



PEOPLE'S DEMOCRATIC REPUBLIC OF ALGERIA

MINISTRY OF HIGHER EDUCATION AND SCIENTIFIC RESEARCH

**Djillali Liabès University of Sidi Bel-Abbès**

**Faculty of Letters, languages and Arts**

**Department of English**

**Integrating Information Communication  
Technologies as an Innovative Tool in EFL Classes:  
*The Case of Ain Temouchent Secondary School Teachers***

*Dissertation Submitted To the Department of English in Partial*

*Fulfillment of the Requirement for the Degree of Magister in Didactics*

**Presented by:**

Mr. Abdelkader Touami

**Supervised by:**

Dr. Hind Amel Mostari

**Board of Examiners:**

Prof Mohamed MELOUK (Professor) - (Chairman) U D L, Sidi Bel Abbès

Prof Zouaoui MERBOUH (Professor) - (Examiner) U D L, Sidi Bel Abbès

Dr. Mostari Hind Amel (MC-A)- (Supervisor) U D L, Sidi Bel Abbès

Academic Year: 2015-2016

## *Dedication*

*To the memory of:*

*My mother*

*My father*

*And my brother*

## Acknowledgements

First of all sincere I express my gratitude, deepest appreciation and heartfelt thanks to my supervisor Dr. Hind Amel Mostari for her assistance, patience and guidance in the writing of this dissertation.

I am deeply grateful to Professor Melouk Mohamed, Head of the Magister project in Didactics 2013 in the department of English, Djillali El-yabess University, Faculty of Letters, Languages and Arts in Sidi Belabbes, mostly for his help, patience and encouragements.

Special thank goes to Prof. Merbouh Zouaoui, Prof. Melouk Mohamed and Dr. Hind Mostari who have kindly accepted to examine the present dissertation.

The deepest appreciation goes also to our teachers: Dr. Guerroudj, Dr. Mostari, Dr. Benaissi, Prof Merbouh, Prof. Melouk and Prof. Ouared for their valuable lectures during the theoretical year, without forgetting to thank Dr. Basoul and Mr. Benrabeh for their methodological guidance and my Magister mates especially Mr. Bourouina El-hadj, and Mrs. Arab for their help, generosity and never-ending kindness.

Sincere thanks are extended to Mr. L. Fridi for his help and collaboration in questionnaires administration and advice and to all EFL teachers and pupils in Ain Temouchent secondary schools for accepting to be part of this study that I hope would be of benefit to everyone interested in English language teaching through technology integration. I also would like to thank my colleagues and my pupils in Colonel Amirouche secondary school in Ain Temouchent and I gratefully acknowledge the support and advice of all my Magister mates.

Warm thanks to my loving and inspiring wife who has supported me all the way through; and without her help, writing this dissertation would not have been possible.

Finally, I would like to extend my thanks to my close friends: Cheikh Mostapha Daho, Youcef Kaderi, Abdelkader Moussi, Mohamed kacimi, Fethi Zenagui and Ahmed Abdelwahab who have always been there for me to share my ups and downs and all those who have encouraged me to complete this dissertation.

## **Abstract**

Information Communication Technologies (ICT) has witnessed wide world popularity lately. It has changed the modern life in all aspects since its use has spread to reach every domain in science, technology, industry, business and education is no exception. ICT has somehow become a must in teaching and learning nowadays, and it is assumed that integrating it in teaching would make learning more exciting and interactive. With such an advance of technology use in the education field, Algerian teachers are tempted to adopt ICT to enhance their teaching performances. However, there are many challenges and among the major problems facing them when integrating Technology is training, beside equipment availability and resources. The objective of this research is to explore teachers' attitudes and perceptions towards the integration of technology into English as a Foreign Language (EFL) classroom in Ain Temouchent secondary schools; and investigate the challenges English language teachers encounter when incorporating technologies in classes. The research is a mixed method based and is conducted using multiple research instruments. A semi-structured questionnaire and an interview are carried out with a population of teachers from 20 secondary schools in Ain Temouchent. It targets teachers' perceptions, ICT skills and the integration challenges they encounter. To find out about teachers' ICT experiences and implementation mechanisms, they are also observed in classroom practice. A second questionnaire is designed to survey the population of pupils to explore their ICT exposure in social and schools environments. The collected data are both qualitative and quantitative and are analyzed using the mixed design. After that, the results are compared, triangulated and interpreted. They concern teachers' level of motivation, training and readiness to incorporate technology. The interview findings are qualitative data, designed to reveal opinions, ICT innovation in teaching practices. Recommendations depend on the findings and well-known technology integration methods.

## **List of Abbreviations and Acronyms**

**A C T F L:** American Council on the Teaching of Foreign Languages

**A D S L:** Asymmetric Digital Subscription Line

**A N D S:** National Health Development Agency

**A P:** Algerian Post

**A S I:** Algerian Information Society (The Algerian startup initiative platform in technology)

**A T:** Algerian Telecom

**B E C T A:** British Educational Communications and Technology Agency

**C A :** Communicative Approach

**C A I:** Computer Aided Instruction

**C B A M:** Concerns-based Adoption Model

**C D:** Compact Disk

**C E R I:** Centre for Educational Research and Innovation

**C P D:** Continuing Professional Development

**C R E A T E R.:** Care, Relate, Examine, Acquire, Try, Extend and Renew.

**E F L:** English as a Foreign Language

**E L T:** English Language Teaching

**I C T:** Information and Communication Technologies

**I N T:** Institut Nationale des Télécommunications

**I S T E:** International Society for Technology in Education.

**I T E:** Initial Teacher Education

**I T T:** Initial Teacher Training

**I T:** Information Technology

**L1:** First Language

**M P I T:** Ministry of Post and Information Technology.

**M S A:** Modern Standard Arabic

**N C E S:** National Center for Education Statistics.

**N E T S:** National Educational Technology Standards (*for the United States of America*)

**N P I T:** The National Public Institution of Telecom

**O E C D:** Organization for Economic Co-operation and Development

**S I T E:** The Society for Information Technology and Teacher Education

**S S E:** Studies of Society and Environment

**T I C E:** Technologies de L'Information et de la Communication pour l'Enseignement

**T T T:** Teaching Talking Time

<b>List of Tables</b>	<b>pages</b>
<b>Chapter One</b>	
Table 1.1 Attendance Schedule of the Visited Classes.....	17
Table 1.2 The Population Distribution According to Schools and Streams.....	23
<b>Chapter Two</b>	
Table 2.1 Teacher-Centered and Learner-Centered Learning Environments.....	46
Table 2.2 Changes in Student and Teacher Roles in Learner-Centered Environments.....	46
Table 2.3 Welliver’s Instructional Transformation Model (1990).....	59
Table 2.4 Adoption Stages of ICT.....	64
Table 2.5 The Five Stages of the Reflective Model.....	69
Table 2.6 Seven Stages of the C-R-E-A-T-E-R Educational Change Model.....	76
Table 2.7 Levels of ICT Use.....	77
<b>Chapter Three</b>	
Table 3.1 Teachers’ Age Categories.....	92
Table 3.2 Participants ICT Experience in Secondary Schools.....	92
Table 3.3 ICT Integration Frequency according to Teachers’ Experience.....	95
Table 3.4 ICT Beliefs and Attitudes.....	99
Table 3.5 Pedagogical ICT Training for Teachers .....	103
Table 3.6 ICT Support for Teachers.....	104
Table 3.7 Planning Lessons with ICT.....	105
Table 3.8 Integrating ICT in Teaching Aspects and Learning Practices.....	107
Table 3.9 Collecting Teaching and Learning Material from the Web.....	109
Table 3.10 Samples of ICT Integration in Classroom Practice.....	110
Table 3.11 ICT Challenges and Difficulties in Secondary Schools.....	111
Table 3.12 Studying ICT as a Separate Subject.....	114
Table 3.13 Participants’ Technological Applications.....	115
Table 3.14 The Use of Technology to Improve the Learning Process.....	117
Table 3.15 ICT Integration in Lesson Steps.....	121
Table 3.16 The Interviewed Teachers.....	125

Table 3.17 Difficulties Related to ICT Integration in Classrooms.....	134
Table 3.18 ICT-based Lesson Preparation Procedure.....	135
Table 3.19 ICT-based Type of Teaching Versus Traditional Teaching.....	137
Table 3.20 ICT in English Language Learning Aspects.....	138
Table 3.21 Comparing Integration Findings.....	141
Table 3.22 Comparing ICT Frequency of Integration.....	142
Table 3.23 ICT Experience.....	143
Table 3.24 Cross-checking ICT Experience .....	143
Table 3.25 Comparing ICT Training Results.....	145
Table 3.26 Difficulties Related to ICT Integration in Classrooms.....	146
Table 3.27 ICT Integration within Different Lesson Steps .....	150

## **Chapter Four**

Table 4.1 Participants ICT Experience in Ain Temouchent Secondary Schools.....	160
Table 4.2 Summary of Technical Training for teachers.....	163
Table 4.3 Summary of Pedagogical Training.....	164
Table 4.4 Suggested Solutions for ICT Challenges.....	175



# List of Figures

pages

## Chapter One

Figure 1.1 Populations and Samples.....	11
Figure 1.2 The Concurrent Mixed Method Design.....	13
Figure 1.3 The Different Data Collection Tools.....	14

## Chapter Two

Figure 2.1 Information Transfer of Learning.....	44
Figure 2.2 Action Learning.....	48
Figure 2.3 The Professional Learning Cycle.....	62
Figure 2.4 A Model of Technology Adoption for the Classroom.....	68

## Chapter Three

Figure 3.1 The Convergent Parallel Design.....	90
Figure 3.2 ICT Integration According to Experience.....	93
Figure 3.3 ICT Integration Frequency.....	94
Figure 3.4 ICT Use Frequency According to Teachers' Age.....	95
Figure 3.5 Experience of ICT Integration.....	96
Figure 3.6 The Percentage of ICT Access by English Language Teachers.....	97
Figure 3.7 ICT Technical Training.....	101
Figure 3.8 The Quality of ICT Training.....	101
Figure 3.9 Reasons for Insufficient ICT Training.....	102
Figure 3.10 The Participants Computer Possession.....	114
Figure 3.11 The Frequency of ICT Integration in the ELT Classroom.....	115
Figure 3.12 Use of ICT in Learning the Four Skills.....	116
Figure 3.13 ICT Integration Difficulties Encountered in Schools.....	118
Figure 3.14 ICT Necessity.....	119
Figure 3.15 The Observed Participants.....	120
Figure 3.16 ICT in the Different Lesson Steps.....	122

Figure 3.17 ICT and Learning Objectives.....	123
Figure 3.18 ICT Familiarity.....	127
Figure 3.19 Technical and pedagogical ICT Training.....	128
Figure 3.20 ICT Integration.....	129
Figure 3.21 ICT in EFL Classroom Teaching.....	130
Figure 3.22 ICT Experience of Integration.....	131
Figure 3.23 ICT Integration in Lesson Steps.....	131
Figure 3.24 ICT Integration in Teaching Skills.....	132
Figure 3.25 ICT in Assessment.....	133
Figure 3.26 ICT-based Lesson Attendance.....	136
Figure 3.27 ICT in English Language Learning.....	138
Figure 3.28 ICT Inspiration.....	139
Figure 3.29 The Research Design.....	140
Figure3.30 The Diffusion of Innovation Process.....	148

# Table of Contents

Dedications .....	I
Acknowledgements.....	II
Abstract.....	III
List of Abbreviations and Acronyms.....	IV
List of Tables.....	VI
List of Figures.....	VIII
List of Contents.....	X
General Introduction.....	1
<b>Chapter One: Research Methodology</b>	
1.1 Introduction.....	6
1.2 Objectives of the Research.....	6
1.3 Research Design.....	7
1.3.1 The Type of Research.....	7
1.3.2 The Research Method.....	8
1.3.2.1 The Mixed Method.....	9
1.3.2.2 Case Study.....	10
1.4 The Sample Population.....	11
1.5 Data Collection Method.....	13
1.5.1 Data Collection Tools.....	15
1.5.1.1 Classroom Observation.....	15
1.5.1.1.1 The Observation Process.....	16
1.5.1.1.2 Observation Data Collection Procedure.....	18
1.5.1.2 Teachers' Questionnaire.....	19
1.5.1.2.1 Piloting Teachers' Questionnaire.....	20
1.5.1.2.2 Procedure of Data collection.....	20
1.5.1.3 The Pupils' Questionnaire.....	22
1.5.1.3.1 Piloting Pupils' Questionnaire.....	24
1.5.1.3.2 Administering Pupils' Questionnaire.....	24
1.5.1.4 The Teachers' Interview.....	24
1.5.1.4.1 Description of the Type of Interview.....	25
1.5.1.4.2 Piloting Teachers' Interview.....	26

1.6 Data Analysis.....	26
1.6.1 Triangulation.....	27
1.6.1.1 Classroom Observation Data Analysis.....	28
1.6.1.2 Data Analysis of the Questionnaires.....	29
1.6.1.2.1 The Teachers’ Questionnaire.....	29
1.6.1.2.2 The Pupils’ Questionnaire.....	30
1.6.1.3 Interview Data Analysis.....	31
1.7 Ethical Considerations.....	32
1.8 Validity and Reliability.....	32
1.8.1 Classroom Observation.....	32
1.8.2 The Teachers’ Questionnaire.....	33
1.8.2.1 Internal Consistency.....	33
1.8.2.2 External Consistency.....	34
1.8.3 The Pupils’ Questionnaire.....	35
1.8.4 The Teachers’ Interview.....	35
1.9 Limitations.....	37
1.9.1 Limitations of Classroom Observation.....	37
1.9.2 Limitations of the Questionnaires.....	37
1.9.3 Limitations of Teachers’ Interview.....	38
1.10 Conclusion.....	39

## **Chapter Two: Literature Review**

2.1 Introduction.....	42
2.1.1 Definition and Introduction of Key Concepts.....	42
2.1.2 The Traditional Learning Procedure .....	44
2.1.3 The Modern View of Learning.....	45
2.1.4 A Change from Teaching to Learning.....	45
2.1.5 Integrating ICT in Learning and Teaching.....	47
2.2. ICT Integration Difficulties and Challenges.....	49
2.2.1 School Related Challenges.....	49
2.2.1.1 Lack of Access to Resources.....	49
2.2.1.2 Technical Problems.....	50

2.2.1.3 Investment of Money.....	50
2.2.2 Teacher Related Challenges.....	50
2.2.2.1 Teachers’ Attitudes toward ICT Integration.....	50
2.2.2.1.1 Old Teachers versus New Teachers Attitudes.....	51
2.2.2.1.2 Teaching Experience.....	52
2.2.2.1.3 The Lack of ICT Experience.....	52
2.2.2.1.4 Lack of Teachers ICT Competence and Confidence.....	52
2.2.2.1.5 Lack of Time for Training.....	53
2.2.2.1.6 Lack of ICT skills.....	54
2.2.2.1.7 Lack of Pedagogical ICT Model .....	54
2.2.2.1.8 Lack of Time for Lesson Planning.....	55
2.2.2.1.9 Teachers “Resisting” Change.....	55
2.2.2.1.10 Motivating and Demotivating Factors.....	56
2.3 Teachers’ ICT Training.....	57
2.3.1 Technology Standards for Language Teachers.....	58
2.3.2 Pre-service Teacher Training.....	58
2.3.3 In-Service Teacher Training.....	60
2.3.3.1 The Apprenticeship Approach.....	61
2.3.3.2 The Action Learning Approach.....	62
2.3.3.3 Tentative Theory .....	63
2.4 ICT Integration in EFL Teaching .....	64
2.4.1 Evolution of Technology in EFL Teaching.....	65
2.4.2 Modern Integration of ICT.....	65
2.4.2.1 Internet Use in the Foreign Language Teaching.....	66
2.5 Models of ICT Integration.....	67
2.5.1 The Constructivist Model.....	67
2.5.2 The Reflective Model.....	69
2.5.2.1 Entry.....	69
2.5.2.2 Adoption.....	69
2.5.2.3 Adaptation.....	69

2.5.2.4 Appropriation.....	70
2.5.2.5 Invention and Innovation.....	70
2.6 Integrating ICT within Teaching Methods .....	70
2.6.1 The Cognitive Method of ICT Integration.....	70
2.6.2 The Socio-cognitive Approach of ICT Integration.....	71
2.7 ICT-based Lesson Planning.....	72
2.8 Innovation Perception and Adoption.....	73
2.8.1 Educational Change.....	74
2.8.1.1 Teacher Education.....	74
2.8.1.2 Models of Teacher Education.....	75
2.8.1.2.1 Rogers Model (Diffusion of innovations, 1995).....	75
2.8.1.2.2 Havelock and Zlotolow Model (1995).....	76
2.8.1.2.3 Hall's Model of Change (1987).....	77
2.8.2 The Role of the Institution.....	77
2.9 The Case Study: ICT in ALGERIA.....	78
2.9.1 The Algerian ICT Projects.....	79
2.9.2 ICT in Algerian Education.....	81
2.9.3 ICT in the Algerian Secondary School Curriculum.....	81
2.9.4 ICT-based Lesson Planning in Algerian Schools.....	82
2.9.5 ICT in English Language Teaching in Algeria.....	83
2.9.6 In-service Training in Algerian Schools.....	84
2.9.7 ICT Integration Challenges in Algerian Schools.....	85
2.10 Conclusion .....	85

## Chapter Three: Data Analysis and Interpretation

3.1 Introduction .....	89
3.2 Data Analysis and Interpretation.....	89
3.3 Data Analysis Method.....	90
3.4 Teachers' Questionnaire Data Analysis .....	91
3.4.1 Participants Background Information.....	91
3.4.2 Analysing Questionnaire Findings.....	92
3.4.2.1 Participants ICT Experience.....	92
3.4.2.2 ICT Frequency of Integration....	94
3.4.2.2.1 Age Factor.....	94
3.4.2.2.2 Experience Factor and ICT Integration.....	95
3.4.2.3 ICT Access and Facilities.....	97
3.4.2.4 Teachers' Opinions and Attitudes.....	98
3.4.3 Technological Training & Support.....	100
3.4.3.1 Technical Training.....	101
3.4.3.2 Teacher Pedagogical Training.....	102
3.4.3.3 Providing ICT Support.....	104
3.4.4 ICT Competence in Lesson planning.....	105
3.4.4.1 ICT Integration Frequency in Lesson Planning.....	107
3.4.4.2 Web-Based Lessons .....	108
3.4.5 ICT Challenges and Difficulties.....	111
3.5 The Pupils' Questionnaire .....	112
3.5.1 The Objective of the Pupils' Questionnaire.....	113
3.5.2 Data Analysis of Pupil's Questionnaire.....	113
3.5.3 ICT in Pupils' Social Environment.....	113
3.5.4 ICT Training and Manipulation.....	114
3.5.5 ICT in Classroom Learning.....	115
3.5.6 Difficulties in Using ICT in School.....	117
3.5.7 The Learners' Opinion.....	118
3.6 Classroom Observation.....	119
3.6.1 General Conditions of Classroom Observation.....	120
3.6.2 The Observed Participants.....	120

3.6.3 Classroom Observation Data Analysis .....	121
3.6.3.1 The Integrated Technology Tools in lessons .....	121
3.6.3.2 The Teaching Content and Curriculum Objectives.....	122
3.6.3.3 Observation Findings and Remarks.....	123
3.7 Interview Making.....	125
3.7.1 The Participants Profile.....	125
3.7.2 Description of the Interview.....	125
3.7.3 Analysing the Interview.....	126
3.7.3.1 Familiarity with ICT and Teaching experience .....	127
3.7.3.2 Training and ICT Integration.....	128
3.7.3.3 ICT in Classroom Teaching .....	129
3.7.3.4 Experience of ICT Integration .....	131
3.7.3.5 ICT in Assessment.....	132
3.7.3.6 ICT Integration Difficulties.....	134
3.7.4 ICT in Classroom Learning.....	136
3.7.4.1 Recycling .....	136
3.7.4.2 Learning Aspects .....	137
3.7.4.3 Homework through ICT.....	138
3.7.4.4 ICT and Innovation in Teaching.....	139
3.8 Comparing and Interpreting Findings .....	140
3.8.1 ICT Integration .....	141
3.8.2 ICT Integration Frequency.....	142
3.8.3 Teachers Experience Using ICT.....	143
3.8.4 Teaching Experience and ICT .....	144
3.8.5 ICT Training.....	144
3.8.5.1 The Effect of Training on Technology Integration.....	145
3.8.6 Comparing Difficulties while using Technology.....	146
3.8.7 A Leading Innovation in English Language Teaching.....	147
3.8.7.1 ICT Integration Competence.....	148
3.8.7.2 ICT in the Classroom.....	149
3.8.7.2.1 ICT in Lesson Preparation Steps.....	149
3.8.7.2.2 Web-based Teaching.....	151



3.8.7.2.3 Assessment.....	151
3.8.7.3 Recycling.....	152
3.8.7.4 Meeting Learners’ Technology Expectations.....	152
3.9 Conclusion.....	153

## **Chapter Four: Implications and Recommendations**

4.1 Introduction.....	156
4.2 Summary of the Findings.....	156
4.2.1- The Pedagogical Integration of ICT.....	157
4.2.1.1. Participants attitudes.....	157
4.2.1.2 - ICT Integration.....	158
4.2.1.2.1 Teaching Experience.....	158
4.2.1.2.2 ICT Experience.....	160
4.2.1.2.3 Frequency of ICT Integration.....	161
4.3 ICT Challenges and Difficulties.....	161
4.3.1 Technology Access.....	162
4.3.2 Teachers’ Training.....	162
4.3.3 ICT Support through Recycling.....	164
4.3.4 ICT Integration Barriers.....	165
4.4 ICT and Innovation in Language Teaching.....	166
4.4.1 Teachers Beliefs.....	166
4.4.2 Teachers Competence in Manipulating ICT.....	166
4.4.3 Innovating Classroom Practice.....	167
4.4.4 Enhancing Classroom Learning.....	169
4.4.4.1 ICT in Assessment.....	169
4.4.4.2 Web-based Lessons.....	170
4.5 Summary of Pupils Questionnaire Findings.....	170
4.5.1 Pupils ICT Profile.....	170
4.5.2 Technology in Classroom Learning.....	171
4.6 Implications and Recommendations.....	172
4.6.1 ICT Equipment Access.....	172
4.6.2 Technical and Pedagogical Training.....	173
4.6.3 Supporting teachers.....	174

4.6.4 Teachers ICT Skills.....	175
4.6.5 Planning English ICT-based Lessons.....	176
4.6.6 Classroom Performance.....	177
4.6.7 ICT Implementation Policy: A Must in Algerian Education.....	179
4.6.8 Limitations of the Study.....	181
4.6.9 Future Research Suggestions.....	182
4.7 Conclusion.....	182
General Conclusion.....	184
Bibliography.....	188
Appendices.....	198
Appendix A: Authorization for Administering Teachers' Questionnaire .....	198
Appendix B: Teachers' Questionnaire.....	199
Appendix C: Pupils' Questionnaire.....	203
Appendix D: Pupils' Questionnaire in Arabic Language.....	205
Appendix E: ICT-based Lesson Observation Form.....	207
Appendix F : Samples of Lesson Observations.....	208
Appendix G: Teachers' Interview Protocol.....	213
Appendix H: A Sample Interview Script.....	215
Appendix I: Tomei Taxonomy of Technology Integration.....	221
Appendix J: Sample of School facilities.....	222
Glossary.....	223

# **General Introduction**

## **General Introduction**

The abbreviation of 'ICT' stands for Information and Communication Technology and has been adopted in schools, universities and colleges instead of 'IT' to indicate the important role played by a wide range of communication technology to vehicle information.

The demands of modern society require constant technological change that is affecting many fields whether social, industrial, economic or educational. English language teaching does not escape such an important change. Since it is an international language, it is considered, actually, the first medium that transmits knowledge and technology. For this reason, it has become a conviction that teaching English language through the integration of technology instruments, like the computer would be more effective than through previous traditional methods.

Information and Communication Technology (ICT) has been used in teaching for more than thirty years now. Similarly to the use of old technologies like audio-tapes with the audio-lingual method which was the dominant teaching method in the seventies, the computer is imposing its use within the current teaching methods such as the Communicative Approach(CA) or the Competency Based Approach (CBA) in Algeria. This latter was mainly based on the competences of the learner and his active engagement in the teaching learning process. There was a shift from the teacher centered to the learner centered type of teaching.

However, in Algeria, the methodology shift towards the integration of ICT into English Language Teaching (ELT) has taken longer that it was supposed to since the Algerian educational reforms have started in 2003 and in the same year the introduction of CBA into the educational system. Although, they have been encouraged to implement ICT in lesson planning within the CBA method, teachers have been hesitating and reluctant about its integration. As a result, integrating technology in teaching English as a Foreign Language in secondary schools has been a real challenge to the Algerian teachers; hence the teaching product has not reach the expectations hoped for by educationist in the age of modernity.

As a matter of fact, the purpose of this study was to explore teachers' current beliefs and perceptions about ICT and to shed some light on their previous attempts to integrate it ELT. The present research aimed also to describe the major barriers that prevent teachers from integrating technology into their classrooms. Besides this, it investigated whether the implementation of ICT in EFL classes would lead to innovation in the teaching practice and the factors in favor of that.

The findings of research were meant to meet the needs of foreign language teachers who lack ICT knowledge but are eager to find ways in which they could adopt and adapt technology in teaching. It would guide them to overcome technical and pedagogical difficulties encountered when integrating technology. The interactive learning environment that ICT provided in the language classroom would alleviate teachers' burden explaining difficult aspects and paves the way to a more learner-centered type of teaching.

The primary objective of this study was to survey teachers attitudes towards ICT and the extent to which technology was integrated in their classes. It also explored the demotivating factors that prevent teacher from innovating their teaching practice in secondary schools.

Four research questions are formulated to guide this research:

- 1- Are ELT teachers in Ain Temouchent secondary schools tempted by the integration of ICT in their classes?
- 2- How often do they implement ICT in their teaching practice?
- 3 -What challenges do teachers and learners face while integrating ICT in their classrooms?
- 4- Does the integration of technology in classes lead to an innovation in English language teaching?

These questions gave way to some assumptions about the nature of efficient teaching and the good manipulation of technology. The research sought to determine the factors and conditions of technology integration and whether the integration of computer technology and other tools had an innovative aspect in ELT classes at the level of secondary school. Coping with technology challenges in schools did not guarantee a successful change in the teaching practice. Therefore, out of these questions, the following hypotheses were derived and put forward:

1. Teachers who have positive attitudes towards technologies are more confident and competent in incorporate technology in the ELT classes.
2. Teachers who have access to technology resources and facilities will implement technology tools more often than others.
3. The Teachers who can overcome technology integration challenges, among which training, are more likely to use ICT.
4. Teachers who have had sufficient technical and pedagogical training and have received sustainable support would innovate their teaching practice.

To undertake the stated research hypotheses an explorative and descriptive method was followed to conduct the investigation. It was based on the use of four research instruments. Classroom observation tool collected qualitative data and was managed through the structured observation method. A checklist was prepared, piloted on two classes and some corrections and arrangements were made on it to make it more consistent. Then, it was handed to the observers who were given direction on how to report classroom ICT lesson observations so as to avoid bias. The purpose of observation was to find out about teachers' ICT experiences and integration mechanisms in classrooms. The second instrument was a semi-structured questionnaire administered at random to English language teachers in Ain Temouchent secondary schools. It was used to collect quantitative data and had six (6) sections which dealt with ICT frequency of use, resources, teachers' attitudes, training and integration challenges. Its aim was to target participants' perceptions and skills. Another bilingual semi-structured questionnaire was administered to pupils from different levels and streams. It explored participants' ICT exposure in their social and schools environments and gathered quantitative data. The interview protocol reported qualitative data from another group of teachers. Each of data collection and analysis were carried out separately according to the concurrent mixed method. During analysis the data were compared and triangulated to seek convergence. In the end, both qualitative and quantitative data were mixed in a single output in the interpretation phase.

The present dissertation lay out was composed of the following components: an abstract, the general introduction, four chapters, the general conclusion, appendices and a glossary. Chapter one deals with the research methodology used to carry out this study. It presented the data collection tools and the methods and procedure of data analysis. The Second one provided an exhaustive description of the previous research literature concerning ICT integration in English language teaching, and how it illustrated some of the well-known integration models. On the basis of the theoretical knowledge stated in the second chapter, the third chapter aimed to examine, analyze and interpret the collected data. It described the research design and supplied the results of each tool for analysis and discussion. After analyzing and interpreting data, some suggestions and recommendations on how to integrate technology more efficiently in classes are proposed in the fourth chapter.

