, has told me to read <i>Understanding Science</i> before my exam on 17th April. I am on holiday in Northfleet at the moment but I'll return to my home at 22 King's Road, Weston on 9th April. I'd like to get the book the next day and keep it for one week. It's by S J Renshaw. Thank you.	
Mary Jones	

Weston University Library	
Reservation Form	
Name of book:	<i>Understanding Science</i>
Name of writer:	51 <input type="text"/>
When do you want the book?	52 <input type="text"/>
For how long?	53 <input type="text"/>
Student's name:	54 <input type="text"/>
Student's address:	55 <input type="text"/>

Appendix XV.

Part Nine of the Test (KET), Guided Writing

This Question Has a Total of 5 Marks.

PART 9**QUESTION 56**

Your friend has asked you to go swimming tomorrow evening. You can't go.

Write a note to your friend.

Say:

- **why** you can't go
- **when** and **where** you can meet your friend on another day.

Write 25–35 words.

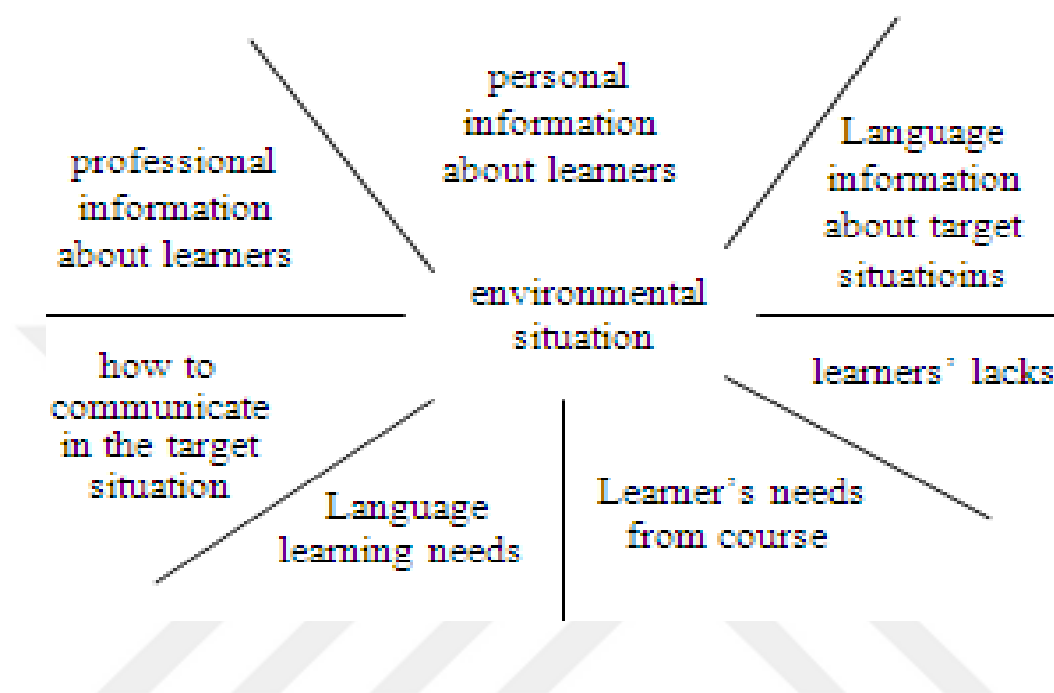
Write your note on the answer sheet.



Appendix XVI

ESP Needs As Necessities, Lacks And Wants

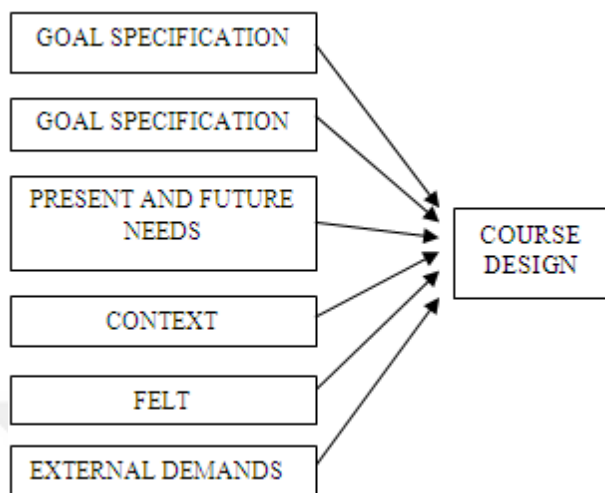
Source: Dudley-Evans and St John 1998



Appendix XVII

ESP Needs Analysis Model

Source: McDonough 1984



CURRICULUM VITAE

Hunar M. Faraj was born in Sulaimanyeah in 1986. He is a graduate of Sulaimanyah University- College of language-Department of English Language and Literature (2010). He also has a 'Certificate in Teaching English as a Foreign Language' (TEFL) obtained from London Humanities College (2013).He has worked in Safin High school as an English Language Teacher.

ÖZGEÇMİŞ

Hunar M. Faraj 1986 yılında Darbandikhan'de doğdu. 2010 yılında Süleymaniye Üniversitesi İngiliz Dili ve Edebiyatı Bölümü'nden mezun oldu. Aynı zamanda 2013 yılında Londra Uygarlık Tarihi kolejinden aldığı TEFL sertifikası vardır. Safin Lisesinde İngilizce Öğretmeni olarak çalıştı.