# **Chapter One**

*Research*

*Methodology*

## **Table of Contents**

1.1 Introduction.....	6
1.2 Objectives of the Research.....	6
1.3 Research Design.....	7
1.3.1 The Type of Research.....	7
1.3.2 The Research Method.....	8
1.3.2.1 The Mixed Method.....	9
1.3.2.2 Case Study.....	10
1.4. The Sample Population.....	11
1.5. Data Collection Method.....	13
1.5.1. Data Collection Tools.....	15
1.5.1.1 Classroom Observation.....	15
1.5.1.1.1 The Observation Process.....	16
1.5.1.1.2 Observation Data Collection Procedure.....	18
1.5.1.2. Teachers' Questionnaire.....	19
1.5.1.2.1 Piloting Teachers' Questionnaire.....	20
1.5.1.2.2 Procedure of Data collection.....	20
1.5.1.3. The Pupils' Questionnaire.....	22
1.5.1.3.1 Piloting Pupils' Questionnaire.....	24
1.5.1.3.2 Administering Pupils' Questionnaire.....	24
1.5.1.4. The Teachers' Interview.....	24
1.5.1.4.1 Description of the Type of Interview.....	25
1.5.1.4.2 Piloting Teachers' Interview.....	26
1.6 Data Analysis.....	26
1.6.1 Triangulation.....	27
1.6.1.1 Classroom Observation Data Analysis.....	28
1.6.1.2 Data Analysis of the Questionnaires.....	29
1.6.1.2.1 The Teachers' Questionnaire.....	29
1.6.1.2.2 The Pupils' Questionnaire.....	30
1.6.1.3 Interview Data Analysis.....	31
1.7 Ethical Considerations.....	32



1.8 Validity and Reliability.....	32
1.8.1 Classroom Observation.....	32
1.8.2 The Teachers' Questionnaire.....	33
1.8.2.1 Internal Consistency.....	33
1.8.2.2 External Consistency.....	34
1.8.3 The Pupils' Questionnaire.....	35
1.8.4 The Teachers' Interview.....	35
1.9 Limitations.....	37
1.9.1 Limitations of Classroom Observation.....	37
1.9.2 Limitations of the Questionnaires.....	37
1.9.3 Limitations of Teachers' Interview.....	38
1.10 Conclusion.....	39

## **1.1 Introduction**

The first chapter presents the research tools used and also the process of how they will be interrelated in the analysis of the gathered data. In this research, four (4) tools are used to collect data from the designed population of participants. As this study focused on academic classroom teaching and learning, it included classroom observation, teachers' and pupils' questionnaires and teachers' interview.

In fact, classroom observation was carried out by using the structured observation method. The observation was followed by two questionnaires: one for the teachers and one for the learners. Though this study focused mainly on teachers, it was thought more objective to explore the learners' social environment and their motivation towards technology use in English language learning.

In this research, the sample population was selected from ELT teachers in the secondary schools in the town of Ain Temouchent. Both questionnaires were piloted, reworded more properly and administered to the participants. The data collected were cleaned from irrelevancies, odd copies and ambiguities. After doing a preliminary data analysis to test the hypotheses, the researcher got a general view of what this population thought of integrating ICTs into ELT classes in secondary schools. The data were collected and prepared and analyzed. The research method was a mixture of the qualitative and the quantitative type. The triangulation technique was used to compare the findings of the different research tools used in this study. This chapter indicates measures and precautions taken to ensure both external and internal validity, ethical issues encountered and reports remarks on the limitations of each research instrument used.

## **1.2 Objectives of the Research**

This research main aim is to give the teachers of English, students and academic researchers in Algeria as an explorative study of how ICT was integrated in the teaching of English in an EFL setting. The second aim was to explore secondary school teachers' and learners' attitudes and perceptions of the difficulties and also the challenges encountered in the integration of simple technological tools in their lesson planning and teaching practices.

This research attempted to determine the frequency of ICT integration in secondary school ELT classes; and see whether it could lead to some changes and innovations in the EFL teaching within Algerian secondary schools.

The results of this research can be of some help for the implementation of ICT in Algerian secondary schools in the future. Exploring the degree of technology integration and the pupil's ICT exposure in their social and learning environment, can also give better insights into the how and what to implement technology for.

### **1.3 Research Design**

The research design sets the paradigms of the present work which includes the research questions, the hypotheses, the research method, the population and the data collection tools. The design is based on mixing quantitative and qualitative type of data and integrates three tools to collect the data. It also clarifies how the findings will be analyzed and interpreted.

#### **1.3.1 The Type of Research**

This research is of the descriptive type. It explores teachers' attitudes and difficulties in using ICT in teaching ELT classrooms in secondary schools. It looks more like a cross sectional study which takes a 'snapshot' of a certain population at a particular point in time (Cohen et al, 2000). This study was led during the academic year 2013-2014. It surveyed teachers of English and pupils in Ain Temouchent secondary schools in order to explore the incorporation of ICT in classes: the frequency of use, the difficulties, and possible aspects of innovation in teaching through technology use.

“Descriptive research can be heuristic or deductive. While technically, qualitative research is also concerned with description, descriptive research as a type or category of research refers to investigation which utilizes already existing data or non-experimental research with a preconceived hypothesis.”

Seliger H.W. & Shohamy E.(2000:117)

This research endeavours to describe the extent to which ICT was incorporated in English classes in secondary schools and to find out whether technology use had brought out any innovation. The concept of the research questions gives this study an exploratory aspect. Therefore four exploratory questions are put forward as mentioned earlier in the general introduction. The first one concerns whether teachers are tempted to incorporate technology in teaching, the second one points to the frequency of ICT integration, the third explores the difficulties encountered and the fourth describes the eventual change in the teaching practice in ELT classrooms. This has led to hypothesizing that well-motivated and trained participants can introduce ICT more than others.

The same thing can be assumed for those who have free access to technological equipment and resources in schools. If there are less challenges and difficulties of access and pedagogical training, teachers will innovate their methods of ELT. To test these hypotheses and answer the research questions a mixed method is adopted.

### **1.3.2 The Research Method**

The present descriptive research is based on the use of both qualitative and quantitative type of data collection. Within the scope of this research, the mixed method of data collection is used. It is based on a mixed method design. It is mixing quantitative and the qualitative methods in a single research. The researcher needed to look at the nature of each type of research to get its positive aspects. The quantitative research is founded on the assessment of quantity or amount. It is appropriate to any phenomenon which can be described in terms of quantity (Kothari, 2004).

This research is partly quantitative as it surveyed teachers' and pupils' ICT use, attitudes and opinions in the educational process. Surveying in research is giving numerical descriptions of trends, attitudes or opinions of a population by studying a sample of that population by using a structured questionnaires or interviews to gather data, then to generalize from that sample to a population (Babbie 1990)<sup>1</sup>.

The qualitative research, however, deals with qualitative phenomena, i.e. those in relation with quality or kind. For example, those involved in exploring the reasons behind human attitudes, motives and desires. Interviews, among other tools, can be used as a suitable measure in this type of research (Kothari, 2004).

The choice of which research approaches to use largely depends on the types of questions being asked in the research study, and different fields of research typically rely on different categories of research to achieve their goals.

( Marczyk G., et al., 2005:17)

In the present study, both quantitative and qualitative types of research are essential to achieve all the needs of technology integration in secondary schools: besides quantifying participants, the qualitative measurement of the human aspects of the teachers, who are the active agents of the teaching practice, is also crucial to the study.

---

<sup>1</sup> cited in Creswell, J.,W. (2009), *Research Design, Qualitative, Quantitative and Mixed Methods Approaches*, 3<sup>rd</sup> edition, Sage Publications.

### 1.3.2.1 The Mixed Method

Mixed methods are not as popular as the quantitative or qualitative approaches. As they, first, appeared in the works of Campbell and Fiske (1959)<sup>2</sup>, they used multi-methods to validate psychological traits. Other researchers followed them and attempted to mix methods then, to screen approaches for data collection. These approaches were quickly made appropriate with qualitative data instruments like observations and interviews which were combined with traditional surveys as quantitative data Sieber, as cited in Creswell (2009).

Creswell (ibid) believes that mixed methods research is a kind of new in dealing with social and human sciences. It requires the gathering and analysis of both types of data using two approaches to make the study sounder than when carried out by qualitative or quantitative alone (Creswell and Plano Clark, 2007). The mixed methods became popular as they employ qualitative and quantitative methods. As the research is a continuous process, the mixed methods are considered more appropriate to empower both qualitative and quantitative research. Because of the complex nature of social and health problems neither quantitative nor qualitative approach are appropriate to carry out this complex research alone. In fact, there is more gained information by combining two research methods than when just employing only one. Hence, a deeper grasp of the social problem is also obtained (Creswell, 2009).

Some characteristics of the mixed method that shapes the procedure of research are reported by Tashakkori and Teddlie, (2003).

- It is both pre-determined and emerging
- It comprises both open and close-ended questions
- It collects multiple forms of data drawing on all possibilities
- It allows both Statistical analysis and theme and pattern interpretations

Shortly said, it takes the characteristics of both quantitative and qualitative methods.

The method used in the present study is the Concurrent Mixed Method. According to Creswell (2012), it is a method in which the researcher combines both quantitative and qualitative data for the sake of giving an overall comprehension or analysis of the topic of interest. Both types

---

<sup>2</sup> Cited in Creswell, J.,W. (2003:15), *Research Design, Qualitative, Quantitative and Mixed Methods Approaches*, 2<sup>nd</sup> edition, Sage Publications.

of data are gathered simultaneously. After that, the interpretation of results is included. In this type of design, small forms of data i.e. either quantitative or qualitative are embedded into the larger data gathering to be able to analyze all types of questions (open or closed ended). The qualitative focuses on the research process whereas the quantitative deals with the outcomes (Creswell, 2009).

The rationale behind using such a design is to compensate the weaknesses of one method procedures and instruments by another one so that the researcher gets an exhaustive comprehension of the research problem through the collection of both qualitative and quantitative data (Creswell, 2012). As a matter of fact, in this study, the questionnaires collected data are mostly quantitative data; they are mixed with the qualitative data collected from the interview and the classroom observation so as to compensate the weakness of one tool by another.

### **1.3.2.2 Case Study**

This research is considered as a case study since it is a primarily a qualitative aspect. The case study is more efficient when it focuses on a real life context and uses various methods and data sources to investigate it thus it is possible to obtain a rich research content which reflects the participants' perspective (Stark, S. and Torrance, H., as cited in the work of Somekh B. and Lewin C., 2005:33). The case of Ain Temouchent secondary schools is, considered as a sample representing all Algerian secondary schools.

“Case studies generally aim to provide a holistic description of language learning or use within a specific population and setting. However, whereas ethnographies focus on cultural patterns within groups, case studies tend to provide detailed descriptions of specific learners (or sometimes classes) within their learning setting.”

(Mackay and Gass, 2005:171)

In the same context, Nunan (1992) distinguishes between ethnography and a case study by advancing that ethnography is almost like a case study in its philosophy, methods and concern to study something in its context. However, ethnography comprises larger population for study whereas a case study narrows the subject or field of study just as in language teaching research or classroom problems. As a tool of research, the case study can handle both qualitative and quantitative data collection methods while ethnography uses only the qualitative one.

This study is also following a case study design. A case study research is first thought of as qualitative and traditionally ethnographic as considered by Rogers (2002); Creswell (2002) and Mackay (2006). Both classroom observation and the interview tackle the qualitative aspect of this study beside the semi-structured questionnaires where open-ended questions are used. The qualitative aspect of the research and the inclusion of participants from one specific town as Ain

Temouchent gives it the case study profile. It has been argued that the case study design is popular for qualitative research but it can also include quantitative method of research. Some of the well-known case study collection instruments are: interviews, participant observant, tests, textbooks, field logs, documents like class syllabuses, handouts and homework assignments (Griffee, 2012).

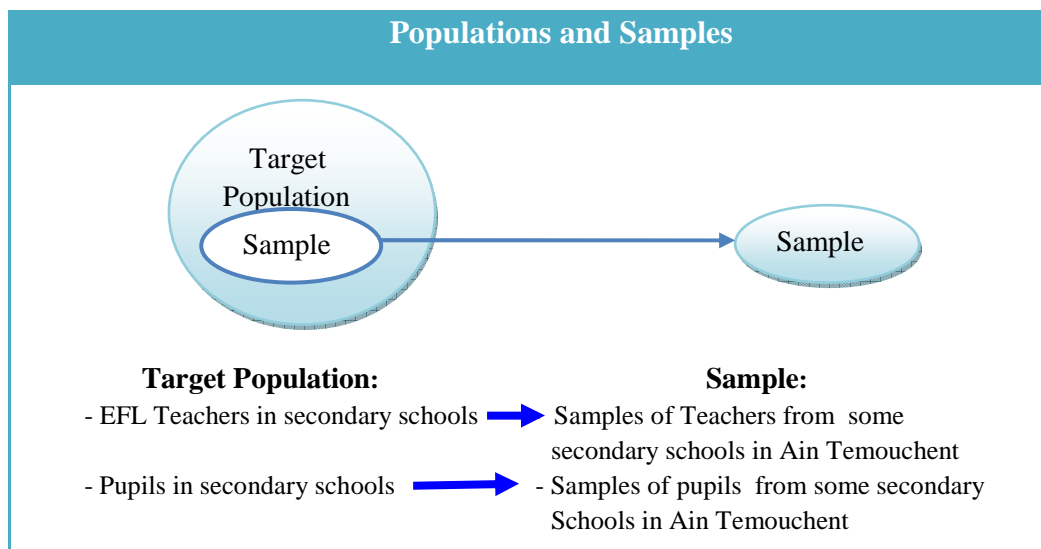
#### 1.4 The Sample Population

While designing a research, it is very necessary to know how to select the participants. The researcher needs an appropriate number of participants especially in large scale studies (Geoffrey et al.2005). Almost all social sciences researches have human participants involved in contrast to research in science, physics or chemistry.

“A sample is a subgroup of the target population that the researcher plans to study for generalizing about the target population. In an ideal situation, you can select a sample of individuals who are representative of the entire population.”

(Creswell, J.W. 2012:142)

The Sample population in this research represents a sample from the targeted population. The selected participants are ELT teachers at the level of secondary schools in the town of Ain Temouchent. They are aged between 25 to 60 years. This population is representative of teachers at this level in other schools in the same town.



**Figure 1.1 Populations and Samples<sup>3</sup>**  
(adapted from Creswell, J.,W. (2012)

<sup>3</sup> Figure 1.1 is adapted from Creswell, J.,W. (2012), *Educational Research. Planning, Conducting and Evaluating Quantitative and Qualitative Research*.4<sup>th</sup> Ed. Pearson.

The pupils are the second population in this study. These participants are selected from the same secondary schools as the first population. They are aged between 15 and 19 years. This chosen population of learners is composed of pupils from all streams and levels. This selected sample will allow us to get an exhaustive comprehension of pupils' perception of ICT use in Ain Temouchent secondary schools. To make the results more representative, a number of classes are selected at random from different schools.

In the previous figure (1.1), the target population would represent all teachers in secondary schools in all Algerian towns and the sample inside the small circle represents the population selected from the town of Ain Temouchent secondary schools. The same can be said for the population of pupils. The big circle for the larger population whereas the small one indicates the sample of population worked upon in the present study.

Geoffrey (2005) argues that it is vital to get accustomed to the commonly employed methods in this field to select the right group of participants. Surveying the population of teachers in secondary school is done in this research. According to Geoffrey (ibid), before doing any research plan, the researcher has to set an appropriate research design before selecting the participants and assigning them to groups. But the way they are selected depends on the investigation questions, the available number of participants and the research design adopted. In fact, surveying teachers of English in Algerian public secondary schools in the town of Ain Temouchent is carried out through inquiring about the reasons of using ICTs in an educational setting and the frequency of utilization.

The most commonly used method of selecting participants is Randomization (Geoffrey et al.2005). Randomization in the present study is employed to a certain extent as the targeted population is already known. However, the informants are not specified in advance or preferred on one another, in term of choice. The simple random sampling method is used in selecting the participants. The typical procedure used in simple random sampling is to assign a number to each individual in the population and then use a random numbers table (Creswell, 2012); however in this study, the simple random choice was based also on the availability of participants. In effect, they are handed the questionnaire altogether at random after getting their verbal approval to participate.

As there is difficulty to generalize results on other larger groups especially those not included in the study. To avoid this, the researcher would not want to limit participation on one specific group only but it should include samples from the entire population. However, because of the lack



of time, money and other resources, the researchers cannot cope with such a large population. That is why they use a sample of the population of interest. (Geoffrey et al.2005).

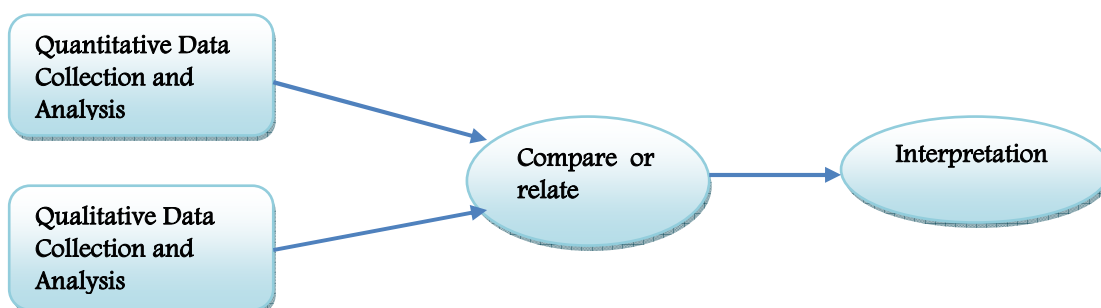
Accordingly, the sample population in this research consists of ELT teachers of Ain Temouchent secondary schools. In order to make it representative of other teachers at this level in the same town, the random procedure of participants' selection is adopted in a way that the entire population has probability of being selected in the study (Kazdin, 1992). To be able to generalize the findings on other teachers of English in other secondary schools in Ain Temouchent, the researcher needed to do replication testing that is why another sample of the population of interest is administered the same questionnaire for the sake of validity and reliability.

### 1.5 Data Collection Method

This study is based on three different types of tools: a teachers' questionnaire, a pupils' questionnaire, a teachers' interview and classroom observation. These tools collect both quantitative and qualitative data for the research needs.

According to Creswell (2012), both qualitative and quantitative data are collected, analyzed separately. Data results are compared, constructed and interpreted to check whether they converge or not. So, data from all of the instruments, in this study, are collected and analyzed separately. The results are compared through triangulation method to see if the results corroborate.

Figure1.2 below represents one type of the Mixed Methods designs.



**Figure 1.2** The Concurrent Mixed Method Design

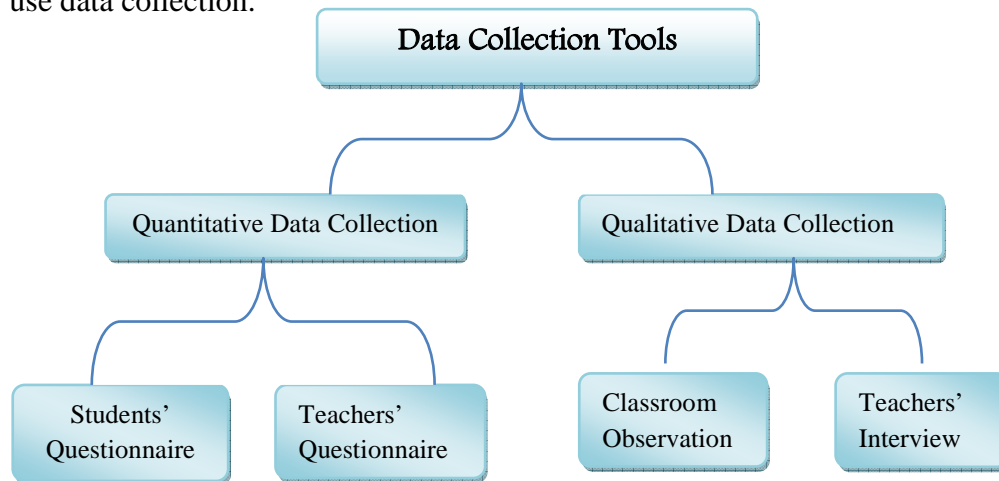
*Adapted from Types of Mixed Methods Designs, Creswell (2012)*

To distinguish the mixed method from other methods, some of the features of the mixed method need to be mention in here: Both qualitative and quantitative data are considered the same in the mixed method research.

- ✓ Data gathered from qualitative and quantitative i.e. from an interview are as important as those from a questionnaire.
- ✓ In a mixed method, the researcher gathers both qualitative and quantitative data at the same period of time. He can collect qualitative data about students learning meanwhile he can collect quantitative observation on students by using a checklist.

The results are compared after the analysis to see if the two qualitative and quantitative databases are similar or dissimilar Creswell (2012). The Concurrent Mixed Method Design is appropriate for the present study. It is the convergence of both quantitative and qualitative data to supply an intensive examination or analysis of the researched topic. In this design, the two types of data are gathered at the same time and after the interpretation, the information is integrated (Creswell, 2009). The figure above represents how quantitative and qualitative data are collected simultaneously and then analyzed separately. After that, they are either compared, if the results are different or are mingled and related into one body of information, if they are similar. The last step, in the figure, is the interpretation of the mixed results altogether.

In effect, the comparison of results in the present study is done according to the mixed approach: the results from qualitative and quantitative data are described separately. The quantitative statistical results are given first, then after that, the researcher supplies the qualitative data output to either confirm or disconfirm those statistical results. Finally, there comes the interpretation stage of the whole data. Figure 1.3 below shows the different tools used to gather ICT use data collection.



**Figure1.3** The Different Data Collection Tools

In this study, the data are collected through the use of quantitative and qualitative methods. The figure above shows the tools used for each collection. To ensure an accurate data analysis, the data collection has been made consistent through the use of well-constructed questions in both

teachers' and pupils' questionnaires and also in the interview. The data collection tools have been reviewed and corrected after being tested on samples from the targeted population in the piloting stage so as to make them more consistent and reliable. The next sections will include the four data collection tools used in this study.

### **1.5.1 Data Collection Tools**

The tools included in this research are classroom observation, teachers' and pupils' questionnaires and a teachers' interview. This section is devoted to illustrate each tool description, utility and purpose. "All relevant data from various data streams (interviews, observations, questionnaires) are collected to provide a collective answer to a question." (Cohen et al, 2007:468). The tools, in fact, are surveying one research objective which is ICT integration in EFL classes.

#### **1.5.1.1 Classroom Observation**

Research is primarily based on direct observation of the phenomenon or the subject of interest. The major objective is to obtain data by observing or even screening participants in a given situation. It has two folds: to have good awareness of the world around us and to be able to make valid measurements. Any scientific research is primarily based on observation (Geoffrey Marczyk et al, 2005).

In this research, the participants are teachers of English and their pupils in a teaching-learning situation inside their classrooms in secondary schools in the town of Ain Temouchent. Observing teachers in their daily practice is necessary to carry out the present research. While observing the teachers, we draw an overall picture of the research. The natural observation conducted in the field of teaching constituted a basis for this research: to inquire about the incorporation of technology in ELT classroom environment. This type of in-between-colleagues observation is usually very common, at least in the beginning of the teaching career. Starting from there, the researcher could adopt a more conventional type of observation, i.e. the more structured one. This one enables him to measure the remarks of the targeted population. For that purpose, a checklist with predetermined categories is needed (Griffiee D. T., 2012).

According to Geoffrey Marczyk (2005), the researcher needs to be cautious when making measurements so as to avoid biased observations. S/he ought to use reliable measurement device rather than just guessing. In doing so, the researcher can avoid being influenced by other factors or falling into bias (Geoffrey Marczyk, 2005).

The tool of observation measurement prepared for this research is an ICT-based Lesson Observation Form<sup>4</sup>, composed of twelve(12) items. Some are related to the lesson format and others expose the lesson content. The observer should gather frequency data by completing the observation form. Participants will check in boxes of MCQ (multiple choice questions), choose from a list of given stems and will answer some semi-structured questions. Observers can easily answer them by referring to what is being observed. The observation form comprises five sections and a heading which contains background information about the observed teacher such as gender, age and teaching experience. It also has a space for the class background information like the level, the stream and the number of pupils.

Section one comprises question one, two and three and has to do with the type of the lesson presented, the class grouping and given task. In section two, there are three questions: four (4), five (5), and six (6) that concerns the ICT tool integrated and in which the lesson phase and the type of teaching that are followed by the teacher. In section three (3), the questions are about the lesson content authenticity and its appropriateness to learners' needs.

In the next section, the observer needs to decide whether the ICT integration has enabled the teacher to reach his/her lesson objectives and if it reflects the curriculum requirements. In the last section, the observer should highlight the difficulties that the teacher is facing while using the technological instruments and reports how s/he manages to overcome them.

#### **1.5.1.1.1 The Observation Process**

In every secondary school in Algeria, teaching English in an EFL setting requires cooperation and collaboration between teachers. This is done because teachers need to improve their teaching skills and “Demonstration Classes”, as the model course are known, are the best way to do that. Regular demonstration classes are organized within each school on the basis of some pedagogical directions of the syllabus requirements. These model lessons are usually scheduled for every teacher in the school, and it is held usually every month or less. Teachers take turns in preparing model lessons which other colleagues will be invited to attend as observers. The lesson content is part of the on-going programme taught to pupils. Nevertheless, these lessons are meant to illustrate some new techniques or teaching procedures, especially if trainees are attending.

An hour is already fixed, generally during the same week, to discuss and evaluate the lesson presented. The observers will, then, expose the positive and negative points of the lesson. After the discussion, they usually provide the teacher who presented the lesson with tips and techniques on

---

<sup>4</sup> Refer to the ICT Observation Form in Appendix E

how to cope with teaching difficulties. All the lesson details and comments will be kept one a logbook serving as a diary of demonstration classes.

“Different types of observations can be identified, depending on their degree of structure. In highly structured observations, the researcher often utilizes a detailed checklist or rating scale.”

Mackey and Gass (2005)

The idea of observing the use of ICTs in classroom practice is based on the lessons presented in demonstration classes for the simple reason that natural situation of observation cannot be arranged with teachers. A visiting plan has been arranged for classes observation according to the posted model courses within schools. The table below illustrates the attendance programme.

Attendance Schedule of the Visited Classes				
Lessons	Dates	Hour	Classes	Schools
Lesson one	Wed. Jan. 22 <sup>nd</sup> , 2014	11-12	2 <sup>nd</sup> year Math stream	EL-bachir EL Ibrahim, Ain Tecmouchent
Lesson two	Sun. Jan. 26 <sup>th</sup> , 2014	8 – 9	2 <sup>nd</sup> year scientific stream	Saim Haddache, Hamam Bouhadjar
Lesson three	Wed. Jan. 29 <sup>th</sup> , 2014	8-9	3 <sup>rd</sup> year scientific stream	Colonel lotfi, El-Ameria
Lesson four	Sun. Feb. 2 <sup>nd</sup> , 2014	10-11	1 <sup>st</sup> year Literary Stream	Tafna, Hassi El -Ghalla
Lesson five	Wed. Feb. 5 <sup>th</sup> , 2014	9-10	2 <sup>nd</sup> year languages stream	Ghar EL-baroud, Beni-saf
Lesson six	Sun. Feb. 9 <sup>th</sup> , 2014	10-11	1 <sup>st</sup> year scientific stream	Daoudi Mohamed, El Maleh
Lesson seven	Sun. Feb. 9 <sup>th</sup> , 2014	11-12	2 <sup>nd</sup> year Foreign Languages stream	Daoudi Mohamed, EL-Maleh
Lesson Eight	Thurs. Feb. 13 <sup>th</sup> , 2014	8-9	1 <sup>st</sup> year literary stream	EL-bachir EL-Ibrahimi, Ain Tecmouchent
Lesson nine	Wed. Apl. 16 <sup>th</sup> , 2014	8-9	2 <sup>nd</sup> year scientific stream	Tergua New secondary school
Lesson ten	Sun. Apl. 20 <sup>th</sup> , 2014	9-10	2 <sup>nd</sup> year scientific stream	Ahmed Belhadj, Chaabat EL-Ham

**Table 1.1** Attendance Schedule of the Visited Classes

Demonstration classes are a convenient opportunity to check how technology may be integrated in classes as they usually present new teaching strategies and techniques. This conventional type of observation is adopted for a number of reasons:

- Demonstration classes are performed on a regular basis.
- The researcher can make a programme of attendance.

- When the teacher who presents the lesson welcomes the idea, he acts more or less naturally.
- Observers are given observing directions and a checklist to fill in order to avoid bias.

According to Cohen, et al. (2000) in structured observation, the observer is passive and non-intrusive and does not intervene in the situation observed. He simply writes down remarks on the provided table of observation. This table must include categories to guide the observer to the targeted items.

The checklist method of observation is chosen because it is simple and very easy to use. It can bring reliable data since the observer can avoid subjectivity for s/he has an already-made list to fill in. The collected data work well with other quantitative collection methods like the questionnaire. The observer is handed an observation form to choose among some items by ticking during the demonstration classes.

As the type of observation adopted in this research is structured observation, the observer's evaluation of the item of interest should be sound and concise and in order to ensure that the observation form needs to be tested in advance. There should be a piloting to test these categories in the observation table to check whether they overlap or not. If they do, then the table-the evaluation guide- for observation must be revised again and corrected to be more consistent and reliable (Cohen, et al, 2000). We observed two classes working with ICT so as to test the observation form and we felt the need to re-adjust it. In fact, it was noticed that the questions allowed too much freedom which gave way to some ambiguity in reporting information. It was either irrelevant or inconsistent with the topic of research. Finally, the observation form was revised and some parts were reworded.

#### **1.5.1.1.2 Observation Data Collection Procedure**

Due to some restrictions related to time and place, observation in all secondary schools could not be possible without involving some colleagues. They were asked to carry out structured observation on our behalf. Each secondary school had a teacher coordinator who accepted to be an observer as long as it is done in the school s/he works in.

The observers were asked to get into classes to observe the lesson presented and fill in the observation form. Later on, the emphasis is put on lessons in which ICT is being used.

Because the observers are also teachers, they need not be trained; nevertheless, they were given some guidelines on how the observation should be carried out.

“Observation data can be words or countable items of interest, such as who speaks or where people sit. Non-verbal communication and behaviors, for example, the way people dress or the way they use physical space can be observed. Aspects of the classroom that might be meaningful, but are overlooked-the bulletin board or room décor-might be observed and noted.”

(Griffee, 2012:185)

In order to collect neat data during classroom observation, a number of restrictions and conditions have been made up as listed below:

1. Observers attending lessons are solicited to measure how ICT is adopted to present an English language class and evaluate it according to the observation form.
2. There should be at least two observers at a time in the back of the classroom.
3. These two observers must have been granted the approval of the teacher to attend his class.
4. They should discuss any ambiguous item or lesson components while observing i.e. before filling the “Observation Form”.
5. They have to agree on every single item as being achieved or not before reporting on the observation form.
6. Once the lesson is finished, the observers are required to report their observations and comments to the teacher performer to confirm their observations i.e. to clarify ambiguous lesson parts.

With the directions mentioned above, the observers are more or less equipped so as to collect some data more objectively. However, this is not enough. As observation alone cannot gather a complete image of the topic of research, it will be followed by the questionnaire to do numerical statistics and a face-to-face interview for qualitative data collection.

#### **1.5.1.2 Teachers’ Questionnaire**

A questionnaire is a research instrument which is made up of a number of questions and other interrogations with the purpose to gather information from research participants. The questionnaire is generally meant for doing statistics and getting participants responses after analyzing results. Questionnaires are commonly used. They usually appear in newspapers, magazines and nowadays they are on the web, too (Griffee, 2012). The readers are often invited to answer questions in a quiz form so as to find whether they are familiar with the news events of the week or to find about their knowledge on celebrities or any social phenomenon or event. Questionnaires are popular

tools used to gather data when making research in various domains such as sociology, psychology and education (Griffiee, *ibid*).

#### **1.5.1.2.1 Piloting Teachers' Questionnaire**

The questionnaire was piloted to see whether it contains any deficiencies and to get some suggestions to improve the research instrument.

The questionnaire was tested on a population of 20 teachers from five (5) secondary schools. Most of the participants' age ranges from [24-30], [31-40] and [41-59]. These participants work in the secondary schools of Ain Temouchent and are selected randomly, without any preference. They were allotted enough time to complete it. This was done in the month of November 2013.

When reading the completed questionnaire, it was found out that the great majority of respondents did not answer all the questions. There were also some ambiguous questions, too. To redress that, a number of changes have been made: the number of questions was reduced from twenty-two (22) to nineteen (19) questions and the type of questions was made simple and direct to be easily understood. Ambiguous questions that were left unanswered were avoided. Question one in the age range have been changed to correspond to the participants age and avoid misleading age ranges: for example from [24-30]; [30-40]; [40-59] are changed to [24-30], [31-40], [41-59]. Another two questions have been skipped in the questionnaire after some preliminary data analysis because they created confusion among respondent: Question four (4) regarding the number of hours using ICT in the week and question five (5) concerning the repetition of ICT frequency of use .The same thing was already asked in the background information sub-question number "c".

#### **1.5.1.2.2 Procedure of Data Collection**

The teachers' questionnaire is made relevant to the researched topic by covering the different points: it contains open-ended questions to collect qualitative data and close-ended ones to get quantitative data. 'A questionnaire is a very convenient instrument because a substantial amount of data can be gathered from a group of participants in a fairly short period of time.',(Creswell, 2002).

Gay and Airasian, as cited in (Griffiee 2012:135), consider the questionnaire as a set of questions related to the research topic. They have a heuristic function. A definition can be heuristic when it states the items of research to a given topic. Vogt, as cited in (Griffiee 2012 :135) defines the heuristic function in his methodology dictionary as a theory, a model or a definition that is generally instructive.



Griffiee (2012) advised to approach the questionnaire from two sides: administration and format. It can be either printed on paper and handed directly to the informants in a form of a test, or sent online or mailed to the participants or done through the telephone. The format concerns the layout on a page. A questionnaire has three parts: 1- demographic, 2- closed-ended and, 3- open-ended items.

1- Demographic has to do with information about the questionnaire topic and title and about the respondents. The aim is to specify the research document like the name of the questionnaire and the date of administration.

2- Closed- ended items: are typical series of questions to gather quantitative information about the topic of inquiry. The respondent either chooses between many options or states his reaction about something by indicating a number or indicating true or false, agree or disagree.

3- Answering open-ended items which concern the respondent's opinion. Examples of these are short answers or sentences completion (Griffiee, 2012).

The teachers' questionnaire in this research is printed and handed directly to the population of participants in a form of a test. Since it targets EFL teachers in secondary schools, it was handed at random to all categories of teachers: seventeen (17) trainee teachers, twenty-four (24) certified head-teachers and fifteen (15) teacher trainers and a substitute teacher. The total number of teachers who were administered was 93 and 67 completed it.

The questionnaire is composed of a mixture of close-ended and open-ended questions. It is constructed in a way to ensure quantitative and qualitative data collection. Griffiee (2012) stated that data can be collected by using both close-ended and open-ended items. Data gathered from closed-ended items is easier to collect and analyze using statistics. On the other hand, data taken from open-ended items is not that easy to analyze but still provides valuable and complete explanations and answers.

As any research instrument, the questionnaire in this study consists typically of the background information of the participants such as age, teaching experience and experience of ICT use. This type of information enables us to bring out the informants' social and professional conditions that constitute the basic pillars of any study.

There are six (6) sections in the questionnaire and nineteen (19) questions. Questions dealing with the same notions will be combined and analyzed in separate sections or paragraphs. Like the

first six questions deal with the teachers ICT uses, frequency of integration, ICT resources and ICT curriculum requirements. In section two, in question number two (2), the focus is on the teachers' attitudes and opinions. In section three, questions are devoted to reveal the type of ICT training and support. Section four (4) deals with teachers' competence. In section five, participants are questioned about the lesson phases in which they integrate technology. The last section, six(6), of the questionnaire is devoted to inquire about the challenges and difficulties the participants face when integrating ICT in their classes.

When administering the questionnaire to the participants, they were attending a seminar .The general mood was adequate to distribute a questionnaire to the respondents. The researcher also got the approval of the general inspector of English<sup>5</sup>, who was in charge of the seminar organized in Maliha Hamidou Secondary School in Ain Temouchent, in November 2013. The participants are asked to answer a semi-structured questionnaire with both close-ended and open-ended questions. In order to give more validity to the data, the participants were assured anonymity and given some directions on how to complete the questionnaire. Those who have participated when piloting the questionnaire were asked not to fill it again since they have already been accustomed to it; this can influence their answers.

### **1.5.1.3 The Pupils' Questionnaire**

Despite the fact that the present study is focusing more on the teachers' profile of the research concerning the integration of technologies, pupils are a non-negligible part of the teaching and learning process. In order to explore their attitudes and the role of ICT in their social environment a questionnaire is administered to them.

Though the pupils' questionnaire consists of both closed-ended and open-ended questions, it is more made more structured than the teacher's one. This was done for two reasons: firstly, it is due to the age and number of participants: secondly, it will restrain the replies within the research objectives. According to Cohen (2000) the bigger is the number of participants, the more structured, closed and numerical the questionnaire needs to be, and the smaller the number is, the less structured, more open-ended the questionnaire may be. That is why the present questionnaire is meant to gather more quantitative than qualitative information from pupils in the secondary schools of Ain Temouchent. It explores pupils' opinions and their social attitudes on the integration of ICT in English language learning.

---

<sup>5</sup> The reader can refer to the inspector's authorization for administering the teacher's questionnaire in Appendix A

“Data from questionnaires are self-reported data. A questionnaire is an appropriate instrument collecting data on what your students think or believe about certain issues. For this reason, a questionnaire is a standard data-gathering instrument for need analysis”  
(Creswell, 2002:421)

The population of pupils questioned in this study is in those attending secondary schools in the town of Ain Temouchent. They are administered a questionnaire which contains twelve (12) questions and is purposefully translated into Arabic so as to make it easier to complete for the weaker pupils in English. It is composed of five (5) sections. The objective of the questionnaire is to reflect the learners’ social environment influence toward the use of ICT for learning. It explores participants’ attitudes and readiness to learn through the use of technology. The sample population of the participants is from different levels and streams chosen at random. The participants’ population is indicated in the table below according to their secondary schools and different streams.

	Participants’ Secondary Schools	The Different Learners’ Streams									
		2GE	3SE	2LP	1A.s	3GE	3LE	2LE	1 L.	2SE	3TM
1	Colonel Amirouche A. Kihal	23	21	22	21	4	7	13		29	
2	Colonel Lotfi-El America		10		15			3			5
3	Daoudi Med –El Maleh										
4	El-Bachir el Ibrahim A.Temouchent				29						
5	Ibn El Haithem-Beni Saf							22			
6	Idriss Affifi-A.Temouchent		18		29				14	28	
7	Lycee Tafna-Hassi El ghalla										
8	Maghni Sandid Med		8	5							
9	Maliha Hamidou- A.Temouchent				20					26	
10	Saiam Haddache Hamam Bouhadjar								20		
	<b>Total according to streams</b>	<b>23</b>	<b>57</b>	<b>27</b>	<b>114</b>	<b>4</b>	<b>7</b>	<b>38</b>	<b>34</b>	<b>83</b>	<b>5</b>

**Table 1.2** The Population Distribution according to Schools and Streams

There are 392 participants and the age range is set up into three (3) age range categories which correspond to all educational levels and streams with no distinction: first, second and third years pupils in the secondary schools in Algeria.

### **1.5.1.3.1 Piloting Pupils' Questionnaire**

All data collection tools, including the pupils' questionnaire, have to be tested since the researcher cannot be sure how the respondents will interpret the questions. Therefore, it is advisable to pilot the questionnaire, at least once, on three or four participants who have the same features as the targeted population and who have quite an accepted level of language mastery Gay & Airasian (as cited in Griffee, 2012:142).

The pupils' questionnaire in the present study has been piloted on pupils of a scientific stream class from Maghni Sandid Mohamed Secondary school (Ain Temouchent) for the sake of testing the questions and making some adjustments. A group of twenty (20) pupils were handed the questionnaire at random so as to be completed and returned. Only eight (8) pupils have completed the questionnaire. After the correction and some modifications like the choice of easier vocabulary items in English, an Arabic version was adopted. So the questionnaire is written both in English and in Modern Standard Arabic (MSA) language to be well understood by the targeted population. Besides, the questionnaire focuses on ICT use and the responses of pupils regardless their oral or written English language competence.

### **1.5.1.3.2 Administering Pupils' Questionnaire**

The pupils' questionnaire was distributed by their English language teachers in their classroom. They gave approval to participate in this study therefore they were guided on how to administer it in classrooms or leave it to the pupils to complete it at home. The Arabic version of the questionnaire was of precious help as it saved teachers the trouble to explain every little detail for the weaker pupils in English. It also guaranteed that participants would not fill the questionnaire inappropriately, in case they could not understand English well and felt ashamed to ask for clarifications. The questionnaire was given to almost every teacher in every school; the pool was large and the response rate was high.

### **1.5.1.4 The Teachers' Interview**

The interview is the second tool used in this research, after the teachers' questionnaire. It is used to question participants and collect a more qualitative data that complete the quantitative data already gathered by the questionnaire. Nunan (1992, p.231) defines the interview as the elicitation of data by one person from another through person-to-person encounters (Kvale, 1996)<sup>6</sup> sees it as a conversation with a structure and purpose whereas Cohen, Monion and Morrison (2000) consider

---

<sup>6</sup> cited in Griffee T. D., (2012:159). *An Introduction to Second Language Research Methods, Design & Data.*, TESL-EJ Publications.

the interview more than a tool for collecting research data for them; it is also a social interpersonal encounter. To sum it up, an interview can be regarded as a research instrument with a structure, a form and a definite objective. It is rather a face-to-face or a person-to-person conversation with the aim to gather meaningful data that requires analysis and validation (Griffee, 2012).

#### **1.5.1.4.1 Description of the Type of Interview**

To specify the type of interview conducted in the present study, the researcher needed to have a general idea about the already existing interview types. For Cohen, Manion and Morrison (2000) there are open interviews and closed ones. The open ones originated in the early works of Sigmund Freud<sup>7</sup>. The interview, then, was used as a therapy procedure where a patient laid on a couch and is encouraged to talk about his pain or the difficulties s/he is facing. This type of interview was modified to suit research but it is the interviewer who designs the respondent as the latter is considered to possess a helpful experience on the researched topic. An example of an open question is: “What do you think of X?” The closed interviews, on the other hand, ask the respondents questions about facts in order to collect information from a group of interviewees to reach generalizable outcomes.

For Hitchcock and Hughes (1995)<sup>8</sup>, there are eight types of interviews. Two main categories are: standard interviews and non-standard interviews. The standard type consists of structured, semi-structured and group interviews while the non-standard type refers to group, ethnographic, life, history, informal and conservation interviews. The Standard Interviews have predetermined questions to be followed literally by the interviewer without changing or asking for clarifications; in contrast to the semi-structured interviews where the questions are prepared in advance but the interviewer is free to ask more questions for clarifying purposes. In the structured interviews, a very large population is asked the same questions. Finally, in the non-standard type of interviews, several people are interviewed at the same time, those who have similar features such as academic problems, failure or leadership.

Each type of interview will be used depending on the aim, knowledge and the skill of the researcher (Griffee, 2012). In fact, the standard semi-structured interview type includes previous preparation of questions and the possibility to search more for new insights and further

---

<sup>7</sup> Sigmund Freud was an Austrian neurologist Scholar, Psychiatrist, (1856–1939 best known for developing the theories and techniques of psychoanalysis.

<sup>8</sup> cited in Griffee, T. D. (2012:159) *An Introduction to Second Language Research Methods, Design & Data.*, TESL-EJ Publications

clarification, while interviewing the respondents. That is why it is mostly used in academic researches.

The researchers usually choose the interview as a tool for data collection because it is considered easy and talking is natural (Griffee 2012; Lazaraton 2002 as cited in Griffee 2012:160). Another reason for preferring the interview instrument is that candidates for interviews like students and teachers are generally cooperative. In the present research, the interview is selected for the advantage of being cross-sectioned with other data from questionnaires for both teachers and pupils and classroom observation using a triangulation method to strengthen the validity of results interpretations.

However, the interview, as an instrument for collecting data, has various limitations. First of all, not all respondents are articulate; as a consequence the respondent may be unaware of your topic of interest and will not provide the exact information. It can be worse if he/she says what they do not mean. Beside this, the researcher cannot, sometimes, find available people to interview and when he finds them, they might not have the right information needed plus being sensitive to the subjects (Griffee, 2012).

#### **1.5.1.4.2 Piloting Teachers' Interview**

The interview is tested on a group of five (5) teachers selected randomly from the targeted population. A number of corrections have been made in the interview to serve the main objective and not to make it too long to avoid boredom. After the interview is piloted, some changes have been made as far as the order of questions is concerned. The question about ICT training was moved upward to be the third one just after the one concerning ICT familiarity so as to have some logical follow up order of questions.

### **1.6 Data Analysis**

Before starting to analyze the collected data, the researcher has to take into account the format of the data analysis s/he is going to adopt. The lay out and structure of the questionnaire, for example, will allow him/her to order and classify data into categories, do numerical statistics and analyze the data results. Thus, s/he could be able to interpret them (Cohen, et al., 2000).

The mixed method adopted in the data collection in which both qualitative and quantitative data collection tools were used determines the type of analysis used in this study. The findings from each tool will be compared with those derived from another through triangulation.

### 1.6.1 Triangulation

Triangulation is defined as two or more methods of collecting data when making research on activities or attitudes of the human beings. Literally meaning, triangulation is a procedure that concerns a physical measure. Triangulation was well-known for the ancient Greeks and Egyptians. For many centuries, it was generally used by the maritime navigators who used to position their ships during trips (Hales and Peersman, 2010).

The introduction of triangular techniques in social research has given a detailed explanation of somehow rich and complex human behavior by referring to more than one standpoint. The study should be both quantitative and qualitative. Campbell and Fiske (1959)<sup>9</sup>, regard triangulation as a strong means to prove validity in qualitative research.

Therefore, triangulating data results by comparing them through a fixed point as if it is a physical one would enable us to get more valid result about ICT use in Ain Temouchent secondary schools. The researcher using triangulation acquires confidence that the data s/he collected are generated from multi-method procedures (Lin, 1976)<sup>10</sup>. He further stated that this is reached as the researcher gets similar results after analysis. If the outputs of a questionnaire survey are somehow the same as those obtained from an observation research of the targeted domain, the researcher is self-assured. In this study, assurance about data analysis results is reached by cross-checking results from the questionnaire with those from the interview. After that, they are screened seeking relevance with classroom observations results. Triangulating these three sources of data collection offers more reliability to the study results and implications.

Accordingly, the triangulation method is adopted in the present research and the results of all the gathered data tools are analyzed, compared and contrasted to see if they converge or diverge. By the 1990, the mixed method integrated both quantitative and qualitative data. According to Tashakkori and Teddlie (2003)<sup>11</sup>, the findings of one method can show the participants the weakness of the other. Furthermore, these results of both methods can constitute important database or the results reinforcing each other.

---

<sup>9</sup> Cited in Creswell, J.,W. (2003:15), *Research Design, Qualitative, Quantitative and Mixed Methods Approaches*, 2<sup>nd</sup> edition, Sage Publications.

<sup>10</sup> Cited in Cohen, Manion & Morrison(2000:112), *Research Methods in Education*, 5<sup>th</sup> ed.,Routledge Falmer.

<sup>11</sup> Cited in Creswell (2009), *Research Design, Qualitative, Quantitative and Mixed Methods Approaches*.3<sup>rd</sup>.ed.

The teachers' questionnaire preliminary data analysis<sup>12</sup> in this study has enabled us to test the research hypothesis and have an overview of the research.

The data from the interview, the teachers' and pupils' questionnaires and the classroom observation are collected nearly at the same time and classified into categories according to the research questions and the hypothesis. The categories consist of also of the informants' attitudes toward the use of ICT in classes, their teacher training and development, their competence and the ability to integrate technology in teaching English language. The data are analyzed with reference to independent variables like age, teaching experience and ICT use experience.

First, the collected data are screened, cleaned of irrelevances. Then, they are organized into categories and sections. After that, they are analyzed according to the concurrent mixed method strategy<sup>13</sup>. The teachers' questionnaire quantitative data are analyzed separately and so is the data collected from the classroom observation and the interview. Next, the findings are compared and triangulated for convergence. Finally, all the data results are interpreted.

#### **1.6.1.1 Classroom Observation Data Analysis**

Structured observation is a systematic remark the researcher gathers into numerical data so that it is easy to compare settings, situations, frequencies and patterns. Calculations are also made easy namely for trends (Cohen, et al., 2000).

A checklist procedure is adopted observe the lessons based on the use of technological instruments presented by ELT teachers in Ain Temouchent secondary schools; they actually represent the sample population. The lessons can be presented through different technology tools: they range from the diffusing pictures on the wall by a data-show to the projection of video sequences in a form of documentaries, adverts etc. The procedure followed in data analysis is the one of the structured type. The observers are supplied with a checklist, commonly called an "Observation Form". According to Day (1990)<sup>14</sup>, the observation procedure is done through checking the boxes, in the observation sheet, of Multiple Choice Questions (here after MCQs) or yes/no categories to collect quantitative data. It is generally related to the frequency of ICT use in the classroom and English lesson planning.

---

<sup>12</sup> Preliminary data analysis: a brief analysis of the data collected from piloting the teachers' questionnaire on a very small population.

<sup>13</sup> see figure 1.2 of the Concurrent method strategy which is used to analyze data in the mixed method.

<sup>14</sup> Cited in Griffie, T. D. (2012:183). *An Introduction to Second Language Research Methods, Design & Data.*, TESL-EJ Publications.



To analyze the data from observing English language lessons, the collected data from the Observation Form are reported in a table to make it more quantitative. The table describes each section of the twelve observed items. The analysis is mainly descriptive and shows the percentage of each item, the ICT use frequency in each class and the technological equipment. The tasks performed and whether they go with the material chosen is analyzed qualitatively and interpretations are being drawn. Tabulations for each section illustrate the data collected and comparisons will be made with the quantitative data collected from the questionnaire.

#### **1.6.1.2 Data Analysis of Questionnaires**

Data are collected from both teachers' and pupils' questionnaires. Closed-ended and open-ended questions are used in the two of them in order to collect quantitative and qualitative type of data. Thus, they will be analyzed accordingly. Cohen and Manion (2000) suggested to first prepare data for analysis by cleaning. Manual coding is practical for small surveys but before doing that there is editing which is the checking of data to draw out errors made by the participants. This operation goes through the following steps: completeness of answers, accuracy and uniformity.

##### **1.6.1.2.1 The Teachers' Questionnaire**

The data that the researcher got from the questionnaire is first cleaned to be ready for analysis. The non-answered or half-completed questionnaires are not taken into account. Only the well-completed, neat copies were selected. There were about sixty-seven (67) copies out of a total of ninety-three (93) copies distributed previously to participants because the questionnaire was piloted and some questions were modified to ensure validity and to collect clean and more accurate data.

“In most types of research studies the process of data analysis involves the following three steps: (1) preparing the data for analysis, (2) analyzing the data, and (3) interpreting the data i.e. testing the research hypothesis and drawing valid inferences”.

Macky (2006)

The questionnaire questions are grouped into categories to be easily manipulated. For Macky (2006), this can be done in a five steps process: first, the collected data is transcribed for manipulation. Second, the researcher should think about how s/he plans to analyze data and group it accordingly. Third, he needs to read it thoroughly to get key ideas. Fourth, he has to read the key ideas again to identify re-occurring themes to get the broad lines. Fifth, each theme ought to be exemplified through a response.

Following Macky (2006) steps in analyzing data, the questionnaire data are divided into sections and categories. Each section comprises at least two (2) questions. The data derived from this questionnaire are quantitative. Thus, they will be separated from observation and interview derived data. However, they will all be analyzed about the same time. Tabulations, graphs and histogram are drawn to illustrate the data gathered.

The Questionnaire embodies closed-ended questions. The majority of these are reporting frequency data. Questions like “how often” and “how many” are introduced to measure the rate of ICT use as in section one. On this basis, the results will be analyzed and put into tabulations. Nominal data are gathered on the different types of ICT devices used in the classroom and the percentage of use is mentioned in tables. In section two, the data representing the attitudes of respondents are put in tabulation according to Likert Scale. In section three, data corresponding to the respondents’ ICT training are obtained by Multiple Choice Questions (MCQ) and Yes/ No type. They are classified into tables. The same is done for the respondents’ training and support, namely data from the interview and observation.

Correlation is made between the rate of ICT training and the rate of teachers’ competence. The frequency of teaching and learning practices is measured in group work and project- based activities. The last section presents data on the obstacles preventing ICT implementation in an ELT classroom.

#### **1.6.1.2.2 The Pupils’ Questionnaire**

The pupils’ questionnaire will be analyzed according to its objectives. The major one is to explore their responses toward the use of communication technologies in their social environment and in learning. It is important to state that data collected from the pupils’ questionnaire will be used for purely descriptive purposes in this study. This data cannot be cross-checked with that of the interview or the teachers’ questionnaire since they represent different populations and purposes. But there are some considerations to consider before analyzing the questionnaire. One of these is the preparation of data for analysis. According to Creswell (2012), this will help the researcher decide upon the method of measurement to use. Since some respondents’ answers were either missing or not completed properly, they were avoided and left out. After the collected data are cleaned, they are organized into categories which are connected to the main sections. Hand analysis of data is adopted and color coding is used to mark the key parts of the pupils’ questionnaire.

There are five sections and each one is represented by a quantitatively. The most important sections in the questionnaire are number two (2) and three (3) for they describe ICT learning, manipulation and use inside the classroom. ICT integration frequency in learning classes is also evaluated.

The difficulties faced in the school learning environment are measured through a histogram. The participants' opinions about ICT implementation in learning are scaled by pie-chart. Figures, tables and pie-charts report the main findings which will be interpreted.

### **1.6.1.3 Interview Data Analysis**

According to Wolcott (as quoted in Griffiee 2012:59) every human being keeps a story for himself and will not share it unless someone knows how to ask. This saying stresses the importance of having well-prepared questions before interviewing participants. The interview, as the second important research instrument, has an objective is to collect qualitative data which is, then, analyzed on the basis of the concurrent mixed method design. These data are analyzed separately from those of the teachers' questionnaire but they will be cross-checked, compared and interpreted to see to see if they converge. The interview data analysis is done after splitting the responses into categories. Like in the questionnaire, there are three variables in the interview: age, teaching experience and experience using ICT. The interview questions are divided into sections to provide a structure for analysis and interpretation.

The data collected from the interview are considered as raw data. It does not reveal anything until is interpreted Griffiee (2012). He actually reported that data interview can be analyzed in two ways, according to Hitchcock and Hughes (1995), first to become familiar with the data and then try to get coherent categories to be analyzed. The data interview of this study is collected through an audio-recorder. After listening several times to the recordings, the scripts are written down exactly as they were uttered. Before we proceed in analyzing data, themes, headlines and categories are created. There is emphasis on ICT integration frequency with relation to the teaching experience and ICT skills. The teacher attitudes are to be cross-checked with the questionnaire collected data. Another major concern is the teachers' difficulties to innovate in their teaching practice while using technology.

## **1.7 Ethical Considerations**

The data in this study are ethically collected according to the academic research norms. Questionnaire respondents are not passive data providers for researchers; they are subjects not objects of research Cohen (2000:245). One of the most important standards is the participants' consent. It was granted verbally by the participants when accepting to fill the questionnaire. The educational institution organizing the seminar granted us the approval to administer the teachers' questionnaire. Obtaining consent and cooperation of informants is crucial for conducting social or educational studies (Cohen, L. et al, 2000). Diener and Grandall (1978)<sup>15</sup> have defined informed consent as procedures through which people decide to join an investigation after being told about different facts surrounding that research.

However, according to Cohen, et al. (2000), the researchers in educational circles are not faced with such a dilemma. There is, somehow, a sort of a compromise. Informant consent is always sought so as to keep the welfare of the subjects during and after the research process. That is what is sought in the present research. The researcher spoke to the audience in the seminar and asked for the consent of the participants who were around 96 teachers of English. The topic of the research and its objectives were clarified. It was followed by an explanation of the questionnaire's main components to the participants who were encouraged to participate when assured confidentiality and anonymity. It is accordance with (Cohen, et al., 2000) who advised to provide complete anonymity for informants when completing the questionnaire. Neither the participants' identity nor the information gathered would be revealed. Thus, participants in this study cannot be traced through names or occupational details or symbols.

## **1.8 Validity and Reliability**

Both of the validity and reliability will be focused upon in the teachers' questionnaire, classroom observation and the interview. The tools have been made valid through some methodology procedures.

### **1.8.1 Classroom Observation**

The predetermined or the structured category of observation is carried in this research by administering an observation form to be completed by colleagues teachers who will act as observers as stated previously in the procedure of data collection. They will observe the lessons

---

<sup>15</sup> Cited in Cohen, Manion & Morrison(2000:51), *Research Methods in Education*, 5<sup>th</sup> ed.,Routledge Falmer.

presented by their colleagues in their schools. To make the observation form a valid checklist of research, it was tested by observing some classes.

“Structured observation is classroom observation using previously defined categories. In some cases, an observation form is given to the observer with instructions to note when, how often, or examples of classroom activities that in the observer’s opinion exemplify the category. This implies rather training, a theoretical basis for the categories, and instrument validation similar to that used by questionnaires and tests”

(Griffiee et al, 2012:188)

In order to validate the observation procedure, the observation form is made more reliable for data collection in classroom observation by doing some procedures:

- A number of experienced teachers, who did not take part in the present research, are given the observation sheet to read thoroughly and check whether It actually measures what it is supposed to measure.
- When piloting the observation form, there have been many suggestions and they were taken into consideration. Some advised the rewording of some vocabulary items. Others suggested re-ordering the checklist items in the form.
- Teachers needed to get used to the observers’ presence at the back of the classroom. To avoid stressing participants, only teachers who had already used ICTs in their classrooms, at least once, are selected.
- On the other hand, pupils may feel uncomfortable. To remediate that, they are being assured by their teachers that they are not being concerned by this observation and that they should behave naturally or as usual.

### **1.8.2 The Teachers’ Questionnaire**

The teachers’ questionnaire as a research instrument must be very well constructed to fit its purpose i.e. collecting data in an efficient way. It needs to be both accurate and reliable.

#### **1.8.2.1 Internal Consistency**

Internal Validity refers to the ability of a research design to carry out a sound study in which the results are not likely to accept other interpretations other than the one advanced in the present study. There must not be another alternative plausibility or explanation of the reached results (Marczyk G., et al., 2005)

To reduce measurement error and make it reliable, the questionnaire was typed and printed clearly and the instructions were made easily understood for all types of teachers. The level of

difficulty in the vocabulary chosen is adapted to the convenience and grasp of both the certified teachers and the beginners. It contained tables and structured questions enabling testing and scoring consistency.

To achieve internal consistency of the teachers' questionnaire, the structured and semi-structured questions all correlate with one another. In fact, they complement one another. Questions of ICT attitudes are directly linked to ICT training and teacher development which pave the way to the following questions about their ICT competence. The level of teacher competence is a parameter indicating how teachers are going to handle the use of ICT which leads to a question about the extent to which ICT is integrated in the classroom practice. The logical question following would be what challenges or difficulties do teachers face when using ICTs in classroom instruction.

To minimize the threats of internal validity, the questionnaire instrument is made more efficient and reliable after the piloting. Many arrangements are made so as to correct the mistakes and avoid bias. Validity of the questionnaire's results is ensured when they are cross-checked with those gathered with qualitative tools like the interview or class observation. The results can be similar or different. If the findings are similar, there is validity and the tools are reliable.

#### **1.8.2.2 External Consistency**

This section exposes how external consistency is reached in the teachers' questionnaire. The procedure includes precautions done by the researcher before the administration of the questionnaires to the selected population and before interview making.

“With external validity, we are concerned with the generalizability of our findings, or in other words, the extent to which the findings of the study are relevant not only to the research population, but also to the wider population of language learners.”

(Mackey and Gass 2005:136)

External consistency or validity is about being able to generalize the results of a particular study to larger extent. To minimize the threats to external validity, the researcher has to ensure that the research is well constructed and objective. In this research, external validity is enhanced by selecting a sample population from a larger group which has the same ethnicity, religion and language.

Another threat concerns the effects due to testing. Participants tend to respond in a different manner when they know they are being evaluated. In order to lessen the degree of artificiality in their responses, we assured them confidentiality and anonymity both before the distribution of the questionnaire and before being interviewed. They are also promised that no personal information will be revealed either verbally or in written form.

There was a second administration<sup>16</sup> of the teachers' questionnaire, in a short time afterwards. Replicating the questionnaire is done to increase the validity of results and see whether this research instrument is reliable.

### **1.8.3 The Pupils' Questionnaire**

This questionnaire is tested first on a small population to check its validity and ensure that it would be a reliable source of data collection. It was translated into Arabic to be at the informants' level of understanding. Informants could ask about the questions that are ambiguous or unclear to them before completing it. The level of difficulty was taken into consideration by facilitating the formation of questions and making them as simple as possible.

The informants are provided with a brief and concise explanation of the study significance and of what they are required to do and why. They are also guaranteed anonymity and confidentiality for their participation in the study.

Touchy subject-matters (personal inconveniences) in items were avoided because respondents might not respond honestly or at all. Leading questions were also avoided for they suggest to the respondents that one response is more appropriate than another. Each question stands on its own; but all questions serve the general purpose of research. Creswell (2012) also clarified that respondents are not required to supply their names so they respond at ease and this would reduce subjectivity.

### **1.8.4 The Teachers' Interview**

To validate the present interview findings, it has been triangulated with the questionnaire results. The findings, from qualitative data, are cross-checked with those of the quantitative ones from the teachers' questionnaire to check validity. It is a strategy proposed by Hitchcock and Hughes (1995)<sup>17</sup> who suggested re-interviewing as a check on the connections between data interpretations of the same respondent. So, after the summary has been done, the respondent was

---

<sup>16</sup> The teachers' questionnaire was distributed again to another population of secondary school teachers to check its validity and reliability.

<sup>17</sup> cited in Griffee, T. D. (2012:170) *An Introduction to Second Language Research Methods, Design & Data.*, TESL-EJ Publications.

consulted for his opinion on the interpretation of the interview he has been part of. If s/he approves on the interpretation, the researcher will then have the results validated. But if s/he does not approve, the differences in opinions will be discussed to find out the point of disagreement. A re-analysis is most like to be planned by the researcher.

Apart from triangulating results from two different sources, there are other ways to improve reliability of an interview. In this research, most of the interviewees were told about the topic and the objective of the interview but not of the questions content. Sub-questions are added so as to get the maximum of explanations and details from the respondents. The interview is reworded after piloting and is made shorter and precise. According to Kvale (1996:151), it is possible to make an interview more concise by excluding unnecessary small talk. Furthermore, the interviewer should know his objective very well and has to be articulate enough to keep the interview with the same length for all the interviewees. Each interview is audio-recorded and some of the questions were reworded and asked again in a different way to check if the interviewee answers are consistent as suggested by Kvale (1966:52).

Another major threat of the interview data collecting instrument resides in the bias of the interviewer himself. S/he has to get rid of his/her own beliefs and assumptions so that not to influence the interviewee in one way or another. According to (Long, 2005)<sup>18</sup>, one way to minimize the interviewer bias is to become aware that s/he is more than a question asker. S/he can lead the interviewee's answers without being aware of it; for example, like through nodding, facial expressions or through body gestures. To ensure validity, the interviewer made efforts to act neutrally when conducting the interview by avoiding nodding and other leading gestures. A special care was given to the following factors of influence: interview of location, length, timing and other environment factors, just as advised by Cohen, Manion and Morrison (2000:121).

The locations chosen to conduct the present interview are the interviewees' places of work: the secondary schools. The respondents are generally available there. There are no social constraints. A free room or the teachers' room gave perfect conditions of quietness for an interview. Environment factors like the weather conditions like heat or cold, fatigue were avoided to make the respondents more at ease.

---

<sup>18</sup> cited in Griffiee, T. D. (2012:167) *An Introduction to Second Language Research Methods, Design & Data.*, TESL-EJ Publications.



## **1.9 Limitations**

When making a research, a lot of parameters have to be taken into consideration. Nonetheless, there are always some research aspects that could not be managed as they should be. In this section, some limitations were noticed in classroom observation, the questionnaires and the interview.

### **1.9.1 Limitations of Classroom Observation**

- Doing observations in classroom teaching, even with one observer is never a natural teaching situation. But if classroom observation is a continuous practice, the teacher performer and the pupils will get used to it, to a certain extent. This allows the teacher to present his/her lesson in a more or less relaxed atmosphere. With the more experienced teachers, it is even better as they are already used to inspector's systematic unexpected visits and to the ordinary demonstration classes usually organized each two weeks in secondary schools.

-The researcher could not attend all the lessons based on ICT that he was invited to and this is due to distance and the lack of time. Meanwhile, some colleagues observed the lessons on our behalf. This was thought to cause a lack of objectivity although observers were given an observation form.

-The teacher presenting a lesson based on ICT to his/her colleagues would not feel comfortable being observed. Therefore, he cannot behave in a natural way and the teaching situation will turn to be artificial.

- Some of the lessons observers were trainees. As a matter of fact, they could not grasp what the observation form is meant for and could not complete it properly. These copies were not taken into consideration.

- Some of the observation forms are not completed because ICT was not used in the classrooms we attended due to a lack of equipment.

### **1.9.2 Limitations of the Questionnaires**

Not all the teachers have completed the teachers' questionnaire. Out of ninety-three (93) teachers present at the seminar only sixty-seven (67) teachers returned the questionnaire. Some of the returned questionnaires are not well-completed so they are not taken into consideration.

As far as the pupils' questionnaire is concerned, some pupils especially those in the first year level, might have copied answers from their peers in classes as they have thought the questionnaire is part of some testing. Those classes' copies were dropped altogether.

### 1.9.3 Limitations of Teachers' Interview

A large number of informants were female teachers and who, for social and cultural constraints did not approve to be video recorded in the face-to-face interview. The camera-shy respondents among the randomly chosen population of participants did not accept to be video recorded, too. Thus, the researcher adopted the taking notes procedure during the interview-time. Observation skills are relied upon to note the interviewee's facial expressions and even his/her body language. However, there were others who accepted to be audio-recorded and they are all male participants.

Though some participants agreed to be recorded, the researcher could not be sure of the credibility of the information they supply knowing they would be recorded. As a consequence, this can influence the data interview validity. According to Labov (1972) quoted in Gordon (2012) a recorder might undesirably falsify the data's quality. Thus the researcher should plan to reduce the observer's paradox<sup>19</sup>, reduce the "observer's effects and avoid tape-affected speech. The observer's paradox means the difficulty of obtaining natural speech from informants. To prevent this, Labov (1972) suggested some ways among others, such as making intervals or peer-interview. "This can be done through various intervals and breaks which are so defined that the subject unconsciously assumes that he is not at the moment being interviewed"(Labov 1972:92)<sup>20</sup>.

The researcher attempts to avoid the observer paradox when interviewing the participants in Ain Temouchent secondary schools: They were put in equal footing as the interviewer. Both have the same professional status. The participants are also being told that they can withdraw from the conversation and choose not to answer any question they consider as inconvenient (Labov, 1984:2). Another factor favoring good interviewing is the participants familiarity with the topics of research i.e. technology which is related to education and the place of the interview-the school (Cukor-Avila and Bailey, 2000)<sup>21</sup> quoted in Cukor-Avila (2014:3). Furthermore, the interviewee is not interrupted and given enough time to reflect on the questions.

---

<sup>19</sup> The Observer's Paradox is a theory proposed by William Labov, the father of Variationist sociolinguistics

<sup>20</sup> Quoted in Gordon C. (2012), *Beyond the Observer's Paradox: the Audio Recorder as a Source for the Display of Identity*.

<sup>21</sup> Cukor-Avila Patricia, professor of linguistics in the Department of English at the University of North Texas.

## **1.10 Conclusion**

This chapter presented the research design used in this study and illustrated the different methods employed to gather data. Surveying teachers' ICT integration in ELT in Ain Temouchent secondary schools is conducted by using questionnaire surveys for both populations of teachers and pupils.

All of the four tools have been piloted on small population so as to test their efficiency in collecting data and serving the research purposes. The participants among Ain Temouchent EFL teachers are observed in classrooms, questioned and interviewed. The selected population of pupils is handed a bilingual semi-structured questionnaire. The participants were assured that their personal information would be kept anonymous. In this work, the mixed method of research is adopted. Qualitative data are collected through classroom observation and interview making. The quantitative data are gathered by administering a semi-structured questionnaire to the population of teachers and pupils. Before analyzing the data, they are cleaned, prepared and organized into categories. After the findings have been compared and cross-checked, they are interpreted and illustrated through tabulations, pie charts and graphs. Some arrangements in the instruments of research have been made to ensure internal and external validity.

Finally, this chapter is closed by mentioning some precautions taken for sake of ethical considerations. There is also an explanation of the research different limitations encountered of during data collection and analysis.

# Chapter Two

*Literature*

*Review*

## Table of Contents

2.1 Introduction.....	42
2.1.1 Definition and Introduction of Key Concepts.....	42
2.1.2 The Traditional Learning Procedure .....	44
2.1.3 The Modern View of Learning.....	45
2.1.4 A Change from Teaching to Learning.....	45
2.1.5 Integrating ICT in Learning and Teaching.....	47
2.2. ICT Integration Difficulties and Challenges.....	49
2.2.1 School Related Challenges.....	49
2.2.1.1 Lack of Access to Resources.....	49
2.2.1.2 Technical Problems.....	50
2.2.1.3 Investment of Money.....	50
2.2.2 Teacher Related Challenges.....	50
2.2.2.1 Teachers’ Attitudes toward ICT Integration.....	50
2.2.2.1.1 Old Teachers versus New Teachers Attitudes.....	51
2.2.2.1.2 Teaching Experience.....	52
2.2.2.1.3 The Lack of ICT Experience.....	52
2.2.2.1.4 Lack of Teachers ICT Competence and Confidence.....	52
2.2.2.1.5 Lack of Time for Training.....	53
2.2.2.1.6 Lack of ICT skills.....	54
2.2.2.1.7 Lack of Pedagogical ICT Model .....	54
2.2.2.1.8 Lack of Time for Lesson Planning.....	55
2.2.2.1.9 Teachers “Resisting” Change.....	55
2.2.2.1.10 Motivating and Demotivating Factors.....	56
2.3 Teachers’ ICT Training.....	57
2.3.1 Technology Standards for Language Teachers.....	58
2.3.2 Pre-service Teacher Training.....	58
2.3.3 In-Service Teacher Training.....	60
2.3.3.1 The Apprenticeship Approach.....	61
2.3.3.2 The Action Learning Approach.....	62
2.3.3.3 Tentative Theory .....	63
2.4 ICT Integration in EFL Teaching .....	64

2.4.1 Evolution of Technology in EFL Teaching.....	65
2.4.2 Modern Integration of ICT.....	65
2.4.2.1 Internet Use in the Foreign Language Teaching.....	66
2.5 Models of ICT Integration.....	67
2.5.1 The Constructivist Model.....	67
2.5.2 The Reflective Model.....	69
2.5.2.1 Entry.....	69
2.5.2.2 Adoption.....	69
2.5.2.3 Adaptation.....	69
2.5.2.4 Appropriation.....	70
2.5.2.5 Invention and Innovation.....	70
2.6 Integrating ICT within Teaching Methods .....	70
2.6.1 The Cognitive Method of ICT Integration.....	70
2.6.2 The Socio-cognitive Approach of ICT Integration.....	71
2.7 ICT-based Lesson Planning.....	72
2.8 Innovation Perception and Adoption.....	73
2.8.1 Educational Change.....	74
2.8.1.1 Teacher Education.....	74
2.8.1.2 Models of Teacher Education.....	75
2.8.1.2.1 Rogers Model (Diffusion of innovations, 1995).....	75
2.8.1.2.2 Havelock and Zlotolow Model (1995).....	76
2.8.1.2.3 Hall's Model of Change (1987).....	77
2.8.2 The Role of the Institution.....	77
2.9 The Case Study: ICT in ALGERIA.....	78
2.9.1 The Algerian ICT Projects.....	79
2.9.2 ICT in Algerian Education.....	81
2.9.3 ICT in the Algerian Secondary School Curriculum.....	81
2.9.4 ICT-based Lesson Planning in Algerian Schools.....	82
2.9.5 ICT in English Language Teaching in Algeria.....	83
2.9.6 In-service Training in Algerian Schools.....	84
2.9.7 ICT Integration Challenges in Algerian Schools.....	85
2.10 Conclusion .....	85

## **2.1 Introduction**

ICT have so far been considered as the latest best tool used to boost education. Thus, teachers who are embarking on integrating it in their teaching process need to have a considerable amount of knowledge on how to take best advantages of its benefits.

However, integrating ICT presents mighty risks when it comes to pedagogy. Incorporating them in teaching should by all means be appropriate with the modern methods of teaching and must not replace the teacher. According to various literature reviews, teachers find using technologies in their classes a risky business for it might not bring the expected solutions to their pedagogical problems. For this reason, this chapter explores the literature of the main studies about the use of ICT as a teaching support in order to enhance learning.

Accordingly, the selected literature review will explore teachers' attitudes, ICT training, competencies and challenges in integrating ICT in an EFL setting in secondary schools. The present case study focuses on the use of technologies by Algerian ELT teachers and Algerian literature on the topic will be mentioned and explained when available.

This chapter attempts to determine the obstacles that prevent teachers from implementing technology tools in their teaching. Besides, it also focuses on the studies which provide suggestions and directions on how to facilitate ICT integration in EFL classes such as successful models that Algerian secondary school teachers could rely upon in this field.

The review of literature is arranged according to the theme of the research. The main stream of English language as a foreign language setting, the curriculum and the recent teaching method adopted. In addition, there is an indication to the factors which favour the ICT integration and those discouraging it. Another body of literature is examined in this chapter because it highlights the requirements and conditions for ELT innovation meant for teachers who want to embrace change in their profession.

### **2.1.1 Definition and Introduction of key Concepts**

In order to have a clear definition of the concept of ICT and its use in the educational context, this section presents some diverse views about this concept and its multiple interpretations. Apart from what the acronym ICT stands for: Information and Communication Technologies, there is not a worldwide agreed upon definition of ICT. The concepts are evolving in relation with each newly invented tool. The methods and the applications related to ICT are constantly on progress.

One way to deal with ICT is to consider the uses of technology that are already operational in businesses and organizations. It would cover electronic or digital products that store, retrieve,

manipulate, transmit or receive information electronically or in a digital form. Examples of those would be personal computers, cell phones, cameras, videos, digital television, email, robots etc. (Riley, 2012).

“Information and communications technologies (ICT) are a diverse set of technological tools and resources used to communicate, and to create, disseminate, store, and manage information. Communication and information are at the very heart of the educational process.”

(Blurton, C., 1999)

Blurton (1999) insisted on the communicative aspect of ICT as a medium of spreading information everywhere which enhance sharing and storing information. ICT, also known as computer technologies is not singular but, rather, connected to a growing number of electronic digital devices, combinations and networks for information acquisition and delivery. All these units are included under the common name of ICT (UNESCO, 2005:17). ICT are described by Vygotsky (1985)<sup>22</sup> as intellectual tools which function as an aide-mémoire to support the human basic mental functions which includes memory attention and the capacity to make associations and interpretations. Somekh (2005) added that the IT (Information and Technology) tools enhance the skills of the tool user, facilitate storing and release attention for thinking & reflection. Thus, creation gradually follows.

According to the research of Ginsburg (2011), technology is a tool, among others, which must be used to help enhance teaching practices not to replace teachers.

“Of the many topics I learned more about at the recent International Society for Technology in Education Conference (ISTE), and what stood out to me at ISTE even more than all the great ideas for integrating technology were all the reminders that while technology can enhance teaching, it can't replace teachers.”

(Ginsburg D., 2011:1)

For Ginsburg (2011), this does not mean that all those esteemed educators or any others who spoke at International Society for Technology in Education (ISTE) think we should cut back on

---

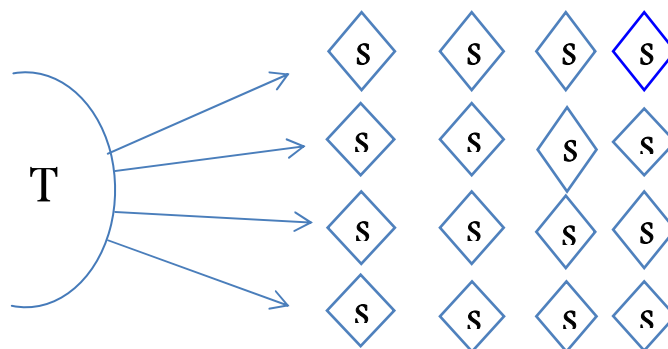
<sup>22</sup> Cited in Somekh and Davis (2005:14), *Using Information Technology Effectively in Teaching & Learning*. Studies in pre-service & in-service teacher education. Taylor & Francis e-Library



technology in schools. On the contrary, all speakers strongly favored the incorporation of technology to enrich classrooms teaching. The pupils and the teacher can benefit from various types of interaction under an ICT enabled environment which empowers them to engage in an open dialogue, rewarding interaction and collaboration (UNESCO, 2005:30).

### 2.1.2 The Traditional Learning Procedure

The new classroom of 20-30 students was created in the 20<sup>th</sup> century when education standards became available for nearly all people. The traditional education, however, considered learning as a hard task. It was a difficult process based on a deficit model of the learner. The latter's weaknesses and deficiencies are identified so as to build a compensatory instruction programmes; hence the curriculum generalized deficiencies of all learners. The traditional teaching approaches focused more on the role of the teacher as the only source of knowledge. He is the transmitter and the expert as shown in figure 1.1 below:



*T: Teacher*  
*S: Students*

**Figure 2.1** Information Transfer of Learning

Some of the best descriptions of the type of learning was brought by Bruer<sup>23</sup> (1993) in his book, “School for Thought”, he argued that research was concentrated on the weaknesses of pupils rather than on their strengths. Students were also asked to follow school norms to fit in. Instead, schools should have changed to accommodate students of different abilities. The language of the curriculum was very boring and did not sound real. Memorization was the only method of knowledge acquisition.

<sup>23</sup> cited in Khvilon & Patru (2002) p.17). *Information And Communication Technologies In Teacher Education, A Planning Guide, UNESCO*

### **2.1.3 The Modern View of Learning**

However, in modern time learning can be made easier by breaking the teaching content into small parts. According to Bruer<sup>24</sup> (1993), when teaching, we tend to categorize and analyze pieces and parts of knowledge rather than the whole thing. Mass media education is based on dividing knowledge and skills into de-contextualized pieces to be taught and tested separately.

Contrary to the traditional concept of teaching and learning, the new paradigm is the result of three decades of research. Learning is naturally not the same for all types of learners. There are different learning styles that a teacher must take into account when planning lessons. Providing rich learning environments with supportive and stimulating material is very fruitful to students (Khvilon & Patru, 2002). Vygotsky (1978)<sup>25</sup> noted that students learn best in collaboration with peers, teachers, parents and others. Besides social motivation, they need to be actively engaged in meaningful and interesting tasks. Active learning includes being given problem-solving activities, original writing productions, completion of scientific projects rather than just reporting things, and also dialoguing on issues. Learners should not be asked, as in the old curriculum, just to receive, recall and describe what is created by others (Khvilon & Patru, 2002).

### **2.1.4 A Change from Teaching to Learning**

Because technology has influenced change in all society features, the new world of economy is altering our prospects and demanding students to learn to perform accordingly. Students are urged to scrutinize a great deal of available information to be able to decide upon the new knowledge in an ever-changing technological society. They must learn continuously, collaborate with other learners to perform difficult tasks more efficiently. The move from teacher-centered teaching to the learner-centered type is a must to empower students to develop the new 21<sup>st</sup> century capabilities. The following table (by Sandholtz, Ringstaff, and Dwyer, 1997)<sup>26</sup> illustrates the shift of emphasis from teaching to learning.

---

<sup>24</sup> cited in Khvilon & Patru (2002) p.18) *Information And Communication Technologies In Teacher Education, A Planning Guide, UNESCO.*

<sup>25</sup> Cited in Khvilon & Patru (2002, p.19). *Information And Communication Technologies In Teacher Education, A Planning Guide, UNESCO*

<sup>26</sup> Cited in Khvilon & Patru (2002, p. 22). *Information And Communication Technologies In Teacher Education, A Planning Guide, UNESCO.*

The change of roles of the teacher and students is shown in Table 2.1 below. The teacher is no more the unique knowledge transmitter but a learning facilitator, knowledge guide, knowledge navigator and co-learner with the student.

	<b>Teacher-centered Learning Environments</b>	<b>Learner-centered Learning Environments</b>
<b>Classroom activity</b>	Teacher-centered, Didactic	Learner-centered, Interactive
<b>Teacher role</b>	Fact teller, Always expert	Collaborator, Sometimes learner
<b>Instructional emphasis</b>	Facts' memorization	Relationships, Inquiry and invention
<b>Concepts of knowledge</b>	accumulation of facts, Quantity	Transformation of facts
<b>Demonstration of success</b>	Norm referenced	Quality of understanding
<b>Assessment</b>	Multiple choice items	Criterion referenced, Portfolios and performances
<b>Technology use</b>	Drill and practice	Communication, access, collaboration, expression

**Table 2.1** Teacher-Centered and Learner-Centered Learning Environments (*adapted from Newby et al., 2000*)<sup>27</sup>

These new roles imply new knowledge and capacities from both the teacher and the learner. This latter should take in charge his/ her own learning as s/he needs to look for, find, synthesize and share knowledge with others. The table 2.2 below describes the changes of teacher's and learner's roles.

<b>Changes in Teacher's Role</b>	
<b>A shift from:</b>	<b>A shift to:</b>
<b>Knowledge transmitter, primary source of information, content expert, and source of all answers</b>	Learning facilitator, collaborator, coach, mentor, knowledge navigator, and co-learner
<b>Teacher controls and directs all aspects of learning</b>	Teacher gives students more options and responsibilities for their own learning
<b>Changes in Student's Role</b>	
<b>A shift from:</b>	<b>A shift to:</b>
<b>Passive recipient of information</b>	Active participant in the learning process
<b>Reproducing knowledge</b>	Producing and sharing knowledge, participating at times as expert
<b>Learning as a solitary activity</b>	Learning collaboratively with others

**Table 2.2** Changes in Student and Teacher's Roles in Learner-Centered Environments

(Table adapted from one developed by Newby et al., 2000)

<sup>27</sup> cited in Khvilon & Patru (2002, p. 23). *Information And Communication Technologies In Teacher Education, A Planning Guide*, UNESCO

The integration of technology enhances greatly this change towards a more student learning type of teaching and learning. This shift in the student and the teacher's roles has gone simultaneously with the incorporation of the communication technologies into the classroom practice. How far can these tools enhance the teaching and learning process?

### **2.1.5 Integrating ICT in Learning and Teaching**

Teachers are not to integrate the new technologies into their classrooms without questioning their use, benefits and efficiency. In fact, teachers are pressed into integrating technologies into the teaching and learning process by policy-makers. But to do so, teachers should be cautious when introducing technologies in education since effective teaching presents a priority in itself and technology is a tool for supporting and enhancing teaching not for replacing pedagogy (Loveless and Ellis, 2003).

Incorporating technological tools in English language teaching (ELT) requires a number of conditions to be met. As a matter of fact, the role of the decision-makers is vital to keep the teacher getting technological support. In school, a senior manager, the principal and the technical support responsible must give a priority to implement ICT in the teaching process while following the school policy of technology integration.

There are two types: schools that are using ICT as a tool to enhance teaching and learning practices and those using it to introduce new practices and try to transform their types of instruction. However this latter requires change and change does not happen alone. It needs completion of what is happening but something all new (Robertson, Webb & Fluck, 2007).

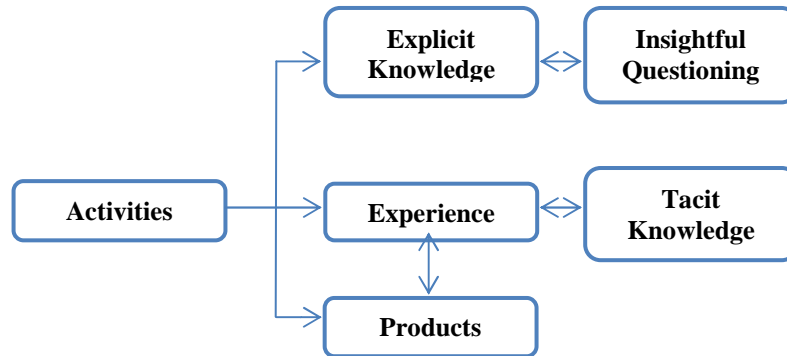
In order to use ICT in the learning process, we need to specify what type of learning can promote efficient use of technology. Teachers and pupils acquire experience through action. There is a joining relation between ICT and action learning. Students have an easier access to an already existing knowledge. They can learn from the rich experiences of others. The learner goes through scaffolding activity and mediating experiences to make meaningful questioning.

Reflective teaching is mainly based on reflective learning. Teachers should be aware of the power of observation in doing when giving action research projects; conferences, workshops and discussions. In reflecting upon their own teaching practices, teachers recognized the big importance of collaboration in integrating ICT in teaching. Robertson (2007) reported from (Leach & Moon, 1999; sacks 2003)<sup>28</sup> that working collaboratively aided people to ameliorate their

---

<sup>28</sup> cited in Robertson, Fluck and Webb (2007:98). *Seven steps to ICT Integration*, Acer press.

tacit and explicit knowledge in order to identify (and be melted into) the shared repertoire of practices. They play both roles of learners and teachers in the community by negotiating meaning and constructing a continuous knowledge. Here is below a representation of what has been explained illustrated in figure 2.2 below.



**Figure 2.2** Action Learning (Robertson et al, 2007:99)

This model is similar to the one brought by Vygotsky(1978)<sup>29</sup> in which there is a joint connection between action, learning, knowledge and social engagement to build both tacit and explicit or abstract knowledge to reach maturation.

Robertson, Fluck and Webb (2007) have made some reflections on school observations, action research projects, conferences and workshops; and they came out with some notions about action learning. One of them is illustrated in figure 2.2. which brings about the following plans:

- Practices involve activities.
- Activities result in experiences, products and the acquisition of explicit knowledge.
- Experiences can be expressed as tacit knowledge.
- Through insightful questioning, explicit and tacit knowledge can be: compared, related, reconciled and enriched.

It has been found that collaboration is crucial to guarantee that technology is implemented properly in teaching and learning and that teacher development is beneficial and possible thanks to the communities of practice which (Leach & Moon 1999, Sachs 2003)<sup>30</sup> define as groups of individuals cooperating to ameliorate their tacit and explicit knowledge in common practices which are based on the negotiation of meaning.

<sup>29</sup> cited in Robertson, Fluck and Webb (2007:98). *Seven steps to ICT Integration*, Acer press.

<sup>30</sup> cited in Robertson, Fluck and Webb (2007 p.99). *Seven steps to ICT Integration*, Acer press.

## **2.2 ICT Integration Difficulties and Challenges**

There are various factors discouraging teachers from adopting ICT in their teaching practice. Some are school related and others are linked to the teachers themselves.

### **2.2.1 School Related Challenges**

Concerned administrators sometimes inquire if the modern technologies really work inside the classroom. In fact, many researchers tackled that context, especially when computers were all anew in the teaching practice. The early types of research was not conducted properly since most of them considered the computer not as an instrument but as a method of teaching in itself. Therefore, pursuing assumptions on the effects of the computer or the internet may not be worth trying (Warschauer & Meskill, 2000).

The factors discouraging the adoption of modern technologies are related to school or the institution where the pedagogical work takes place. These barriers can be grouped in two types: those related to equipment availability or access and those linked to the technological material maintenance.

#### **2.2.1.1 Lack of Access to Resources**

The lack or limited access to technological equipment within schools constitutes a major obstacle towards the use of modern technologies. Multiple studies show various sides of the problem.

In a BECTA<sup>31</sup> survey, teachers did not have access to ICT resources as some of the respondents referred to the lack of physical availability while others referred to the poor quality of ICT equipment. Guha (2000)<sup>32</sup> indicated in a survey that the number of computers was insufficient for the teachers and it was those who used it most who complained about the lack of equipment which constitute a barrier to ICT use in creative way. The school strict schedules and administrative boundaries as well as the type of restrictions the school has on the use of equipment are also important obstacles to the use of technology in the classrooms. According to Mumtaz (2000)<sup>33</sup> the evidence of a very good manipulation of ICT use is found in schools with high quality of technological resources. He argues that the lack of good computers and software will surely limit what teachers can do in the classroom.

---

<sup>31</sup> B.E.C.T.A .: British Educational Communications and Technology Agency

<sup>32</sup> Cited in BECTA (2004:12) *A review of the research literature on barriers to the uptake of ICT by teachers.*

<sup>33</sup> Cited in BECTA (2004 :11) *A review of the research literature on barriers to the uptake of ICT by teachers.*

### **2.2.1.2 Technical Problems**

The reparation or fixing of damaged or broken equipment ensures the durability of material and its efficiency in use. But there is a constant fear on the part of the teacher that equipment may break down in the middle of a lesson. His/her lack of training can result in a computer damage which can cause a lack of confidence in the equipment as reported by Bradley & Russell (1997)<sup>34</sup>. Cuban et al (2001)<sup>35</sup> explained the same problem when a technical problem occurs weekly or daily it would have a negative impact on the teachers' rate in using ICT. There were complaints from teachers like "problems with getting it to work, glitches which are 'unexplained', not always reliable", "computers that freeze in the middle of a lesson", "technology that doesn't work!". The breakdown of an equipment of course would need technicians support. As Cuban (1999)<sup>36</sup> said, schools that cannot afford technicians, their technical equipment would remain out of use for a long time. A good example of this was given about a burnt out projector bulb took three weeks to be replaced.

### **2.2.1.3 Investment of Money**

To incorporate technology tools in educational institutions requires large amounts of money. Warschauer and Meskill (2000) assert that the result of technologies implementation in education pays off through a long period of time. Meanwhile, there is the cost, reparation, installation of the technological equipment (either in classrooms or in labs) and the software. In addition to that, there are expenses related to teachers and staff training on a regular basis. These spending constitute barriers that do not facilitate technology incorporation.

## **2.2.2 Teacher Related Challenges**

School inconvenient conditions, equipment availability and access are not the only obstacles, psychological readiness and skills play a paramount role in technology integration.

### **2.2.2.1 Teachers' Attitudes toward ICT Integration**

Attitudes are among the most influencing factors, beside technology equipment and training, in the adoption or rejection of modern technologies in schools. Due to the influence of technology in teaching English language, teachers are required to update their pedagogical

---

<sup>34</sup> Cited in BECTA (ibid :3) ) *A review of the research literature on barriers to the uptake of ICT by teachers.*

<sup>35</sup> Cited in Becta (ibid:16)

<sup>36</sup> Cited in Becta (ibid:16)

tools to support the classroom practice. However, not all language teachers are tempted by introducing ICT in their classroom. That is why many researchers have been searching to explain teachers' attitudes. They found out that several factors can influence teachers' attitudes like age, gender, teaching experience or experience using technology, confidence and competence. These factors can either enhance or hinder the adoption of technology.

A group of researchers found out that successful implementation of technology in education & school programmes rely strongly on the teachers' positive attitudes. Those who considering ICT negatively are less likely to integrate it in their teaching procedures as a result they do not meet their students' needs (Hew & Brush. 2007, Keengwe & Onchwari. 2008). In the same context, there is evidence that attitudes towards technology influence its acceptance and integration in teaching (Huang & Liaw, 2005). Negative attitudes, however, would lead to technology rejection. In a survey conducted in Europe, revealed that fifth (5<sup>th</sup>) of Europe teachers believed that ICT use in teaching wasn't advantageous to their students (Korte & Husing, 2007). Teachers generally have positive attitudes towards ICT. During Welsh project measuring the use of ICT in education, 289 secondary school teachers responded to an attitude questionnaire and the results of analysis showed a significant difference between teachers on the basis of their sex: men's attitudes were more positive than women's (Kennewell et al.2001).

#### **2.2.2.1.1 Old Teachers versus New Teachers Attitudes**

Many researchers considered the age factor as crucial parameter in determining teachers' attitudes towards technology integration. They have revealed, surprisingly, some controversial results. In the USA, according the National Center for Education Statistics (NCES) (2000:130), teachers who are less experienced integrate computers in their teaching more than the experienced ones. Those with three years of experience spent like 48% of their time using computers, those between 4 and 9 years spent 45% and those between 10 to 19 years of experience spent 47% and finally those of more than 20 years, spent 33% of their time. The report refers to the disparity to the fact that young and fresh teachers have more experience in using technology than the old generation teachers.

However, Lau & Sim, (2008) surveyed 250 secondary school teachers in Malaysia and found out that older teachers generally use computer technology in their classrooms more than the younger ones. May be this was due to the old teachers' rich experience and good classroom management without forgetting the computer competence factor that eases the integration of ICT.



Other researchers like Russell, et al. (2003) reported in their research that highly skilled new teachers more than the older ones unexpectedly did not adopt ICT in their teaching because their focus was more on how to use ICT instead of how to integrate it in the lessons. This was also due to the fact they are busy during their first year of teaching getting accustomed to school curriculum and classroom management.

#### **2.2.2.1.2 Teaching Experience**

Teaching experience looks like it would enable teachers to adopt technologies in classrooms. But in qualitative survey carried out by Granger et al.(2002) about factors influencing teachers' successful ICT implementation in Canada had a different finding. After questioning 60 informants from 12 schools, they found out no relationship between the teaching experience and the experience in the use of ICT, and that an appropriate ICT implementation is so complex that there is no clear predictor or criterion.

Yet, in a different research conducted by (Drent & Meelissen 2008)<sup>37</sup> about factors which influence the innovative use of ICT in Netherlands educators, showed that students-centered approach, positive attitude towards computer skills, and the teaching experience have a direct positive influence on the innovative ICT use in classrooms.

#### **2.2.2.1.3 Lack of ICT Experience**

Another example was brought by Preston reporting that teachers of an old age, who didn't have any computer education, when in college, felt that they had not an adequate training which enables them to deal with technical problems when they arise and didn't have any basic knowledge of how technology works (Preston et al 2000)<sup>38</sup>.

Another view was stated by Rozell & Gardner (1999) in their survey. They concluded that the more experienced are teachers with computers, the more positive attitudes they have towards technology. In another survey of about 3000 teachers, researchers confirmed that experience in using ICT, helps to better integrate it in teaching (Russell, Bebell, O'Dwyer and Tao, 2007).

#### **2.2.2.1.4 Lack of Teachers ICT Competence and Confidence**

Teachers who do not know how to use ICT may have a lack of self-confidence. The majority of them feel anxious about using ICT in front of their pupils especially if those are technophile<sup>39</sup>.

---

<sup>37</sup> cited in Kennewell, S. (2004). *Meeting the Standards in Using ICT for Secondary Teaching*, RoutledgeFalmer.

<sup>38</sup> Cited in BECTA (2004:13) *A review of the research literature on barriers to the uptake of ICT by teachers*.

<sup>39</sup>Technophile: a person who is enthusiastic about new technology.

Similarly, Timberlake (1995) found that there were teachers who were unwilling to show their pupils that they didn't know how to use technological equipment, and of course those teachers felt more anxious using computers in their teaching. In another survey for Becta, Guha (2002) stated that students are putting pressure on their teachers to use ICT as they experience a daily interaction with a lot of technological equipment. In fact the respondent to the Becta survey, who were identified with a lack of confidence were afraid of public humiliation in front of pupils and parents. Jones (2004) said that teachers' competence is directly linked to their confidence which is by itself related to their perceptions of their capacity to use computers in the classroom, particularly if their students are perceived as technology-competent.

Among the described elements, confidence and competence seem to exert a major impact on teachers' ICT integration. They are interrelated. Confidence depends mainly on competence. The lack of one affects the other. Although teachers' negative attitudes are mainly due to the lack of competence, technological training can have a counter-effect in technology adoption.

A study on teachers' attitudes revealed that there were a number of factors which have direct effect on their attitudes towards technology adoption: Teachers' competence was the first. They worry about their own use of technology in the classroom; they doubt about the quality of their teaching when using computers. In fact, they are neither confident about their performance nor sure that their pupils would learn better. Competence and confidence affect the teachers' enjoyment in using technological instruments and the impact they would have on their teaching (Kennewell & Parkinson) hence Teachers' competence is, in fact, directly linked to their level of confidence in ICT.

#### **2.2.2.1.5 Lack of Time for Training**

Time is very precious for teachers. It is commonly known that they never have sufficient time for lesson planning, exam corrections and loads of pedagogical work. It is stated in BECTA(2004) survey that expecting teachers to train themselves by themselves using ICTs slowed the process of training since the programme was voluntary and in the teachers' own free time. This is not always possible as Snoeyink and Ertmer (2001)<sup>40</sup> reported that the lack of time for training teachers to use ICT presented a significant barrier and proposed that one way to solve this would be to provide training during school hours.

In Australia, Wild (1996) as cited in Becta (2004:10), urged teachers to take advantage of the computer use in their professional life and make it serve of the users not be somehow its slave.

---

<sup>40</sup> Cited in BECTA (2004:9), *A review of the research literature on barriers to the uptake of ICT by teachers.*

Teachers in fact needed to know how to use computers technology first. Wild (ibid) added that equipping teachers with ICT skills didn't guarantee they will use it to improve their teaching. In another study in Scotland, Simpson et al (1999) as quoted in Becta(2004:10) found out that trainee teachers knew that their tutors didn't know how to deal and manage ICT.

#### **2.2.2.1.6 Lack of ICT skills**

According to Becta (2004), many surveys suggest that effective ICT training is crucial for teachers to integrate it effectively in their teaching. According to the study of Somekh & Davis (2005), the ICT tool skills have to be acquired and mastered. Inappropriate training would lead to inadequate use of technology in and out of the classroom. Sometimes it would lead to no use of technology as it has been reported by Ebraik (2011) in a qualitative study concerning Libyan teachers' lack of ICT training. All teachers claimed that they had not attended any courses on how to use technology in teaching EFL students in Sebha Secondary School in Libya. The acquisition must engender full understanding of the technology potential in education.

As each tool is used in connection with other tools and materials, there must be a link, for example, between Microsoft word processor or Microsoft Powerpoint software and the video projection. Lack of ICT skills is the one of the main causes behind teacher's refusal, demotivation and lack of confidence to use technology. It is not due to professional or pedagogical consideration (Balanskat et al., 2006). In response to that, Snoeyink & Ertmer (ibid) suggested that training should first deal with the basic operations of technology and software application. Once the basic skills are acquired, language teachers should move on to pedagogical training.

#### **2.2.2.1.7 Lack of Pedagogical ICT Model**

In addition to the acquisition of the technology basic skills, language teachers need to be trained to use technology for pedagogical purposes. The computer and other technology equipment are tools just like books and dictionaries. They do not guarantee a good educational outcome by themselves. Researchers in the field of teaching and learning (e.g. Sandholtz, et al., 1997, Warschauer,1999)<sup>41</sup> demonstrated that purchasing technological instruments and putting them into labs and classrooms does not transform the pedagogical teaching methods used to bring about the needed change unless teachers managed the teaching methods in the lights of the new technology tools. For this reason, it is preferable that teachers received the technology instruction in the pre-service training.

---

<sup>41</sup> Cited in Warschauer, M., & Meskill C.,(2000), *Technology and Second Language Teaching*.

### **2.2.2.1.8 Lack of Time for Lesson Planning**

Lack of time is one of the biggest problems in the teaching profession. Learning a new skill in any profession takes time, but teachers can't afford time. According to Fabry & Higgs (1997)<sup>42</sup> teachers have little time left after spending all day teaching and with other commitments such as coordinating with parents and attending meetings there is no time left for preparing lessons based on technology or sharing experiences with colleagues related to training programmes.

Cuban et al (2001) as cited in Becta (2004:15) reported in a survey of teachers at two American High Schools that they needed hours to prepare multi-media materials for lessons and undertake training at the same time. Teachers in these schools complained of working longer hours to make ICT use successful, as a result they left exhausted and ended up leaving the profession or moving to other technical jobs with more free time. This, of course undermined the integration of technological materials in teaching.

Over the long term, integration of ICT in teaching pays off and teachers will more likely save time. However, the teacher has to go through the complexity of change in teaching schedules and planning lessons according to the technology based objectives (Warschauer & Meskill, 2000). This work demands investing a great deal of time on learning to use the software programmes and seeking the best ways to incorporate them into classroom teaching.

### **2.2.2.1.9 Teachers "Resisting" Change**

Sometimes it is not only the lack of training and time that prevent teachers from integrating ICT for there is an inherited resistance to change in the teaching profession. Albangh (1997) & Veen (1993, as cited in Becta (2004:17), reported that teachers are generally suspicious about new claims. The integration of new ideas is not expected without proof of their effectiveness. This is the same case when adopting technology. Teachers resist the introduction of technology in teaching because they need more time to gain experience with computers. Some teachers as in the survey of Snoeyink and Ertmer (ibid) totally rejected ICT use and wished to remain comfortable in "their secure zone" with their old teaching methods.

The negative attitude is major cause of resisting change. It is generally the result of a lack of training and confidence in using technology. Ertmer (1999) and Mumtaz (2000) as cited in Becta(2004), distinguished with two types of barriers in using ICT, the first one is observable and

---

<sup>42</sup> Cited in BECTA(2004:15), *A review of the research literature on barriers to the uptake of ICT by teachers.*

related to the teachers lack of ICT access or training whereas the second barrier has to do with teachers major changes in their daily lives and their beliefs about effective ICT practice.

Contrastingly, Dawes (2000) as cited in Becta (2004:17), criticized the belief of teachers as being change-resistant in their professional practices. She claimed that the teacher's attitudes give us an idea about what type of equipment the teacher has access to and what type of training he has had and what sort of community he belongs to rather than his willingness to use technology.

The benefit of using ICT generates either a positive or negative attitude on the part of teachers. Snoeyink & Ertmer (ibid) explained the importance of achievement that technology can bring to the teachers and their pupils. If they perceive no apparent ICT benefit, they will reject it. Thus, according to Cox et al (1999) as cited in Becta (2004:14) we need to convince the teacher of the value and usefulness of technology rather than tell them to watch others using it. Technology is only useful when it is applied into a context. Without understanding how it can be integrated in lesson planning teachers may not grasp its usefulness at all. When we comprehend the degree to which these difficulties and barriers distress teachers in schools, we could be able to decide upon convenient solutions to adopt technology (BECTA, 2004).

#### **2.2.2.1.10 Motivating and Demotivating Factors**

The teachers who had computers at home are more likely than others to have positive attitudes towards ICT. Having a computer at home, according to Kennewell (2004), enabled the teachers in the secondary school to be more ICT-capable in their subjects. When interviewed, teachers possessing computers claimed to have been self-taught and did not need any courses to learn ICT skills. What is interesting in this survey is that those ICT-capable teachers did not care whether their pupils knew more of technology use than they did, as long as they considered themselves as life-long learners. And being partners with their pupils in learning was ideal. The Welsh teachers, according to Kennewell (2005), also showed their readiness to collaborate with their colleagues in using technological tools in classrooms.

According to Yildirim(2007)<sup>43</sup>, factors like over-crowded classes, insufficient teachers' training, inadequate technical and pedagogical support, rigid school syllabus, inadequate motivation, lack of strong leadership and inadequate cooperation between teachers are demotivating factors that hinder the incorporation of technologies in classrooms.

---

<sup>43</sup> cited in (Buabeng-Andoh C., 2012 :146) *Factors Influencing Teachers' Adoption and Integration of Information and Communication Technology into Teaching: A review of the Literature*, Pentecost University.

For Slaouti and Barton (2007)<sup>44</sup> it was also the lack of ICT access, time pressures, lack of mentors and training. In another European study, teachers from Greece, Italy, Spain, Portugal and Netherlands were surveyed and it was reported that the lack of time of time to learn technology skills, old equipment, large classes, the number of computers available, lack of both technical and pedagogical support and the lack of collaboration among teachers affected negatively their confidence and competence to integrate ICT (Peralta and Costa, 2007)<sup>45</sup>.

### **2.3 Teachers' ICT Training**

In many developing countries, however, most teachers have minimal or no ICT skills themselves and therefore cannot develop these in their learners. Two of the most important supports for ICT integration into teaching and learning are effective Initial Teacher Education (ITE) and Continuing Professional Development (CPD) better known as in-service training. Both types of training have the greatest impact on the beliefs and practice of teachers (Venezky, 2004).

Training language teachers to use technology for pedagogical purposes is part of teachers' development throughout their teaching careers.

“In most schools, you will find an ICT department with a Head and a team of specialist teachers. These colleagues may have a role of helping teachers to use ICT in other subjects as well as teaching their own courses. There may alternatively be a separate ICT coordinator for the whole school, with a leadership role in promoting the development of ICT skills, resources and effective use in the curriculum.”

(Kennewell, S. 2004:13)

Teachers would not be capable of working with technological tools if they are not trained to do so. Kennewell (2004) thinks that although a teacher is teaching a subject other than ICT, getting a general ICT background, skills and aptitudes will be very helpful to him. In addition, Kennewell (ibid) stated that a better awareness of computer software applications and its effects should be and is expected to be higher in teachers than in their pupils. As a matter of fact, The National ICT Curriculum guidelines of Wales and Northern Ireland impose the same ICT training and skills requirements on teachers initiating the teaching profession.

---

<sup>44</sup> cited in (Buabeng-Andoh C., 2012 :146) *Factors Influencing Teachers' Adoption and Integration of Information and Communication Technology into Teaching: A review of the Literature*, Pentecost University.

<sup>45</sup> cited in (Buabeng-Andoh, 2012:147) *Factors Influencing Teachers' Adoption and Integration of Information and Communication Technology into Teaching: A review of the Literature*, Pentecost University.

### 2.3.1 Technology Standards for Language Teachers

In order to gain experience using technology, teachers must achieve some technology standards. According to educationists, the rationale behind the teachers' training is to use ICT in schools and change pedagogy. It is not about ICT itself but about the improvement of education through Technology adoption and promotion. The Society for Information Technology and Teacher Education (SITE) has put forward basics for an efficient Teacher development in 2002:

1-Technology should be infused through all teachers education period.

2-Technology should be introduced in context: training teachers computer-based skills like word processor, Microsoft Excel or some basic functions is not efficient. They should know how to use ICT tools so as to accomplish educational objectives in courses. Teachers have to follow their instructor innovative models in technology use to further develop them in more creative ways.

3- ICT serves both traditional styles like lectures and modern ones through mediated learning environments. It also enhances learning and can transfer it, too (SITE, 2002) as reported by Kennewell (2004).

### 2.3.2 Pre-service Teacher Training

Almost all researchers agreed upon the necessity of ICT training for improving language teachers' development. Before initiating the teaching profession, the teachers should know that there are some standards required to be qualified as a teacher. Kennewell(2004) claims that in England, for example, they require a teacher to pass the ICT components of Initial Teacher Training (ITT) courses.

To integrate ICT in learning classes inside secondary schools, teachers must be trained to do so before starting the teaching profession. Among the well-known models of integrating ICT in teachers' pre-service training is the Welliver Instructional Model.

In a recent study, Taylor (2004)<sup>46</sup> observed the teachers' growing knowledge of ICT through training. New teachers were expected to integrate ICT in their teaching. It was a three year action research study, with Primary and Secondary School teachers in a one year graduate training programme with an aim to find how to integrate ICT in Methodology classes relating to Studies of Society and Environment (SSE), English, Science, Mathematics and Technology.

The following table (2.3) *Welliver's Instructional Transformation Model (1990)*, shows the five (5) stages of ICT training in the pre-service teacher training. Welliver's Instructional

---

<sup>46</sup> cited in Wright & Macrow(2006) *Integrating ICT in Pre-service Teacher Education Reframing teacher education*, University of Warwick, 6-9 September,p1.

Transformation Model (1990) has teachers progressing through five hierarchical states in order to integrate ICT effectively. It comprises five states. Welliver’s Instructional Transformation Model (1990) can be used as a starting ground for ICT integration in education course to make the student teachers go rather quickly through stages 4 & 5 of Welliver’s Model.

<b>1. Familiarisation</b>	Teachers become aware of technology and its potential uses.
<b>2. Utilization</b>	Teachers use technology, but minor problems will cause teachers to discontinue its use.
<b>3. Integration</b>	Technology becomes essential for the educational process and teachers are constantly thinking of ways to use technology in their classrooms
<b>4. Reorientation</b>	Teachers begin to re-think the educational goals of the classroom with the use of technology
<b>5. Revolution</b>	The evolving classroom becomes completely integrated with technology in all subject areas. Technology becomes an invisible tool that is seamlessly woven into the teaching and learning process.

**Table 2.3** Welliver’s Instructional Transformation Model (1990)

This model illustrates integration in a linear way from familiarization with technology to its utilization. Then, comes the manipulation stages and from both reorientation and revolution as considered innovative technology use, according to Wright and Macrow(2006) who looked at integrating technology from a different angle. Overcoming technology integration difficulties can be solved through leadership, training teachers and their commitment to use it whereas Shelly(2004:6.10-6.11)<sup>47</sup> insists that good ICT training would enable teachers to:

- Link between active learning and teaching.
- Develop leadership skills.
- Design curriculum activities with technology integrated.
- Use authentic material in the classroom.
- Motivate students more.
- Become more reflective.

Wright and Macrow criticized Welliver’s Model as bringing ICT integration only a linear process while effective integration goes through some complex interactions between the users and

---

<sup>47</sup> cited in Wright P. and Macrow V. A.,(2006). *Integrating ICT in Pre-Service Teacher Education Reframing Teacher Education* , Paper presented at the British Educational Research Association annual Conference, University of Warwick



technology that are not linear. He assumes that modern teaching sets out advanced teaching approaches and assessment tasks based on technology requiring such complex instructions. Thus, this will incite trainee teachers to skip step one (1) to three (3) of Welliver's mode and emphasis more on steps four (4) and five (5).

Theoretically, the trainee teachers end up their pre-service training period with a set of technology skills and aptitudes to apply in their profession. The National Educational Technology Standards for Teachers in the United States of America (USA) carries basics describing the pre-service teachers' knowledge about technology upon the closure of their preparation programme (Patru et al., 2002). Here are some important indicators of these technological aptitudes.

All classroom teachers should be prepared to meet the following standards and performance indicators: Teachers should be able to

- demonstrate a sound understanding of technology operations and concepts.
- plan and design effective learning environments and experiences supported by technology.
- apply technology-enhanced instructional strategies to support learners' needs.
- identify and locate technology resources and evaluate them for accuracy and suitability.
- use technology to support learner-centered strategies.
- apply technology to develop students' higher order skills and creativity.
- apply technology in assessing student learning of subject matter using a variety of techniques.
- use technology resources to engage in ongoing professional development.
- teach legal and ethical practice related to technology.

### **2.3.3 In-Service Teacher Training**

Contrary to the pre-service training, the in-service training is generally provided to teachers during the period of their work to renew their teaching methods and approaches or tools. Venezky (2004) reports that the integration of ICT in teaching English to EFL students requires from teachers to upgrade their know-how to get the needed ICT competency so as to use it efficiently and creatively in their classrooms.

The required training should enable teachers to use the ICT knowledge to serve their pedagogical needs. They ought to:

- Identify the individual learning problems of learners and their needs;
- Make a careful and considered choice concerning the use of the media;

- Check the truthfulness of information content before presenting it in class;
- Be capable of conducting effective research using a computer to get useful resources.
- Make wise and critical choices of information found.

Because using ICT is necessary but is definitely not everything a language teacher needs in his class teaching, Guide and Young (2001)<sup>48</sup> commented that renewed interest in the apprenticeship system in part recognizes the value of this “ on job training”. This directs us to reflect on the knowledge acquisition for professional and social purposes. The apprenticeship concept changes for it puts emphasis on group interactions between “thought, context and practice”. This theory can be used to train teachers while exercising their profession.

### **2.3.3.1 The Apprenticeship Approach**

As an objective of the professional learning, the apprenticeship approach guides teachers to reflect on acquired knowledge essential to integrate ICT into the daily practices of teaching and learning (Robertson et al, 2007). As a matter of fact, they need to create a community of practice, and develop networks where the role of tutors and mentor should be clarified. In contrast to the apprenticeship relationship, roles here should be switched according to the task in hand. According to the same source, the teacher is the novice and the expert; the expert role changes constantly following the work context and the level of his/ her prior knowledge.

In this approach, teacher training is based completely on team work and collaboration and goes through three steps: learning with other members of the team, doing work and acting or practicing what is being learned as it is Adapted from Robertson’s<sup>49</sup> work below:

Step 1: LEARNING: in collaboration with others teachers, the teacher will:

- Clarify the objectives of the learning about ICT professional practices.
- Create/identify opportunity to engage with learning group, sources ...
- Learn about ICT: concepts, intended uses, activities, experiences, case studies ...
- Action plan: resources, timelines, support, experiences
- Plan trial use

Step 2: DOING: in collaboration with others teachers, the teacher will:

- Observe
- Gain insights into the activity of technology, experience, knowledge, products ...

---

<sup>48</sup> cited in Robertson, Fluck and Webb (2007, p.133) Seven steps to ICT Integration, Acer press.

<sup>49</sup> Adapted from Table 9.1, *Professional Learning Cycle by Robertson*, by Fluck and Webb (2007).

- Make arrangements
- Carry out plan

Step 3: STUDYING :

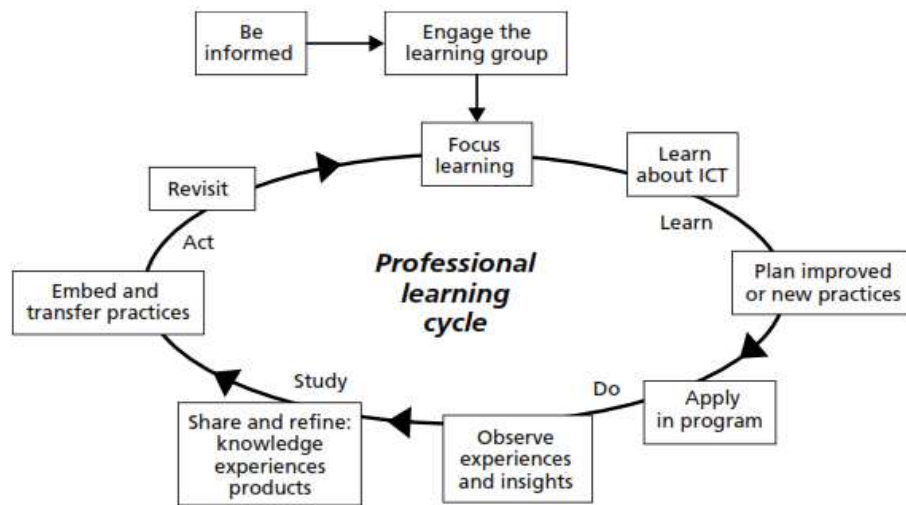
- Review his/her plan

Step 4: Action: in collaboration with others the teachers should act on practices:

- Refine and enhance existing practices
- Create and develop new practices
- Integrate (embed) new or improved
- Extend use of effective practices and transfer to new contexts

### 2.3.3.2 The Action Learning Approach

During their teaching career teachers can receive in-service training to upgrade their teaching skills and tools: it's learning by doing. According to Robertson, Fluck and Webb (2007) Action learning i.e. the practice which makes the teacher uses his knowledge and applies it to teach successfully. This type of training should involve four actions: Learn, do, study and act as represented in figure 2.3 below:



**Figure 2.3** The Professional Learning Cycle (Robertson, Fluck and Webb (2007)

The training illustrated in the figure should be based on action learning or learning through doing and completed through steps that take cyclic form in a progress. Each step has a different role, responsibility and task according to the intentions and capacity of the trainee group. Collaboration is of a paramount importance between members of the same group and allows to meet each learner needs. The training ought to tackle pedagogical matters. It is not intended to acquire technology skills but also knowledge.

In fact the previous figure comprises various items to consider in training teachers. This cyclic training model contains steps that might otherwise be skipped. However, these steps are worth mentioning because of their relation with the teacher's personal initiative. In most of the ICT workshops, training usually includes abstract concepts which unless supported by action and experiences, they will be quickly forgotten (Robertson, Fluck and Webb, 2007).

The social interaction and the affection existing within the group help them to remain stronger and more committed. Training should be a continuous progress, each time; there are new practices and acquisitions which make the previous ones more consolidated and effective (Robertson, Fluck and Webb, 2007). This training cycle illustrates what teachers and users of technology should accomplish as part of their pedagogical requirements so that they will be able to implement ICT in teaching practices more professionally.

### **2.3.3.3 The Tentative Theory**

When observing practices in school, (Robertson et al.2007) consider a new "tentative theory" that has potential to guarantee teacher's development, management and ICT use in classrooms. He advocates, among other uses, four enhancing factors for ICT easy use:

- Rational
- Choice of available and reliable ICT tools.
- ICT knowledge
- Effectiveness-worth time-cost- effort and investment.

Successful integration of ICT based on scaffolding depends mostly on the administrative role of schools or institution, class environment and the activities. To ensure a professional ICT development, we need to focus on the teaching practices. Technological training should be an ongoing cycle in life, work and school. And technology integration should be a community practice, not an isolated act in some school by some teacher. Robertson, Fluck and Webb (2007) summarized the content of their tentative theory of technology integration and proposed a model of five stages for training teachers how to incorporate technology in the teaching practice. Table(2.4), *Adoption Stages of ICT*, on page 64, presents the adoption stages framed on the basis of the new tentative theory of ICT integration. This theory illustrates five (5) steps process upon which a tentative integration of ICT in teaching is carried out.

First, in the Entry Stage teachers get acquainted with the basic elements of technology tools such as the computers or laptops. Then, technology is immediately used, without changing the method of instruction. Next, in the adaptation step, technology is integrated in traditional teaching

practice. Teachers emphasize on student motivation and productive learning. They generally use word processors, spreadsheets and graphic tools. The fourth step focuses on the type of activity accompanying technology like inter-subjects exchanges, collaborative and project-based type of class work. Technology should be introduced, among other tools, just when needed.

Stages of Adoption	Characteristics
<b>Entry</b>	Learn the basics of using the new technology.
<b>Adoption</b>	Use new technology to support traditional instruction.
<b>Adaptation</b>	Integrate new technology into traditional classroom practice. Here, they often focus on increased student productivity and engagement by using word processors, spreadsheets and graphics tools.
<b>Appropriation</b>	Focus on cooperative, project-based and interdisciplinary work-incorporating the technology as needed and as one of many tools.
<b>Invention</b>	Discover new uses for technology tools, for example, developing macros for teaching algebra or designing projects that combine multiple technologies.

**Table 2.4** Adoption Stages of ICT<sup>50</sup>

(ACOT 2000 report, and works of Sandholts, Ringstaff & Dwyer 1997.)

In the last step, and when getting used to ICT, teachers would develop advanced technology uses like creating spreadsheet functions for algebra or designing classroom projects that require the integration of various tools like working with software combined with the presentation tools or videos. To conclude, this method of ICT integration for in-service training is based on teachers' reflection and the way they adapt technology to pedagogy.

## 2.4 ICT Integration in EFL Teaching

For Rogers (2003) ICT integration is the individual's decision to make an innovation as the best solution available. He argues that it is a process that is initiated with a hearing about change to the last step of the process which is the final adoption.

According to Buabeng-Andoh (2012), there are a number of definitions of ICT integration in the process of teaching and learning. It is described as the adoption that follows a decision to be considered by some individuals each time they are willing to innovate (Buabeng-Andoh, 2012)<sup>51</sup>.

---

50 For more information on this particular framework, see p.16 of the ACOT 2000 report [<http://www.apple.com/education/k12/leadership/acot/pdf/10yr.pdf>] and also the work of Sandholts, Ringstaff and Dwyer 1997.

51 Cited in (Rangaswamy and Gupta, 2000)

### **2.4.1. Evolution of Technology in EFL Teaching**

Technology was introduced to teach foreign languages for more than sixty (60) years ago, starting with the United States (US) military labs for language learning during the World War Two. From then and on there was a quick spread of technology in teaching foreign languages.

ICT integration started thirty years ago. The objective of learning a foreign language, at that time, was to get the student accumulate a wide range of vocabulary and grammar manipulation that enable them to read with ease in the target language. Speaking the language was neglected. In the traditional classroom students responded to what is being given to them by the teacher. The foreign language is used only in the classroom. Language learning was barely noticeable among students (Tomei, 2003). The period between 1950 to 1980 was described as the “Age of Methods”. Language labs became equipped with tape recorder and were fixed into high schools as part of the audio-lingual method of language teaching. Language was taught by imitating the pronunciation of the native speakers on the recordings. This method was popular between the 1960’s and 1970’s (Rogers, 2001)<sup>52</sup>.

In the 1980’s, video tapes were introduced in language teaching programmes, like Capritz<sup>53</sup>. Students learned how to speak French by watching a series of videos describing the daily life of a French teenager in Paris. The 1980’s saw also the introduction of the computer into foreign language learning. The use of the new technologies, especially computer, has evolved from teaching vocabulary patterns to the language lab systems. “Smart Classrooms” where the computer is combined with video tapes, video discs networks to provide language instruction effectively (Earp, 2001)<sup>54</sup>.

### **2.4.2 Modern Integration of ICT**

Integrating technology in teaching and learning process is not a new phenomenon. Wang and Woo (2007)<sup>55</sup> argue that it goes back to the time of the radio and television while Earle (2002), according to them, determines integration as when one crucial element becomes part of a system to a whole and achieve completeness.

---

<sup>52</sup> cited in Tomei L.A. and Edd (2003:183). *Challenges of Teaching With Technology Across the Curriculum: Issues and Solutions*.

<sup>53</sup> one of the most well-known series of learning French language.

<sup>54</sup> cited in Tomei L.A. and Edd (2003:183). *Challenges of Technology Across the Curriculum: Issues and Solutions*.

<sup>55</sup> Cited in Bhasin B. (2012), *Integration of Information and Communication Technologies in Enhancing Teaching and Learning*, Contemporary Educational Technology.

Tomei (2003) stated that the use of technologies in foreign language classroom has developed over the years. Technology enhances basic instruction reinforces the traditional teaching methods and makes language programmes richer. Tomei (ibid) looked into two of the mostly integrated tools used in EFL teaching: CD-ROM software and internet websites. They both provide reinforcement in learning by reviewing and reexamining the language points deeper so that students could acquire the necessary understanding in real life situations. Since learning a foreign language is cumulative in nature, technology provides necessary reinforcement, variety and excitement which assist learners in memorizing concepts and skills. Technology also enriches learning making it more intense and retained longer than what is proposed in textbooks.

For Tomei (ibid), these two technology tools (CD-ROM and internet) also boost foreign language learning through culture. Teaching through technologies like the videos offers the understanding of other aspects of the country's foreign language like music, clothing, customs and traditions and ways of life, culture of the native speakers, history and geography of the land etc. (Tomei, 2003).

#### **2.4.2.1 Internet Use in Foreign Language Teaching**

Teachers can inspire their students by doing activities related to the World Wide Web. The foreign language would come alive with activities such as planning a trip abroad or describing pictures of world famous moments (Tomei, 2003).

The teacher desiring to reinforce his classroom teaching introduces his students to some of the educational websites that improve their foreign language learning abilities. The sites considered among the most recommended are those proposing remedial work and an opportunity to study on several levels at the same time. A good enhancement of interest in foreign language teaching consists in revealing the culture of the countries of the target language. Pupils would consult foreign language newspapers, magazines, movies, radio, television and know the news, events, or get to join native speaking pal clubs.

The websites which teachers invite pupils to consult must be appropriate to their students' age and level and should incite their higher-order thinking. The writing should be clear with well-chosen images and relevant topic. The websites have to be easy to navigate through the different links. Some of the good websites provided for EFL teaching have the following common features:

- The websites offer all levels of instruction.
- They offer links to other related sites for the foreign language studied.
- They provide an immersion approach with image and audio (audio- visual)
- They reinforce and enhance activities that support the textbook content.

## 2.5 Models of ICT Integration

A model is defined as a pattern, plan, representation or description with a purpose to picture the components and functioning of an object, system or a concept (Tomei 2008). After being trained, teachers would be able to incorporate technology in the classrooms with their students. If it is wisely used, technology implementation can ameliorate teaching (Kulik, 2002, Waxman, Connell and Gray, 2002)<sup>56</sup>. However, basic manipulation of computers or other tools is not enough for language teachers to deliver effective lesson content. They need a pedagogical vision or a model upon which they can build their own type of technology integration.

In the context of education, we are going to refer to the definition bought up by Gerald Grow (1996)<sup>57</sup> that sees a model as a cognition of learning which begins with an understanding to foresee what prior knowledge or pre-requisite is necessary and which techniques are efficient in teaching. Next, learning happens when new information is acquired as the previously existing knowledge. The rest of the job, according to Grow (1996), is done by the memory which recalls the stored information needed as a response. Two relevant and complementary models of technology integration will be explained in the next sections. They will illustrate features and conditions of ICT integration.

### 2.5.1 -The Constructivist Model

This model relies on constructivist theory which focuses on active learning. This is another model of technology integration proposed by Hooper & Rieber (1995)<sup>58</sup> in which there is a clear difference between constructivist and behaviourist theories.

This model focuses on the teachers' instruction in the traditional integration perspective while in modern constructivist theory; the *integration phase* is placed right in the middle of the model and is followed by two other phases: *reorientation* and *evolution*. The model is based on five (5) phases with *integration phase* in the middle as a "break-through phase" as called by

---

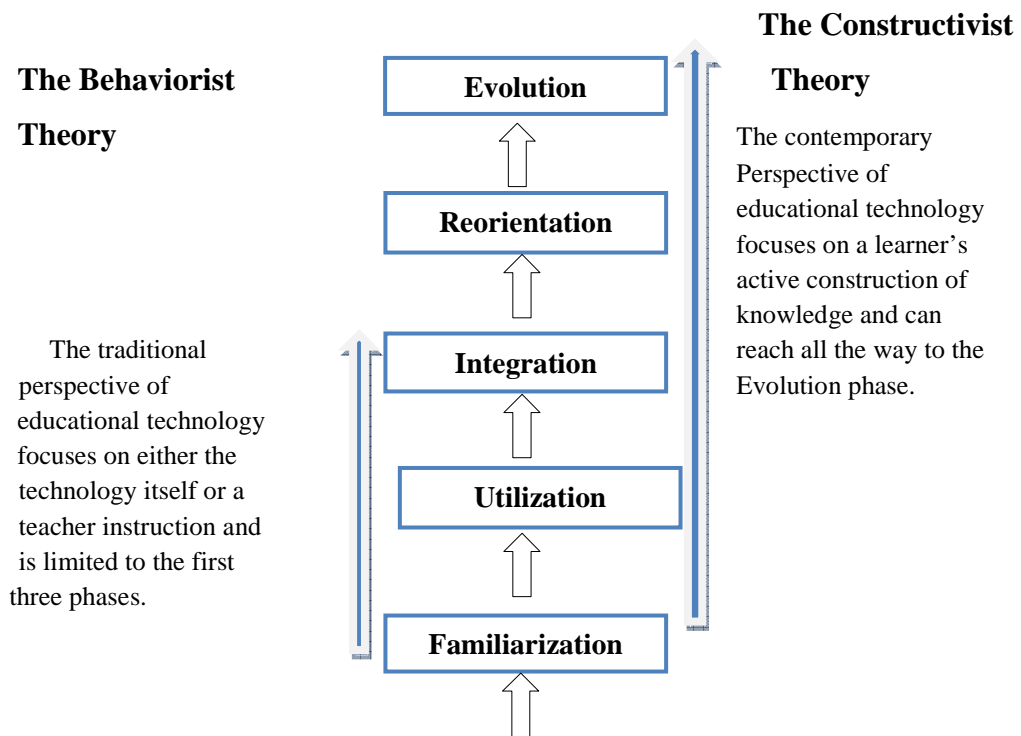
<sup>56</sup> cited in Tomei L., (2008:4) *Adapting Information & Communication Technologies for Effective Education*, Robert Morris University, USA

<sup>57</sup> cited in Tomei (2008:1), *Adapting Information & Communication Technologies for Effective Education*, Robert Morris University, USA

<sup>58</sup> cited in Tomei (2008:7), *Adapting Information & Communication Technologies for Effective Education*, Robert Morris University, USA



Hooper (1995). This model helps learning through an appropriate transition between the five phases by using technology. As represented in figure 2.4 below, Learning cannot take place if one phase is skipped (Hooper & Rieber, 1995).



**“idea” and “product” Technologies**

**Figure 2.4** A Model of Technology Adoption for The Classroom (Hooper & Rieber, 1995)

Both models of technology integration discussed earlier rely on team work and collaboration in the training phase. In fact, there are several examples of collaboration between the learning teams of teachers when integrating technology. One example concerns a group of pre-service teachers who were instructed on how to use the Smart board by Mitchell Josh<sup>59</sup>. The training was in a form of collaborative work and concentrated on the various procedures used in manipulating different options in presenting various lesson's content using a smart board. Another example of collaborative approach was when a faculty member instructed a group of students on how to construct an electronic portfolio for employee recruitment. As the majority of students could not succeed to do so, many courses were integrated in the faculty programme tackling how to create an electronic portfolio and many lessons were initiated online.

<sup>59</sup> A teacher from Pennsylvania Department of Education and Programmes for Higher Education.

### 2.5.2 - The Reflective Model

For Robertson (2007) and his group, ICT integration cannot be reached instantly. It needs preparation and a lot of work since the process of integration goes through several steps. He illustrates that teachers should rely on action learning and reflection to be able to incorporate technology tools in classroom practice. As Sandholtz et al. (1997)<sup>60</sup> reported there are five (5) stages: entry, adoption, adaptation, appropriation and invention. Each stage has conditions and requirements mentioned after the table below:

<b>Stage 5</b>	<b>Invention / Innovation</b>
<b>Stage 4</b>	Appropriation
<b>Stage 3</b>	Adaptation
<b>Stage 2</b>	Adoption
<b>Stage 1</b>	Entry

**Table 2.5** The five Stages of the Reflective Model (Sandholtz et al. (1997).

#### 2.5.2.1 Entry

As with traditional type of teaching, the teacher is at the center of learning, instructing, directing activities. The common tools are: chalkboards, textbooks and overhead projectors. When this teacher uses ICT, he faces problems related to tools managements and technical issues plus needing more time for planning activities.

#### 2.5.2.2 Adoption

In this phase, the teacher starts looking for solutions on how to integrate technology in daily lesson plans. The traditional sitting plan still remains. Common activities would include: word-processing, drills and practice activities. Sandholtz et al (1997)<sup>61</sup> adds that here the teacher can develop his own strategies to solve technical problems of the equipment such as fixing a paper jam or changing the cartridge in the printer. (Dwyer et al. 1991)<sup>62</sup>.

#### 2.5.2.3 Adaptation

Adapting new technologies into traditional classroom environment still continue at this level. Lecturing, sitting plan, teacher-centered instruction dominate the classroom work still. According to Dwyer et al (1991) to cope with ICT integration in class, the teacher should encourage peer observation and team work through a planned schedule for activities.

---

<sup>60</sup> Cited in Robertson, Fluck and Webb (2007). *Seven steps to ICT Integration*, Acer press.

<sup>61</sup> cited in Robertson, Fluck and Webb (2007). *Seven steps to ICT Integration*, Acer press.

<sup>62</sup> cited in Robertson, Fluck and Webb (2007). *Seven steps to ICT Integration*, Acer press.

#### **2.5.2.4 Appropriation**

This step is considered more like a milestone rather than a step. Teachers' attitudes become positive. They grasp technology usefulness and have no pain in incorporating it to accomplish class work. There is more interaction, project-based instruction, collaboration and team work.

#### **2.5.2.5 Invention and Innovation**

At this level, teachers able to reflect upon their type of teaching and would rather adapt their teaching to answer their students' needs. This knowledge is learner-centered and based on constructivism: students construct their own knowledge, project based instruction and group work. Every learner is a teaching situation. Students are active learners through technology use and collaborative work. At this stage, teachers need to support their students by creating a continuous ICT support, type of learning outside school, or via internet or by sharing each other's work and mentoring one another.

### **2.6 Integrating ICT within Teaching Methods**

Before talking about incorporating technology into classroom teaching, it is preferable to have a historical overview of the previous technological tools that were incorporated into language classroom teaching. The early teaching tools, apart from verbal communication, started with the use of the blackboard in the Grammar Translation Method. The overhead projector followed some years later and suited the teacher-dominated classroom. Then, there were the "drill and practice" grammatical activities in the form of early computer software (Warschauer & Meskill, 2000).

The audio-tape helped oral repetition in oral learning in the audio-lingual method between the 1970's and the 1980's. This method failed because, whether in labs or classroom, repetitive drills emphasized form rather than communicating meaning. The next decade (the nineties) witnessed a move to the communicative teaching method. In this method, the emphasis is on students' interaction, engaged in authentic communicative situations. Language is considered more as a communicative and a social act. How was technology integrated in this method? Two main approaches were adopted: the cognitive and the socio-cognitive approaches according to (Warschauer & Meskill, 2000).

#### **2.6.1 The Cognitive Method of ICT Integration**

The cognitive approaches regard language learning as a psychological individual act. The learner forms his own model of the language system. This system, according to (Chomsky, 1986)<sup>63</sup>, is an innate knowledge that intermingles with comprehensive, meaningful language.

---

<sup>63</sup> cited in Warschauer M. & Meskill C.,(2000),*Technology and Second Language Teaching*

Technologies incorporated in cognitive approach are those enhancing language exposure and meaningful context. Some of these can be done through text-reconstruction software, concordancing software and multimedia simulation software.

- Text-reconstruction Software: such as *NewsReader* from hyperbole or *Text Tanglers* offer learners many texts where letters or words are missing or in disorder. Working either individually or in groups, the students re-arrange the texts, doing a mental reconstruction. The computer enables the teacher to construct and rearrange texts, or cloze exercises from any word processed text. The students may use the hints delivered by the computer. Hence, learning is facilitated.

- Multimedia Simulation: enables more exposure to the authentic material in an audio-visual learning environment. This allows good linguistics input manipulation and interactivity (Warschauer & Meskill, 2000).

### **2.6.2 The Socio-cognitive Approach of ICT Integration**

This approach deals with language learning from the social trait. Language is learnt through socialization within a community (<sup>64</sup>Schieffelin & Ochs, 1986; Gee, 1996) Authentic social interaction is engaged in this approach to incite pupils to interact as if they were engaged in communicating outside the classroom. Therefore, they are encouraged to collaborate when doing authentic tasks and projects according to Warschauer (examples of Breen, 1987, Candlin & Murphy, 1987, Long & Crookes, 1992, Prahbu 1987).

Internet use is an ideal tool in the socio-cognitive approach of language teaching. It is a medium that inspires interaction and incites learners' motivation. It either occurs inside or outside the classroom. Classroom discussion helps students develop writing skills instantly by the means of class computer network or a laboratory.

Outside the classroom pupils exchange e-mails or chat with each other through internet chatrooms. This type of interaction replaces the face-to-face communication. It is advantageous for the students' language learning as the number of participants is more than in the face-to-face discussion and the teacher does not monopolize it (Kelm et al, 1992)<sup>65</sup>. Students have the chance to pick up new linguistic chunk such as collocations, common phrases and integrate them on their own messages (Warschauer, 1996). Communicating through typing messages, enable students to use the type of language that is lexically and syntactically more complex than the one used in face-to-face discussion.

---

<sup>64</sup> cited in Warschauer M. & Meskill C.,(2000),*Technology and Second Language Teaching*

<sup>65</sup>as Cited in Warschauer & Meskill, (1996) *Motivational Aspects of Using Computers for Writing and Communication*.

## 2.7 ICT-Based Lesson Planning

An ICT-based lesson plan must first be prepared according to some pedagogical aims before bringing it into the classroom. According to Tomei (2003), lesson preparation goes through several steps. The following sections explain them in more details.

To elaborate a technology based lesson plan, teachers need to determine the pedagogical objectives before searching for appropriate technological material to integrate. A typical technology based lesson must include four (4) crucial components: a theme related to the curriculum and which interests pupils, the level, length and the focus. The lesson ought to be level appropriate and adjusted to the learners' cognitive and academic levels. It should be also time-bound. The language teacher must focus on the main intent of the unit and the subjects tackled. KWL<sup>66</sup> method might be the most suitable.

On the basis of the well-known bloom's taxonomy of educational objectives (Krathwohl and Bloom, 1984)<sup>67</sup>, Tomei (2003) has adapted the six complex steps of cognitive development related to higher – order thinking instruction: knowledge, comprehension, application, analysis, synthesis and evaluation within an ICT based lesson plan. When action is added to each step with specifying the type of activity to use for each step, teachers found this taxonomy very practical for teaching and learning. Hence, they progress from simple to complex, first to last, general to specific. And the six related levels of literacy: collaboration, decision making, instruction, integration and social consideration provide ways to integrate technology based instruction. (Tomei, 2003)

The language teacher needs to prepare technology based lessons according to Bloom's Taxonomy since it targets the learner's cognitive functions through well-chosen activities. According to Tomei (2003), teachers ought to give careful consideration to the following taxonomy for technology domain of integration, summarized below, and which constitute an impetus for teachers motivated to incorporate ICT into their practice. He called it the Taxonomy for the Technology Domain<sup>68</sup> and it includes:

*-Literacy:* Understand computer communication language; know how to manipulate the key boards, mouse and basic software applications.

---

<sup>66</sup> KWL: What do students already know, what do they want to learn, and what did they learn following the presented lesson

<sup>67</sup> as cited in Tomei & Edd (2003, p11), *Challenges of Teaching With Technology Across the Curriculum: Issues and Solutions*.

<sup>68</sup> From: *using a taxonomy for the technology domain*, L.A. Tomei, 2001, Pen Association of Colleges and Teacher Educators. For more details of Tomei taxonomy refer to Appendix I.

- *Collaboration*: collaborate with other teachers by exchanging ideas among students and communicate through emails.
- *Decision-making*: decide to use technology in solving real situation problems Develop strategies to use software
- *Discrimination*: to be able to select appropriate technology based resources and adjust it. according to students age, gender, culture and schooling levels. Encouraging internal access to make further research
- *Integration*: the language teacher should be able at this stage to create new teaching material by using several technology based resources. For instance, s/he should design, construct classroom presentations and implement his/her own text to support the learning content needs.
- *Technology value*: to defend and respect the copyright law in fair technology resources use.

To create learning objectives based on technology integration, the teacher needs to specify objectives for students to achieve. They must be specific, observable, measurable and unambiguous (Tomei, 2003).

## **2.8 Innovation Perception and Adoption**

Literally to innovate is to change something established by introducing new methods, ideas, or products. (The Concise Oxford English Dictionary, eleventh edition, PC-Cd rom) An innovation is the introduction of new things, ideas or methods (Oxford Learner's Pocket Dictionary (2005), new edition, oxford university press. Rogers (2003) defines an *innovation* is an idea, practice, or object that is perceived as new by an individual or other unit of adoption. He further explains that it is not very important whether the idea is all new since the perceived newness is identified according to how the individual responds to it. If he finds it new then it is considered as an innovation. On the other hand, the newness of an innovation is not only related to knowledge. An individual can know an innovation long before developing either a positive attitude towards adopting it or a negative one to reject it.

According to Rogers(ibid), if the innovation is perceived by the user as socially advantageous, useful and pleasant, he is most likely to adopt it very quickly even if it does not seem so objective. An innovation must be consistent with the individual basic values, past experiences and his needs. If it were incompatible with one of these, it would take time being accepted. Complexity is another aspect that slows down the adoption of an innovation especially if it is estimated as difficult to understand and complex to use. So, trialability is a major element in

adopting an innovation Ryan and Gross (1943)<sup>69</sup>. An innovation ought to have observable results. More visible results encourage adopters to discuss their innovation with peers and friends who by turn will request it for themselves. Observability helps the acquisition of innovations by a larger number of individuals (Ryan and Gross, *ibid*).

### **2.8.1 Educational Change**

To be able to introduce change into an EFL classroom, the language teachers have to fulfill some important requirements among which teacher education and a good mastery of the elements of innovation by following some of the well-known models.

Innovation and change are constantly present in any good educational setting; for the leaders always seek to ameliorate the teaching methods so as to improve the learning output (Patru, et al., 2002). ICT has lately changed social, economic and cultural life which has affected school work. “Re-engineering Schools” as it has been called is associated with the kind of ICT changes brought to schools. The proof that ICT has engendered durable educational changes can be found in a number of case studies. In Europe, studies were carried out by CERI which stands for Centre for Educational Research and Innovation within the Organization for Economic Co-operation and Development (OECD) in a number of countries. It was found out that at the end of these case studies that ICT introduction in schools was a kind of lever for change. Teachers are changing their approaches consequently new ways of assessing pupils work are introduced. Pupils became more motivated to learn and therefore achieved more.

#### **2.8.1.1 Teacher Education**

Teacher ICT education is a key element in introducing change but a teacher training programme about technology infusion is a complex task. Some models are influenced by studies conducted in the USA and Europe. They are somehow considered as the pioneers and a guide to ICT use and the change that it might engender (Patru, et al., 2002).

The introduction of ICT in teacher education requires a great deal of preparation like funding, accreditation<sup>70</sup> agencies and participants such as teachers’ educators. The same can be said for the use of ICT in schools where there are many stakeholders (to consider) in the process. Teacher education differs from one country to another according to socio-economic situation of each. In this context Fluck (2000)<sup>71</sup> stated, in his cross-country study, three steps:

---

<sup>69</sup> as cited in Rogers, E.M., (2003). *Diffusion of Innovations*, 5<sup>th</sup> edition, Everett M. Rogers, Free Press (FP)

<sup>70</sup> Give merit or credit to someone, attribute something to him, refer to the glossary for a detailed definition.

<sup>71</sup> as cited in Patru, Resta & Semenov (2002:154) *Information and Communication Technologies in Teacher Education*, a Planning Guide. Division of Higher Education (2002), UNESCO.

1. Students get acquainted with technology.
2. ICT are used explicitly in all subjects.
3. When ICT is clearly integrated in the curriculum in a way that topics involved won't be taught without it and the conventional teaching model won't be of help (Fluck, 2000:2)<sup>72</sup>.

This leads to the core of the matter: how is teacher education organized and carried out? two of the most efficient models are explained in the following section.

### **2.8.1.2 Models of Teacher Education**

The leaders are the pioneers who adopt innovation. However, for educational change to take place, those leaders need to follow well-defined methods and procedures in dealing with teachers ICT education in their work place or institutions. In fact, there are a number of models developed by some researchers which can serve as a guide for leaders. Four of these models are as follow:

1. Diffusion of Innovations (associated with Rogers, 1995)
3. Change Agent's Guide (associated with Havelock and Zlotolow, 1995).
4. Concerns-based adoption model (associated primary With Hall and his associates; 1987).

In teacher education it is recommended to integrated the above four models simultaneously as the nature of change is not linear process, but circular and interrelated (Ellsworth, 2000a).

#### **2.8.1.2.1 Rogers Model (Diffusion of innovations, 1995)**

This model is meant for educational leaders who want to introduce ICT in teacher education. Rogers (1995)<sup>73</sup> has come out with a teacher education's model where he stated five key attributes of innovations:

- Relative advantage of ICT-enhanced teaching and learning over traditional approaches.
- Compatibility: ICT should be compatible with current views and values
- Complexity: ICT should not be made relatively easy to implement.
- Triability: ICT may be tried in a non- threatening way.
- Observability: it should have observable results as in an ICT leader classroom.

Ellsworth (2000)<sup>74</sup> found out in his survey about educational change that between 49% -87% of participants rate of innovation is attributed to the five attributes stated by Rogers (1995).

---

<sup>72</sup> as cited in Patru, Resta & Semenov (2002 :155)*Information and Communication Technologies in Teacher Education*, a Planning Guide. Division of Higher Education (2002), UNESCO.

<sup>73</sup> as cited in Patru, Resta and Semenov (2002) *Information and Communication Technologies in Teacher Education*, a Planning Guide. Division of Higher Education (2002), UNESCO.

<sup>74</sup> as cited in Patru, Resta and Semenov (2002) *Information and Communication Technologies in Teacher Education*, a Planning Guide. Division of Higher Education (2002), UNESCO.



### 2.8.1.2.2 Havelock and Zlotolow Model (1995)

For the leaders to cope with their mission, Havelock and Zlotolow (1995)<sup>75</sup> provided a practical guide that they can adopt to use ICT in the institution, university or college. They called it C.R.E.A.T.E.R. the acronym stands for Care, Relate, Examine, Acquire, Try, Extend and Renew. This guide, according to Havelock and Zlotolow (ibid), is designed also to the deans<sup>76</sup> who are responsible for the education of teachers who are embarking on technology use for the first time, as shown in table 2.6.

Stage	Key activities
<b>0 Care</b>	Identify explicit reasons that motivate individual stakeholders to renew education.
<b>1 Relate</b>	Bring the key stakeholders together to share their Cares and appreciate the cares of others, determining a shared agenda for change.
<b>2.Examine</b>	Analyze the current situation, opportunities and challenges for educational renewal in relation to the shared agenda.
<b>3. Acquire</b>	Gather as much information and resources such as hardware, software, telecommunications, personnel, accommodation, and furniture to support the experiments that will be 'Tried'.
<b>4. Try</b>	Trial the development of ICT to evaluate what works which will then be adapted.
<b>5. Extend</b>	Bring stakeholders and others together to share successes and challenges learned so far. Use this opportunity to expand the number of stakeholders, to raise awareness of the potential of ICT for educational renewal. Note that this stage should also result in action for educational renewal and will raise new Cares. New cycle starts.
<b>6. Renew</b>	This is the core process of educational renewal. The lasting changes are impacted most by the Relate and Share stages described above.

**Table 2.6** Seven Stages of the C-R-E-A-T-E-R Educational Change Model(*Havelock and Zlotolow,1995*)

C.R.E.A.T.E.R<sup>77</sup>. sets the key steps in making the necessary plans to achieve change. This guide has seven interrelated steps which are cyclical forming a model of change. C.R.E.A.T.E.R is a highly practical guide for those leading the innovation to introduce ICT in teacher education. Checklists can be derived from this guide and followed to implement change.

<sup>75</sup> as cited in Mariana Patru, Paul Resta, Alexey Semenov (2002), *Information and Communication Technologies in Teacher Education, a Planning Guide*. Division of Higher Education (2002), UNESCO

<sup>76</sup> The Dean is the teacher educator in pre-service training programmes.

<sup>77</sup> This model has been adopted by American Universities and proved to be successful, according to Thompson, Schmidt & Davis, (2002)

### 2.8.1.2.3 Hall's Model of Change (1987)

Hall and his associates proposed this model of innovation also called Concerns-based Adoption Model (CBAM). It is a continuation to the CREATER role as it assists those involved in adopting the CREATER to keep track of their own progress mainly in localizing the teacher educators ICT integration phases and depicting the level of ICT use as illustrated in table 2.7. This Model was designed by Hall and his associates in 1987 to supervise and check the integration progress in educational change. The Seven Tracking Concerns steps that help an adopter check the use of ICT in teacher education programmes. It is used to assess the level of technology integration as illustrated in the table below.

Levels of Use	Diagnostic Assessment
0) no use	Not involved with ICT.
1) orientation	Begins to find out what ICTs are about.
2) preparation	Gets ready to use ICT.
3) mechanical	Focuses on immediate, rote aspects of ICT.
4) Routine	Uses ICTs in a basic way.
5) Refinement	Considers changes in use of ICTs to improve student-learning outcomes.
6) Integration	Words with colleagues to find ways in which ICT can improve student-learning outcomes.
7) Renewal	Considers how the use of ICT might be improved.

**Table 2.7** Levels of ICT Use (*Hall's Model of Change, 1987*)

This table provides useful instruments to evaluate the pedagogical involvement of teachers in ICT integration and measure the level they reach in perfecting their teaching practice. Hall asserts that change begins with teacher development and had put seven Tracking Levels in the table above which an ICT adopter progresses through while issuing an Innovation. This model is used both for teacher education and for the implementation of ICT in school teaching to check progress by ICT leaders.

### 2.8.2 The Role of the Institution

Because change is not a singular process, various educationists' participation is required. Managing change in schools was the prime interest of Fullan (2001)<sup>78</sup>. He identified the main stakeholders in managing change. He listed seven different groups involved in ICT teacher education, among which five (5) are crucial:

- The dean or professor: is the responsible for managing change in school or college.
- The teaching staff: those directly concerned with change in their teaching topics.

---

<sup>78</sup> as cited in Patru, Resta & Semenov (2002:155)*Information and Communication Technologies in Teacher Education*, a Planning Guide. Division of Higher Education (2002), UNESCO.

- Senior administrators: those responsible for resources acquisition and infrastructure for the planned change.
- Students teachers: future teachers interested in ICT skills and knowledge acquisition.
- School teachers: ICT coordinators in schools, headmasters, leaders of professional development and collaborators for teachers training.

The leader of change in school is important, however; the role of his institution is even more important for educational change to take place i.e. the vision of the dean has to be approved by the university or the school institution. According to (Fullan M. 2001)<sup>79</sup>, there must be a shared vision of the future utility between schools principals<sup>80</sup> and the teachers' needs.

In order to have an approval on the educational change to implement, there ought to be a discussion and an agreement between the organization and the teachers. The group concerned should deal with what Rogers called it "Relative Advantage" of ICT over traditional teaching approaches. To make the change more successful and continuous, a common future vision is essential as an introductory phase (Patru, et al., 2002).

The leader of the institution or the faculty has to share leadership with other teacher leaders and educators. To be efficient, the good leaders have to involve the institution group well in advance to make sure they all start on a common ground. Therefore, the vision agreed upon will be a major component of the ICT strategy accomplished by the CREATER model (Havelock and Zlotolow, 1955).

## **2.9 The Case Study: ICT in ALGERIA**

The most important evidence from previous ICT research in Algeria was a web report written by Hamdy, A. (2007). It presents a general view of the latest activities, practices and ICT issues in education. In this country report which is part of a larger report survey of ICT education in Africa, it is stated that Algeria encourages the incorporation of ICT in different fields to enhance progress in education and in particular to encourage teachers and students in its implementation as part of a framework policy. As a matter of fact, Algeria appointed a national committee in charge of creating synergies among different sectors in the infrastructure, training, research and information systems and ICT. A national ICT committee working group will be appointed in order to formulate short, medium and long term action plans for ICT (Hamdy, 2007).

---

<sup>79</sup> Fullan M. (2001): is an distinguished researcher in the domain of educational leadership

<sup>80</sup> Principals: are headmaster or school directors

According to the same report, the Ministry of Post and Information Technology (M P I T) was required by the Algerian government to implement and manage the Algerian ICT policy. The government also collaborated with other international agencies like the World Bank in 2002 for the implementation of ICT in enabled environment and making it accessible to all Algerians. To put its policy into practice, Algeria initiated a programme to provide a computer to every home which was launched in 2003. The level of ICT integration is still at an early stage though. The mobile phone and internet users' number is growing very fast. There are so many internet cafés in urban areas especially. In 2000, the National Public Institution of Telecom was split into two commercial organizations with two operators: Algerian Post and Algerian Telecom. There are three main operators: Algerie Telecom (mobile & fixed lines) Orascom (Djezzy & Lacom for fixed lines) Alwatanya (Nedjema and Internet access with mobile phones). Algeria has entered the information society through these initiatives.

- To equip all schools with computers in 2005 by the Ministry of Education.
- To launch the distance education project.
- The virtual university project.
- To put a research network by the Ministry of Higher Education & Scientific Research.
- The National Health Development Agency (ANDS) will develop the Health Network.

There was another Algerian initiative for the university graduates and hi-tech entrepreneurs with the objective to build a Silicon-Valley innovation zone and make an "Algerian version" of google (Sawahel W., 2009). That programme was supposed to enable Algeria to join the Information Society and knowledge-based economy as part of e-Algeria 2013 strategy. The National Agency for the Promotion and Development of Technology joined his United States partner in order to set a fund enterprises specializing in creating viable Algerian ICT projects conducted by university graduates and entrepreneurs (Sawahel W., 2009).

### **2.9.1 The Algerian ICT Projects**

Algeria has given paramount importance to ICT integration in the Algerian society. It stresses on the development of national strategy for training educators. This was realized in two ways by the Ministry of Education when giving assistance to ICT implementation: direct instruction or through collaboration with its partner agencies like the United Nations Educational Scientific and Cultural Organization (UNESCO), European Union (EU) and other United Nations Organization (UNO) agencies. About 130 United States Dollars(USD\$) was sponsored by Algeria

to build the technology park of Sidi Abdelah, called the Technopole, 30 kilometers from the capital Algiers. It is called the Information Technology (IT) city and is meant to symbolize Algeria' access in the information society. Other Algerian ICT initiatives have followed like the Net Entreprise, a technology incubator to do operational planning for institutions support and a National Institute of Telecommunications (INT).

The Algerian government allocated the amount of three billion dinar in 2002 to sponsor its commitment policy for the integration of ICT within the educational system. The reforms touching this sector were part of Algeria formal ICT policy in the same year (Hamdy, 2007). All secondary schools were equipped with computer lab (fifteen(15)computers: ten(10)for students and five (5) for teachers) connected to internet through ADSL or via cable modem, as part of a project to promote education.

A number of international organizations were invited by Algerian government to supervise the integration of ICT. UNESCO made some initiatives in the Algerian educational system to enhance ICT use while the Japanese government has funded teacher-training programmes with an estimated amount of 750 000 USD\$. The majority of these initiatives to improve the quality of teaching and learning were related to:

- The promotion of e-learning resources.
- Facilitation of public-private partnership to support e-learning.
- Development of integrated e-learning curriculum to support ICT in education.
- Promotion of distance education, virtual education in Higher Education.
- Establishment of a national ICT center of excellence.
- Awareness of the opportunities offered by ICT as an educational tool in education.

According to Hamdy (2007), Algeria invested more money on the purchase of equipment and the building of technological institutions, like the case of Sidi Abdelah, than on the teacher pedagogical training. In the same context, Kennewell (2004) reported that one essential condition for a successful ICT use is to know how to use Technology tools effectively in every aspect of teaching. This skill involves being able to decide when it will be beneficial to use ICT, and when it will not; and which tools and teaching strategies are more convenient. It means that beside the resources afforded by Algeria, there must be more interest in promoting the experience of the technological knowledge of users who are in this case teachers.

### **2.9.2 ICT in Algerian Education**

In addition to the international multiple initiatives regarding ICT, Algeria has made considerable efforts and is determined to integrate it in its educational system. The last educational reforms consolidated the Algerian commitment towards the incorporation of ICT in the different levels of schools. The money allocated to realize the formal ICT policy since 2002 is about three billion dinars (Bokova I., 2014).

Almost all secondary schools were equipped with a number of computers and were connected to an Asymmetric Digital Subscription Line (ADSL) type of internet accessed via cable modem. About 50% of the middle schools must have ICT adoption as part of the educational programme i.e. ICT taught as separate subject. However, for the primary schools, the equipment was financed by donations of the pupils' parents and local community contributors (Hamdy A., 2007; Bokova I., 2014).

The universities were also equipped with computer labs and internet access for students, teachers and the administration. Digital libraries were made available to empower students' learning in both virtual universities and distant learning. Each university has to manage the educational process on its own. The government has also sets a framework to implement technologies in education. In the same context, the Ministry of Education puts forward a direct action plan with the participation of UNESCO, the EU and other UN agencies to enhance ICT implementation within schools (Bokova I.,2014).

### **2.9.3 ICT in the Algerian Secondary School Curriculum**

Technology integration should not prime over pedagogy. After being skillfully trained, the teacher can elaborate teaching practices based on the use of ICT. The teacher of English who seeks to integrate technology in his lesson planning, has to choose the tools to be used, adapt it with the method of instruction and do the necessary preparation of an ICT-based lesson planning (English Language Programme of Secondary Education, 2011).

The same ICT curriculum in Textbooks is designed by the Ministry of Education to all institutions throughout the country. To enhance teaching and learning, ICT is to be integrated in each subject as an instruction tool according to its specifications not as an end in itself (Hamdy, 2007). ICT is integrated in the Algerian curriculum. It was clearly stated in the educational syllabus of 2006 which followed the reforms of 2001. This integration of ICT in the curriculum where teachers are incited to use ICT is not associated with an explicit technology implementation into the students' book (Algerian English Syllabus of 2006).

In fact, it was stated in the syllabus that it was up to teachers to decide upon the mode of integration that works best for their pupils according to their different teaching situations in their schools (Programme of English, 2As et 3As Secondaire, 2011). According to the Algerian curriculum, the pupil at this stage is in his/her second or third year secondary school, must already be familiar with common technology instruments and has already developed competences that enables him/her to integrate ICT in English classroom activities. Therefore, it is up to the teacher to determine the type of resources and tools to be used according to the learner's needs and the lesson objectives.

#### **2.9.4 ICT-based Lesson Planning in Algerian Schools**

The teacher of English in the Algerian secondary school is not provided with a ready-made lesson-plan of ICT implementation according to the teacher's guide, but with a set of material to be adapted to suit the level of each group of pupils. They, actually have a technology prior knowledge which they had acquired in previous levels, namely in the middle school, for they study ICT as a separate subject. Thus, they are used to the technology tools which they used for communication, documentation and research.

The Algerian secondary school syllabus also urges the teachers of other subjects such as those of informatics to help learners at this level to create files in directories and sub-directories in the computer. Learning how to use e-mail will help pupils to produce written messages, and chatting on the web will develop their oral capacities. It is concluded in the Algerian syllabus an ICT-enhanced learning environment provides pupils with more abilities and fluency to present their projects more efficiently (Document D' accompagnement du Programme d' Anglais, de 3ème Année Secondaire, 2011)<sup>81</sup>.

The web can be exploited to serve the cultural purposes of language learning. Through chat-rooms and educational forums, pupils would be enabled to use English for communication purposes and they will be exposed to authentic situations with English native speakers. For example, as in all levels, the third years' syllabus has set forward educational projects which pupils can elaborate through the web. The search engines Such as [www.google.com](http://www.google.com) and [www.ask.com](http://www.ask.com) are suggested to pupils to search for topics related to the subject matter being taught like to:

- To situate the different civilizations in time and space.

---

<sup>81</sup> The English language syllabus of the 3<sup>rd</sup> year Secondary Education,2011

- To locate countries considered as “paradis fiscaux”<sup>82</sup> so that pupils be aware of the dangers of tax evasion and money laundering.
- To locate on the web countries known for counterfeiting and electronic piracy.
- To design an advertisement with sound or music and video for a well-known product.
- To visualize the planets of the solar system with images and virtual sites.

These technology based objective previously stated are jointly paired with pedagogical skills to reach when teaching through technology. The outcomes are such as:

- Learn how to ask questions and answer question correctly
- Learn how to turn written information into a graphic form or vice-versa
- to summarize an article, an interview or a conversation
- to design a work plan or plan a project
- to guess word meaning and make inferences
- Sort out information collected from books or the web according to its relevance.

### **2.9.5 ICT in English Language Teaching in Algeria**

Technology has a big educational impact nowadays. Technology in education means the incorporation of any technological tool to support the learning process. As ICT is in continuous development, there is a constant need to up-date the technological knowledge to take advantage of its full potential in English language teaching (Mekhoukh S., 2012).

Integrating ICT in teaching English language offers the learning experience a rich content. Unlike traditional technology such as audio-tapes, the modern technology tools like computers can provide various resources and authentic material for students. In addition to motivating students and teachers at universities and different schools, ICT offers you the possibility to access online material by yourself and is good means for distant learners.

Makhoukh (ibid) points out that in spite of the fact that schools have been equipped with computer applications and internet for more than ten (10) years now, these technological tools are rarely accessed by teachers and students no matter how the government tried to integrate technologies by making reforms or offering multimedia language labs either in higher or in the secondary education. These efforts were made to ensure the utilization of ICT in teaching English language at schools and universities.

---

<sup>82</sup> Tax-evasion , avoiding to pay taxes is an illegal and unethical business practice



However, little has been done to supervise the application of these measures on the ground. It has been noticed that instructors are not encouraged to use technologies. They do not have access to the technological equipment or to the facilities at work. There were other obstacles such as old language labs, broken computers, classrooms inconvenient size, beside poor administrative management(Makhoukh S., *ibid*).In order to remediate to those difficulties mentioned earlier, some teachers used their own personal laptops for lectures.According to Mekhoukh, the Algerian schools and universities are not so different from one another in terms of technological equipment therefore she suggested the following procedures so that teachers will be able to cope with ICT unavailability.

- ✓ teachers have to be ready to work with minimal resources available.
- ✓ teachers who lack the ICT skills should seek appropriate training when not provided by the institution.
- ✓ ELT teachers need to take into account their students' needs and interests when planning their ICT based courses.
- ✓ Working in small groups is an ideal opportunity for teachers to implement ICT. However, due to the large groups that teachers have in classes, it is preferable to use video, slideshows or dynamic pictures as diaporama through projectors.
- ✓ Instructors ought to encourage their pupils to consult web pages, blogs and social networks.

Finally Mekhoukh advised Algerian teachers to exploit ICT potential within schools and universities rather than just using it at a personal level.

#### **2.9.6 In-service Training in Algerian Schools**

The programme of ICT training for Algerian teachers is rather limited. According to the Ministry of Education statistics, teachers received between 30 to 60 hours of training but this training was rather short in the number of hours and the number of trainees who really attended it. Though, according to the same source, 100% of Secondary School teachers and 60% of Middle School teachers got basics of ICT use, the quality teaching and the methods adopted by teachers in classes are below what was expected. The most important training provided for teachers is about ICT basics like: initial windows startups: windows based software and Microsoft Word-Excel (Hamdy, 2007).

### **2.9.7 ICT Integration Challenges in Algerian Schools**

Algeria among other developing countries attempts to incorporate ICT in its schooling system. But in order to implement ICT in education, it needs resources, money, infrastructure and training. Hamdy (2007) presented a table<sup>83</sup> that shows core ICT factors and summarizes the current stages of development in terms of enabling or constraining technology application in the Algerian educational system. He lists some major aspects which are summed up below.

The Algerian educational policy intended to adopt ICT in the educational system in 2002 but it was not empowered by the implementation of the infrastructure and the necessary resources. Although Algeria has brought some learning material and tools to the educational centers, the equipment is not sufficient and appropriate for schools learning needs because the installation of computers and other technology tools are mainly centered in big cities while there are fewer schools and universities in the rural areas.

The total absence in the human resources resulted in what follows:

- implementing programmes cannot be carried out at a large scale due to the big linguistic differences throughout Algeria.
- Concerning the professional development like the teacher training, it is still insufficient and very limited. There is only an ICT basic training which is not related to technology integration that serves the pedagogical needs of classroom teaching.
- ICT training programmes in Algeria need to be rich in content; and national curriculum should be changed to give room for a correct implementation of technological reform.
- The lack of connection between the different development programmes negatively affects development. There were many projects and initiatives to support the implementation of ICT but they were not sustainable.

### **2.10 Conclusion**

Throughout this chapter, a review of an interesting literature tackling the integration of ICT in ELT contexts is described and analysed. The body of literature, presented here, may look long but it cannot be exhaustive enough since the domain of modern technologies is large and multi-dimensional. In spite of that, this body of literature review is organized in concordance with the research tools section orders to facilitate understanding for the reader and to provide coherence.

---

<sup>83</sup> It is Table N° 4,p.7 & 8: *Factors Influencing ICT Adoption*, in his report: *ICT in Education in Algeria, Survey of ICT and Education in Africa (2007)*. <http://www.infodev.org>.

After defining concepts, a brief account of ELT is exposed with contrast between the old type of teaching and the learner-centered one. The emphasis is made on the fact the ICT is much more correlates more with the learner-centeredness. Then, there is a description of the main difficulties that teachers encounter when integrating technology in their classrooms like the lack of technical and pedagogical skills and equipment access or to other psychological factors such as teachers attitudes. The main literature reports agree on the necessity of material availability, training and motivation. Through reading ICT related papers, three models of ICT integration have been examined and most of them had five phases to follow. The two striking examples are the constructivist and the reflective models. After that, we explored literature that is linked to the teaching methods based on technology incorporation and also on ICT based lesson components.

Another important part of this literature review is the innovation. The four mentioned models of educational change should not follow one another in a linear way. Instead, they complement each other while having different aspects of the same phenomenon since change appears to be a more complex process. Integrating ICT in teacher education is a complicated process. The educational models described previously determine the relevant conditions for successful change. There is a wide range of literature dealing with how to cope with educational change starting with teacher education in institution wishing to embark on incorporating ICT into education programmes. The educational models are useful in proposing plans that determine optimal conditions for innovation. These elements are necessary in planning and implementing of ICT in teacher education. It is important to remember, however, that the two most important ingredients in the whole process of change are leadership and professional development.

# Chapter Three

*Data Analysis*

&

*Interpretation*

## Table of Contents

3.1 Introduction .....	89
3.2 Data Analysis and Interpretation.....	89
3.3 Data Analysis Method.....	89
3.4 Teachers' Questionnaire Data Analysis .....	91
3.4.1 Participants Background Information.....	91
3.4.2 Analysing Questionnaire Findings.....	92
3.4.2.1 Participants ICT Experience.....	92
3.4.2.2 ICT Frequency of Integration....	93
3.4.2.2.1 Age Factor.....	94
3.4.2.2.2 Experience Factor and ICT Integration.....	95
3.4.2.3 ICT Access and Facilities.....	96
3.4.2.4 Teachers' Opinions and Attitudes.....	98
3.4.3 Technological Training & Support.....	100
3.4.3.1 Technical Training.....	100
3.4.3.2 Teacher Pedagogical Training.....	102
3.4.3.3 Providing ICT Support.....	103
3.4.4 ICT Competence in Lesson planning.....	104
3.4.4.1 ICT Integration Frequency in Lesson Planning.....	106
3.4.4.2 Web-Based Lessons .....	107
3.4.5 ICT Challenges and Difficulties.....	110
3.5 The Pupils' Questionnaire.....	111
3.5.1 The Objective of the Pupils' Questionnaire.....	111
3.5.2 Data Analysis of Pupil's Questionnaire.....	113
3.5.3 ICT in Pupils' Social Environment.....	113
3.5.4 ICT Training and Manipulation.....	114
3.5.5 ICT In Classroom Learning.....	115
3.5.6 Difficulties in Using ICT in School.....	117
3.5.7 The Learners' Opinions.....	118
3.6 Classroom Observation.....	118
3.6.1 General Conditions of Classroom Observation.....	119
3.6.2 The Observed Participants.....	119
3.6.3 Classroom Observation Data Analysis .....	120
3.6.3.1 The Integrated Technology Tools in lessons .....	120
3.6.3.2 The Teaching Content and Curriculum Objectives.....	121
3.6.3.3 Observation Findings and Remarks.....	122
3.7 Interview Making.....	123
3.7.1 The Participants Profile.....	123
3.7.2 Description of the Interview.....	123
3.7.3 Analyzing the Interview.....	124

3.7.3.1 Familiarity with ICT and Teaching experience .....	125
3.7.3.2 Training and ICT Integration.....	126
3.7.3.3 ICT in Classroom Teaching .....	128
3.7.3.4 Experience of ICT Integration .....	129
3.7.3.5 ICT in Assessment.....	131
3.7.3.6 ICT Integration Difficulties.....	132
3.7.4 ICT in Classroom Learning.....	134
3.7.4.1 Recycling .....	134
3.7.4.2 Learning Aspects .....	135
3.7.4.3 Homework through ICT.....	136
3.7.4.4 ICT and Innovation in Teaching.....	137
3.8 Comparing and Interpreting Findings .....	138
3.8.1 ICT Integration .....	139
3.8.2 ICT Integration Frequency.....	140
3.8.3 Teachers Experience Using ICT.....	141
3.8.4 Teaching Experience and ICT .....	142
3.8.5 ICT Training.....	143
3.8.5.1 The Effect of Training on Technology Integration.....	143
3.8.6 Comparing Difficulties using Technology.....	144
3.8.7 Innovation in English Language Teaching.....	145
3.8.7.1 ICT Integration Competence.....	146
3.8.7.2 ICT in the Classroom.....	147
3.8.7.2.1 ICT in Lesson Preparation Steps.....	147
3.8.7.2.2 Web-based Teaching.....	149
3.8.7.2.3 Assessment.....	149
3.8.7.3 Recycling.....	149
3.8.7.4 Meeting Learners' Technology Expectations.....	150
3.9 Conclusion.....	151

### **3.1 Introduction**

The present chapter intends to gain insights into the integration of ICT in EFL classrooms by means of the data gathered from teachers' and pupils questionnaires, classroom observation and a teachers' interview. Ain Temouchent secondary school teachers were selected as the main population to carry out this research. They were first observed in classrooms, then administered a questionnaire and interviewed. The study attempts to reveal their perceptions of the technical and pedagogical difficulties encountered when integrating ICT in the classroom practice; and explores whether technological tools incorporation contributes to innovating the teaching practice.

Thus, this chapter's aim is twofold. First it presents the analysis of the collected data from the research procedures. Second, it offers some insights into perceptions and attitudes of the participants with reference to the technology integration. Its preliminary aim is to identify pupils' perceptions of ICT in their social milieu and schools by trying to approach their attitudes towards technologies and checking their ICT background knowledge. Looking at the problem from the teachers' perspectives, this study tries to correlate the answers of both populations.

Data analysis is used in this case-study so as to obtain information about the data issues associated with the relevant research questions and objectives. As far as the methodological process used in this case-study, data were measured and analyzed both quantitatively and qualitatively within the mixed method scope. The concurrent method was followed by analyzing each type of data separately then, comparing them to find whether they converged or diverged. In these regards, most of the researchers assume that using more than one type of analysis contribute to obtaining more reliable research findings.

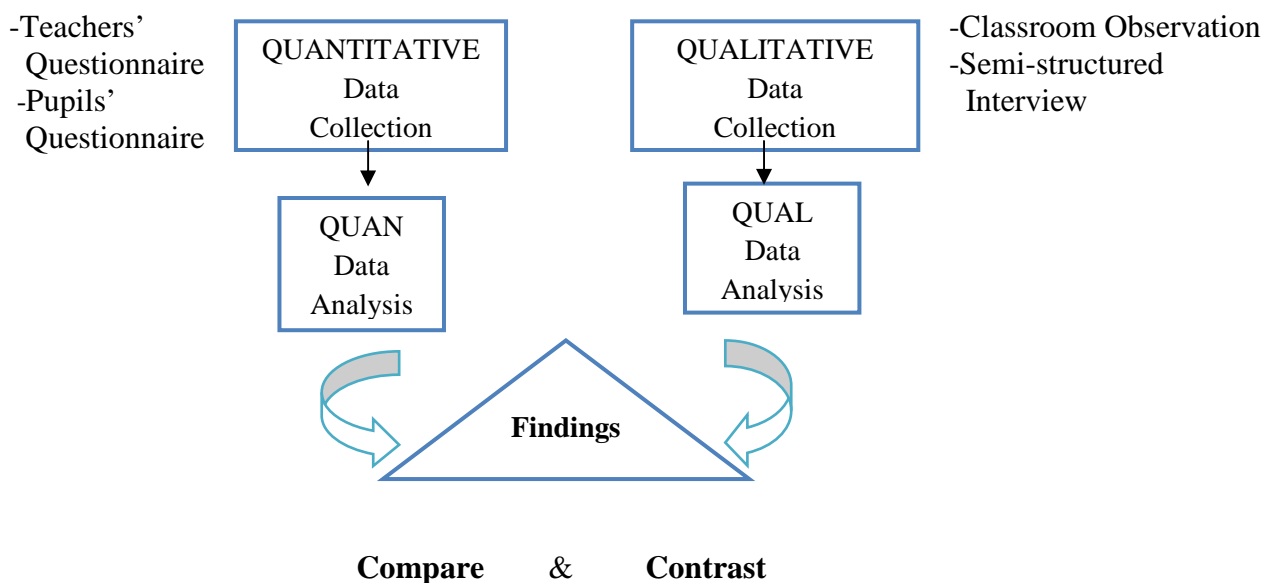
### **3.2 Data Analysis and Interpretation**

Exploring the integration of ICT in Ain Temouchent secondary schools is done in a more like survey research. After observing participants in classrooms, two semi-structured questionnaires are administered to the population of participants and also an interview was conducted. Since, four research instruments were adopted in collecting data, in data analysis a mixed method was needed. Quantitative data analysis method was employed to analyze the teachers' and pupils' questionnaires while classroom observation and the interview required the use of qualitative data analysis method. The most important element of ICT integration was the focus upon ICT use, training, integration and the different difficulties encountered.

### 3.3 Data Analysis Method

The method used to analyze data in this research was both qualitative and quantitative. A mixed method design was more appropriate to this study. According to the data analysis method indicated in the methodology chapter, the Concurrent Mixed Method of data collection and analysis was adopted. Traditionally, the mixed methods are associated with the concurrent or parallel method or triangulation (Plano & Creswell, 2011; Teddlie & Tashakkori, 2009)<sup>84</sup>. First, both qualitative and quantitative data were collected and analysed separately. Priority was given to both. Then, they were compared. If they converged, they would be mixed as one output but if they did diverge, they would be contrasted and interpreted differently (Plano & Creswell, 2011).

Thus, quantitative data resulting from the teachers and pupils questionnaire were triangulated with the qualitative data from the interview and classroom observations. Data from the two questionnaires were analyzed quantitatively while the interview and the classroom observation are analyzed qualitatively as illustrated in figure 3.1 of Townsend, Floersch, & Findling below.



**Figure 3.1** The Convergent Parallel Design  
(Adapted from Townsend, et al., 2010)

The between-method triangulation involves combining both qualitative and quantitative methods in studying a single phenomenon. It has been used for the sake of reaching a convergent external validity (Denzin, 1978 as cited in Hussein, A., 2009:4)

<sup>84</sup> cited in Angell & Townsend (2011). *Designing and Conducting Mixed Methods Studies*, Institute for health, The State University of New Jersey,



A more recent and detailed definition of triangulation is given by Thurmond, who describes triangulation as “[...] the combination of at least two or more theoretical perspectives, methodological approaches, data sources or data analysis methods” with the intent to “[...] decrease, negate, or counterbalance the deficiency of a single strategy, thereby increasing the ability to interpret the findings” (Thurmond, 2001:253)<sup>85</sup>. This last theory justifies the multiple research tools used in this research.

In the following sections, all data will be analyzed according to each research tool previously used (Cohen, et al., 2007:468). Thus, the results from teachers’ questionnaire are presented first, then those from the pupils’ questionnaire, next follow those from the classroom observation and after that those of the teachers’ interview.

### **3.4 Teachers’ Questionnaire Data Analysis**

The teachers’ questionnaire is the main research tool used to collect quantitative data. Some open-ended questions are included in it to allow for a more gathering of information of qualitative nature from the participants.

#### **3.4.1 Participants Background Information**

The questionnaire in this exploratory case study was addressed to EFL teachers and learners. The first and main population is teachers of English language in Ain Temouchent secondary schools. The questionnaire has been administered to ninety-three (93) participants and is completed by sixty-seven (67). The population was chosen at random<sup>86</sup>. The teachers who were present in the seminar were invited to participate in the study. The criterion of choice was availability. ‘Random sampling has to do with how the participants were chosen from the population’, (Fisher and Gosset<sup>87</sup>). According to Mertens (2010) much research in education is done with available population. The table below described the teachers’ questionnaire population according to the different age categories, as shown in Table 3.1.

There were three age categories: the [24-30] that represents the new generation teachers with less than ten years of experience. The second one was between [31-40] which include participants

---

<sup>85</sup> cited in Steve Kappenthuler (ETH) & Katrin Oettmeier (HSG) (2014)

<sup>86</sup> Unintentionally, and here it refers to a process by which validity is ensured when distributing a questionnaire

<sup>87</sup> Quoted in (Mertens, 2010, p.414) in *Research and Evaluation in Education and Psychology, Integrating diversity with quantitative, qualitative and mixed methods*, Ed. 3. Copyright 2010 by SAGE Publications, Inc.

of ten years' experience and they were middle aged while the third category is ranged between [41-60]. This latter comprises more experienced participants as shown in the table below.

Age range	24-30 years	31-40 years	41-60 Years	Total
<b>Total per age category</b>	15	25	27	67

**Table 3.1** Teachers' Age Categories

It was noticed that the majority of participants' age was centered in the middle age range of [31-40] years with a percentage of 32, 83% of the total population of teachers as participants.

### 3.4.2 Analyzing Questionnaire Findings

In the present study, ninety-three (93) copies were distributed to the participants attending a seminar. Sixty-seven (67) copies were completed and returned. The response rate was 72, 04 % which is quite appropriate to this survey. This was due to the fact that the questionnaire was handed directly to the participants after getting their verbal consent. The teachers' questionnaire results were analyzed according to three variables: experience using ICT, the integration frequency and the teaching experience.

#### 3.4.2.1 Participants ICT Experience

Participants were asked in the first question to describe their experience of ICT integration in their English language classrooms in Ain Temouchent secondary schools. The results are reported in the table below.

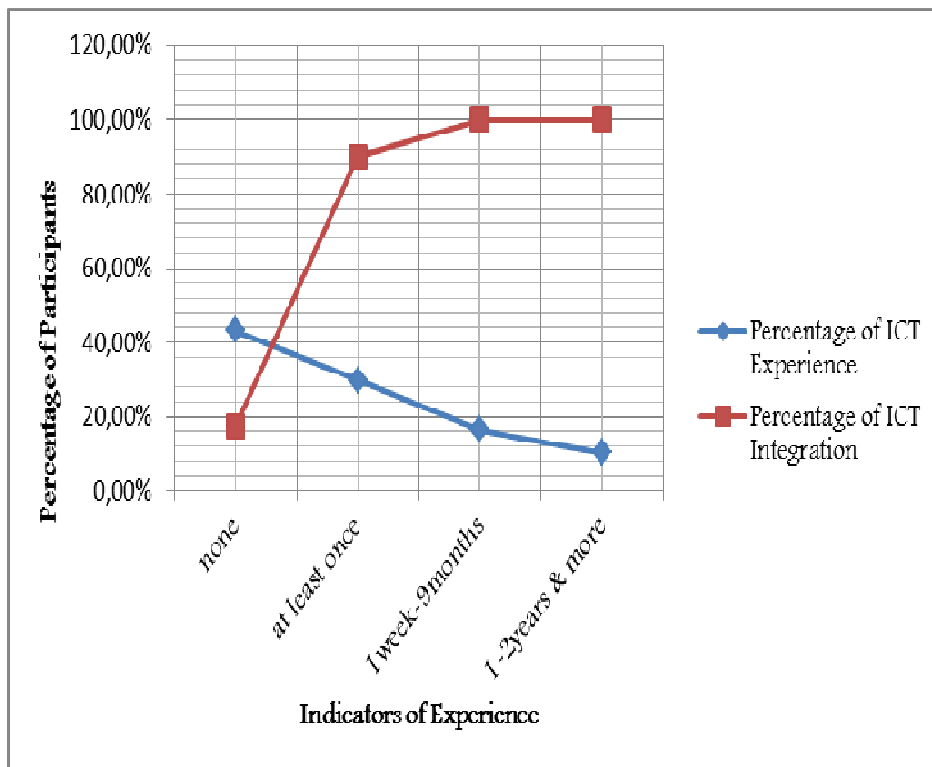
Teachers' ICT Experience	None (no experience)	At Least Once	1 week-9 months	1-2 years and More	Total of Experienced Teachers
<i>Number of Participants</i>	29	20	11	07	38
<i>Percentage of ICT Experience</i>	43,28 %	29,85 %	16,41%	10,44%	56,71%
<i>Participants who Integrate ICT</i>	05	18	11	7	41
<i>Global Percentage of Integration</i>	17,24%	90%	100%	100%	61,19%

**Table 3.2** Participants ICT Experience in Secondary Schools

When examining the table's results, it was found out that twenty-nine (29) teachers out of sixty-seven(67) had no experience using ICT in their classrooms but there were five(5) participants

in the *none* category who integrated ICT, but on a rarely basis. While twenty (20) teachers used it only one time in their careers with 29,85 %, eleven (11) participants stated that they have been using ICT for a period of 9 months i.e. during one school year, and only seven (7) participants have been using it for a period between one(1) to two (2) years.

It was noticed that less and less participants were experienced in ICT along their careers. 16,41% for the [1week-9months] category and only 10.44% for [1-2 years and more] category. Nonetheless, it was noticeable that the general integration rate was quite high. It was rising according to the participants experience level. So, there was a correlation between experience using ICT and the frequency of its integration.

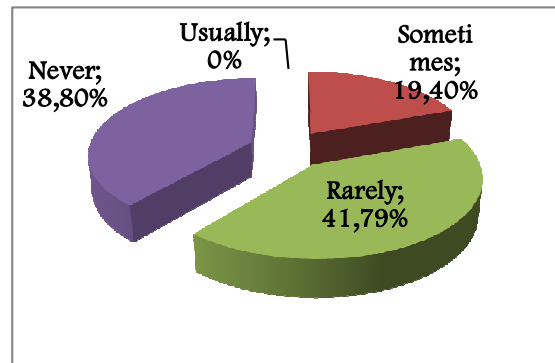


**Figure 3.2** ICT Integration According to Experience

Therefore, according to the results of ICT experience and ICT integration, represented in figure 3.2 above, the rate of technology integration was higher among the three (3) experienced categories: the [at least once] had a percentage of 90% of integration and both of [1week-9months] and [1-2 years and more] have 100%. Thus, it could be deduced that experience in using ICT had a direct influence on technology integration in classrooms. Out of 56,71% of ICT experienced participants 61,19% of them integrated it in their classroom work. However, the number of experienced participants decreased gradually with the years

### 3.4.2.2 ICT Frequency of Integration

In this section, there was a shift from how long the participants have been integrating ICT to focus on how often they integrate it in classes. In response to question number 1.2 of the questionnaire, concerning the frequency of ICT integration in their classes, 41,79 % of the participants have been found 'rarely' integrating ICT to teach their pupils. But 19,40 % 'sometimes' incorporate it, and 38,80 % 'never' introduced it in their classes. Figure 3.3 illustrates the results below.



**Figure 3.3** ICT Integration Frequency

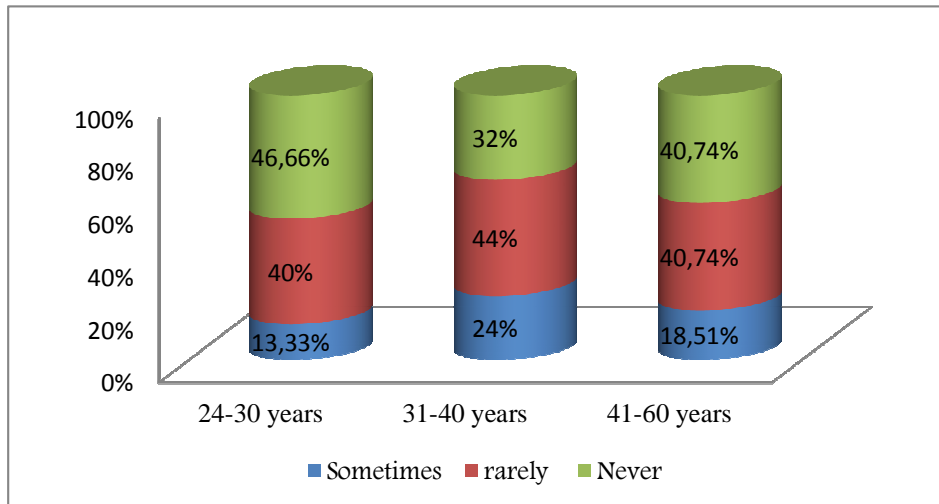
According to some researchers effective technology integration is likely to be influenced by a number of factors such as the lack of knowledge and skills, lack of school structures, subject culture and teachers' attitudes towards technology (Gilakjani, Leong and Ismail, 2013:52).

According to the results in the figure 3.3, introducing ICT in the classroom was not a usual practice that language teachers do. It was deduced, then, that technology was integrated either occasionally or in certain cases but not regularly.

#### 3.4.2.2.1 Age Factor

Which age range of the participants used more often ICT than others? The researcher wanted to see if there was any correlation between age range and ICT use. The factor of age normally increases the teaching experience and ICT use. The results were calculated and represented in figure 3.4. According to teachers' questionnaire finding, the age range of teachers between [31-40] used ICT more often than others with a percentage of 24%. The third age category of [41-60],

unexpectedly resulted 18,51%, lower than the middle aged category and higher than the first aged category between [24-30] which scored the least ICT use with 13,33%. In the column of “rarely”, the middle aged and third aged participants had the same rate while the younger age category had a low rate.



**Figure 3.4** ICT Use Frequency According to Teachers' Age

It was concluded that participants who were in the middle of their career used ICT more often than those in other age categories.

### 3.4.2.2.2 Experience Factor and ICT Integration

Do participants with more ICT experience integrate it more than others in classroom teaching? This section reveals which category of participants integrated technology more frequently among the followings: “none”, “at least once”, “1 week-9months” and “1-2 years or more” categories. Complete results are reported in table 3.3 below.

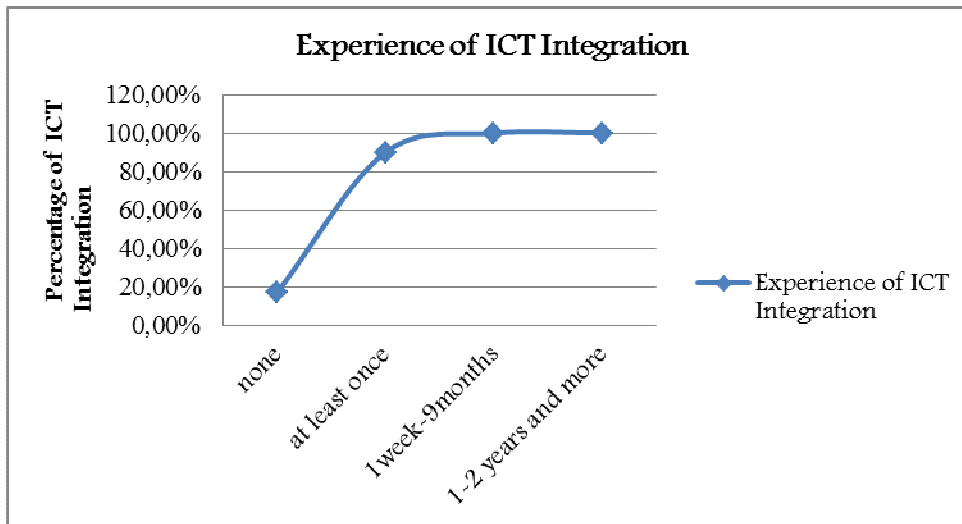
Frequency of ICT Use	N° of Teachers According To ICT Experience	Usually	Sometimes	Rarely	Never
		N° & rate	N° & rate	N° & rate	N° & rate
<i>None</i>	29	0-0	0	5- 17,24 %	24- 82,75 %
<i>At least once</i>	20	0-0	1- 5,26 %	17- 85 %	2- 10 %
<i>1 week -9 months</i>	11	0-0	6- 54,54%	5- 45,45 %	
<i>1-2 years</i>	7	0-0	6- 85,71%	1- 14,28 %	

**Table 3.3** ICT Integration Frequency According to teachers' Experience

When analyzing the results presented in table 3.3 above, the percentage (%) was calculated according to the number of participants in each experience category so that it would be possible to compare the results.

After examining the results, it was found that all participants do not incorporate ICT as a usual practice in classrooms. It was rather occasional or rare. Those with “at least once” experience did not “usually” use ICT while those under the category of “1 week-9 months” scored 5.26%. The same category of participants had the percentage of 54,54% of used in the “sometimes” frequency. The category under “1-2 years” of experience scored the highest percentage with 85% which means that participants in this category used technology more than others. This was due to their long experience with technology.

The proportions of “rarely” and “never” are rather considered as negative when looking into results. The higher the percentage was, the less and rare was technology integration; Just as the 82,75 % of the participants in the “none” category “never” use technology in their classes at all, 85 % in “at least once” category also “rarely” do. The category of “1 week-9months” had 45,45 % of technology use in “rarely”. Figure 3.5 below illustrates the teachers’ experience in integrating ICT in classrooms.



**Figure 3.5** Experience of ICT Integration

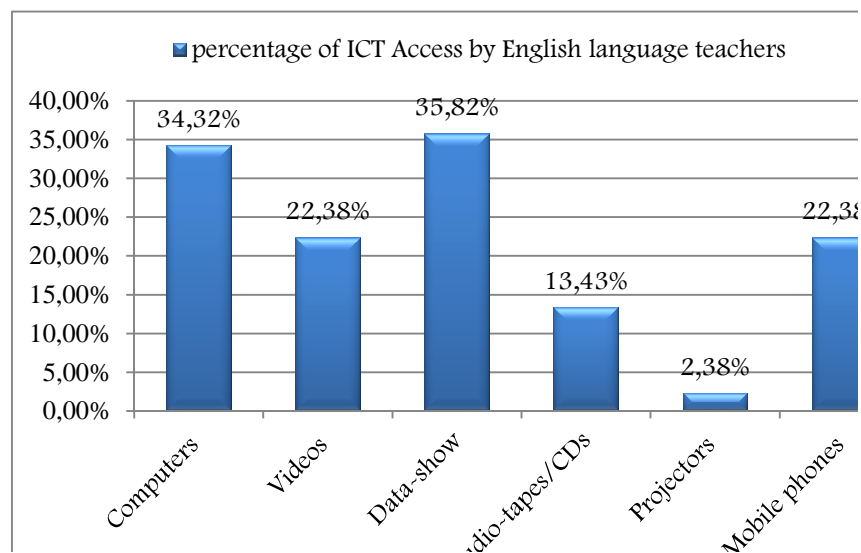
In fact, the graph represents the correlation between frequency of using technology and the experience using ICT among the participants. It was noticed after analyzing table 3.5 findings that the participants under the category of “1week -9 months” and those under “1-2 years” tend to used technology in the classroom more often than those who used ICT only once, in the range of “at least once” although those in the latter category had the highest rate but it was centered in the “rarely” frequency. It was the same as those who had no experience at all, in the “none” category.

Experience using technology influenced positively the language teachers in the secondary schools of Ain Temouchent.

### 3.4.2.3 ICT Access and Facilities

Question N° 1.3 sorts out the type of ICT equipment accessed in schools. Mumtaz (2000:336)<sup>88</sup> indicated that insufficient resources in schools constitute obstacles to the adoption of ICT. Lack of computers and software in the classroom could restrict teachers' ability to work with ICT to a great extent. So, if teachers in Temouchent schools wanted to use ICT in their classes, they needed first to have an access to technological equipment that must be available in their secondary school.

As represented in figure 3.6 below, the participants of this study, however, accessed a variety of technological tools in their secondary schools. Concerning the resources integrated, 22,38% of the participants used the mobile phone to illustrate some language items in their classes whereas 35,82% i.e. twenty-four (24) out of sixty-seven (67) participants used data-show connected to computers either to project videos or present pictures slides. Two teachers said they used old projectors, and nine (9) participants used audio-tapes or CD's.



**Figure 3.6** The Percentage of ICT Access by English Language Teachers

Schools play an important role in providing access and technological resources for teachers and learners. Secondary schools had teaching programmes which are provided by the Algerian Ministry of Education and appeared in the last edition of English syllabus concerning the ELT is of 2011.

<sup>88</sup> cited in Al Mulhim (2014), *The Barriers to the Use of ICT in Teaching Saudi Arabia: A Review of Literature*, Universal Journal of Educational Research, Plymouth University.

When answering question 1.4, about the use of ICT instruments in their classes, 59,70% of Ain Temouchent secondary school participants reported that they integrate ICTs in their classes via the curriculum to teach English because they had chosen to do so i.e. as a personal initiative whereas the other 32,83% stated that ICT is integrated in their subjects because of curriculum requirements. The results of question seventeen (17) reported that only 25% of the participants were aware of ICT integration in the Algerian curriculum. This result was similar is to the interview in this point. As a consequence, this had negatively affected teachers towards adopting ICT despite the fact that the ELT curriculum officially required them to incorporate it.

Nevertheless ICT resources and tools provided by Ain Temouchent secondary schools allowed to a certain extent language teachers to use them more in their classes since 35, 82% of the participants informed having access to data-show in schools, 34,32% access computers when responding to question (1.3) of the teachers' questionnaire.

ICT integration starts with access and facilities that the school provides to EFL teachers. No access to the material meant there was no possibility to use technology in classes and no ICT experience acquired. 79, 10 % of Ain Temouchent secondary schools participants reported that their schools posted no official planning for ICT use for pedagogical purposes and provided no schedule for ICT access. Consequently, although ICT equipment is available in secondary schools, the lack of organization and planning made access difficult for teachers; which generally discouraged them to incorporate technology.

#### **3.4.2.4 Teachers' Opinions and Attitudes**

This study explores teachers' attitudes and opinions about possibilities to integrate ICT in EFL classes and how they consider its influence on their own professional development and on improving the learning process and abilities of pupils. The teacher's role has an efficient role among other factors, that participate in developing Education but his/her efficiency relies first of all on the attitude s/he has in the classroom environment (Singh,2012:1).

Attitudes are measured by stating a number of items related to ICT integration. They were grouped in a measuring table according to Likert Scale<sup>89</sup>. Table 3.4 measured items targeting

---

<sup>89</sup> Likert scale is a psychometric scale primarily used to obtain participants' attitudes and preferences by eliciting their degree of agreement and responses: Strongly Agree, Agree, Undecided, Disagree and Strongly Disagree (Bertram Dane).



teachers' readiness to integrate ICT and explored technology influence on pupils' autonomous learning, cognitive abilities such as memorizing, recalling information and some cognitive competences like learning to learn accordingly with Likert scale in which participants were typically requested to rate items by referring to some dimensions like importance, interest, or usefulness (McKay S.,L.,2008:38)

ICT Beliefs and Attitudes	S A	A	Total SA+A	UN	D	S D	Total D+SD
-It is important to find different ways to use computer in the classroom.	62,68%	14,92%	<b>77,61 %</b>		1,49%	/	1,49%
-Using a computer in an ELT classroom is a priority.	38,80%	7,46%	46,26%		40,29%	1,49%	
-Learning how to use technology tools is a teacher's professional goal to accomplish.	52,23%	23,88%	76,11%	1,49%	5,97%	1,49%	
-Pupils' interest, needs and suggestions are necessary when planning technology related activities.	68,65%	10,44%	79,10%	2,98%	8,95%	/	
-Teaching through ICT enhances pupils' autonomous learning.	20,89%	53,73%	74,62	1,49%	13,43%	1,49%	14,92%
-ICT incites pupils to focus more on learning and try harder.	32,83%	46,26%	79,10%		4,47%	2,98%	7,46%
-ICT enables pupils to understand and recall information more easily.	43,28%	41,79%	85,07%	4,47	4,47%	/	4,47%
-Using technology improves higher- order thinking skills( for critical thinking, and problem solving)	44,77%	26,86	71,67%	1,49	10,44%	5,97%	16,41
-ICT activates learners' metacognitive skills (learning to learn, social competences, etc.)	20,89%	50,75	71,67%	2,98	8,95%	2,98%	11,94%

**SA:** Strongly Agree , **A:** Agree, **Un:** Undecided , **D:** disagree, **SD:** Strongly Disagree

**Table 3.4** ICT Beliefs and Attitudes

When requested in Question two (2) to express their beliefs about ICT use during lessons, 62,68 % of the informants are motivated to find different ways to use the computer in classroom teaching and 52,28 % of them considered ICT as enhancing the learners' autonomy. However, less than 40% of them thought of computer use as a priority. Thus, by using ICT and interactive activities, teachers tended to consider their pupils interests, background experiences and preferences to solve learning problems.

The table reveals that 52,23 % of the informants had a desire to improve their technology skills and knowledge as part of their teacher self-development. In responding to a question on whether ICT incite pupils to concentrate more on learning by trying harder, 32, 83% strongly approve of this idea, 31,46 % simply agreed whereas less than 7 % disagreed on that. Being able to

retrieve information stored on the computers or on a personal flash disk, at any given time, is a bonus for learners in and outside the classroom. This enhances his autonomy. More than half of the participants strongly agreed on the output of collaborative work in class through the use of technological tools and 84,07 % supported the idea that ICT helped pupils to recall information more easily. The mental capacity of information storing and retrieval differed from one learner to another that is why not all respondents approved of limiting the faculty of recalling to the simple use of technologies. Three (3) participants strongly opposed this view and argued that technology could enhance memorizing just as (Ulewicz & Beatty, 2001) thought that video could ameliorate and enhance teaching, Videotaped lessons gave the proof of stimulating conversations and illustrating language points through actions.

71,63 % of the respondents agreed that ICT use in the classroom could develop in pupils' critical thinking. Higher order thinking skills could give pupils an acquired competence in learning how to learn. According to Pritchard (2007), Knowledge construction is more important than knowledge reproduction. Pupils should acquire new knowledge and understanding instead of knowing something as an end product. Higher order thinking skills actively engaged them in the learning process. 20, 89 % of the participants strongly approved of ICT as a trigger of metacognitive abilities and 50,75% of them agreed on that.

The finding indicated that the respondents who had positive attitudes towards ICT implementation in ELT classes, reported high percentages in the previous table 3.4.

### **3.4.3 Technological Training & Support**

Integrating ICT requires more than positive attitudes; it needs the craft and a know-how to plan lessons based on technology incorporation for in ELT classrooms.

“Research indicates that training in ICT skills is crucial in implementing ICT integration in the teaching and learning of English and the extent to which teachers are given time and access to pertinent training to use computers to support learning plays a major role in determining whether or not technology has a major impact on achievement.”

(Samuel and Zitun, 2007: 10)<sup>90</sup>.

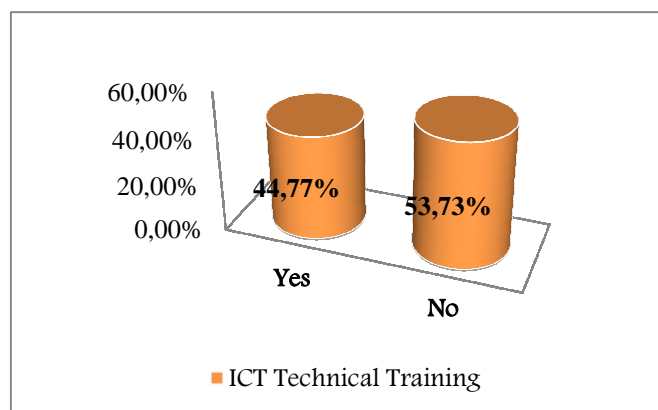
Training has much influence in the adoption of ICT by teachers in classrooms. There are two types of training: technical training and pedagogical training. Both can empower teachers' to implement ICT in Classes.

---

<sup>90</sup> quoted from: Gary Motteram (2013), *Innovations in learning technologies for English language teaching*, British Council, teaching English.

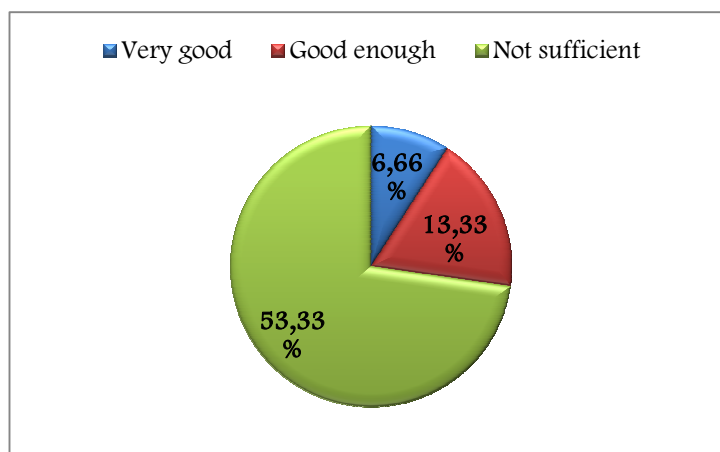
### 3.4.3.1 Technical Training

In question 3.1 of the questionnaire, the participants were asked if they had ever received any technical training of ICT and the total number of those who received technical training is thirty (30) with a percentage of 44,77% and those who were not trained is thirty-six (36) with a percentage of 53,73%. One participant chose both answers: “yes” and “no”, therefore it was not taken into consideration in data analysis. The training results are illustrated in figure 3.7 below.



**Figure 3.7** ICT Technical Training

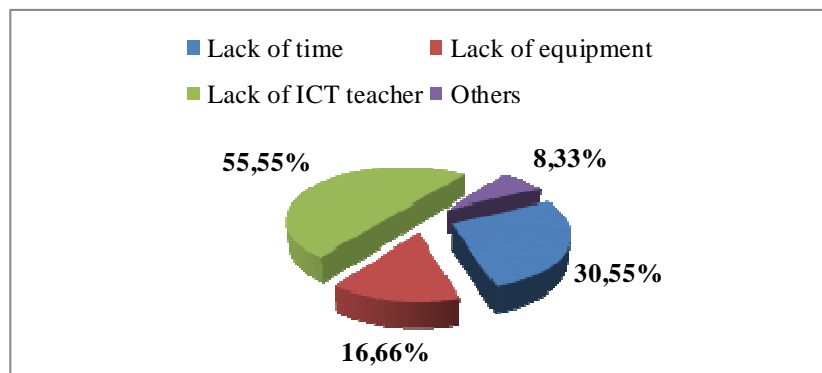
When describing the quality of their training among the thirty (30) respondents who had received ICT training, only two (2) of them considered it as very good, and four (4) others said it was good enough to be able to use ICT in their classes to teach pupils and do research on the net. However, sixteen (16) of the respondents i.e. 53,33 % considered their training as being insufficient for EFL teaching needs and unrelated to teaching when using Technology. The figure 3.8 below described Ain Temouchent secondary teachers' quality of technology training.



**Figure 3.8** The Quality of ICT Training

The number of participants who did not take any ICT training is thirty-five (36) with a percentage of 53,73%, which was more than half of the participants in the study.

As far as the reasons behind this lack or insufficient training, the respondents claimed they were many obstacles. Figure 3.9 below best represents these barriers. It should be noted that each participant had chosen more than one reason for his/her own lack of training. Some of the most important ones were as follows: 55, 55 % of them complained of the lack of ICT teacher. It was followed by 30, 55% of those who related the lack of training to the lack of time. They had long hours of teaching and full time schedule over the day and at night time they were further busy with lesson preparations, homework or exams corrections. That left them with so little time to do ICT training. The other 16, 66% justified their lack of training with the lack of technology equipment in the school where they were supposed to be trained. So, the training consisted mainly of theoretical lessons with no practice.



**Figure 3.9** Reasons for Insufficient ICT Training

There are 8,33% of those who stated no reason for their lack of training. But others gave reasons, for example one respondent reported doing self-training because training was not organized by his school. At last, 11,11% of the respondents did not specify any reason.

### 3.4.3.2 Teachers' Pedagogical Training

Pedagogical training is crucial to implementing ICT in EFL teaching. It should follow teachers' technical training. Thus, as reported by Hennessy, Ruthven and Brindley (2005) trained teachers had changed their pedagogy and role in the classroom and identified the objectives of technology integration. Table 3.5 of question 3.2 reports the participants' pedagogical training which they undertook as part of their professional development.

when answering a question on whether the participants have had any introductory courses on general applications like basics of word processing, spread sheets or Power Point presentations,

59,70% of the participants replied negatively. 10,44 % of the teacher participants had a period of ICT training for a period of between fifteen (15) days and one month, 5,97% of them benefited from a period of three (3) months and 5,97% from a period of six months. Another 5,97% of them claimed they had been trained but did not specify the period of training.

Pedagogical ICT Training Contents	Yes %	Yes with no Specified Period	No %	If yes, specify the period		
				15 days-01 month	1-3 Months	3-6 Months
- Basic courses on general applications as MicrosoftWord, Excel, Power Point presentations or internet use provided by your school.	22,38	5,97	59,70	10,44	5,97	5,97
- Courses on the pedagogical use of ICT in teaching as the interactive White board, laptop, data show, overhead projector etc.	7,46	14,92	70,14	2;2,98	1,49	2,98
-Use e-mails, blogs, and forums for professional development purposes.	8,95	10,44	68,65	4,47	1,49%	2,98
-The ICT training provided by your school.	0	4,47	85,07	0	0	0
-ICT personal self-training in your own time.	14,92	23,88	58,20	11,94	0	2,98

**Table 3.5** Pedagogical ICT Training for Teachers

The reply on the second question in this section is related to whether informants had received any specific training on laptops or computer use, smart white board, head projector. 7,46 % said they did; 14,92 % replied positively but they did not specify the training period of time. However five (5) participants indicated that they are trained to use technology in English teaching for a period between one to six months.

The next question is related to use of e-mails, blogs and internet forums for pedagogical purposes. 68, 65% of the participants had no training at all whereas a minority not reaching 10% had. Three (3) of those specified one (1) month training period, two others specified 3 to 6 months and one participant three months. Only four (4) participants said they had received training in their secondary schools but no period was specified which implied that it did not last for a long time or it was not organized properly. More than 80% of the participants complained of having no ICT pedagogical training in schools.

It is clear that in most cases, training was not given; teachers are left unqualified. More often, it was a certain type of individual teacher who took the initiative and implemented technology into his/her classroom. Generally, this type of teacher uses readily available, free online tools and finds

out how to use from social networks or some online help resources (Lave and Wenger, 1991: 98)<sup>91</sup>.

As a matter of fact, when the participants are asked whether they had any ICT personal self-training in their own time, ten (10) participants said they had ; eight (8) of them had self-training outside school for a period of one month and two others for six months. However, 23,88 % also had training but did not precise the period which lets you deduce it was not well-organized.

To conclude, we can estimate that during the last two years, the majority of the participants replied that they had no ICT training provided by the secondary schools. As a consequence, a minority of them had turned to other places for some technical self-training in their own time. The most important period of training is very short, between fifteen (15) days to one month and it dealt with some basic courses on general applications. Thus, teachers at the level of Ain Temouchent secondary schools are not technologically well-equipment and not trained to integrate ICT in classrooms. Despite this fact, one might ask if they are supported while dealing with technology in schools.

### 3.4.3.3 Providing ICT Support

If technical and pedagogical training are usually inefficient, teachers will definitely need to be supported or assisted when implementing ICT in their classes. Question 3.3 of the questionnaire targets the type of support the participants got inside their schools or outside them and check their readiness to integrate technology. The table below reports the findings.

<b>Source of Support: Who gives support?</b>	<b>No support</b>	<b>Technical support</b>	<b>Pedagogical support</b>	<b>Both technical and pedagogical support</b>
<b>- A more experienced / knowledgeable colleague teacher?</b>	67,16 %	14,92 %	1,49 %	8,95 %
<b>- Other school staff?</b>	73,13 %	5,97 %	7,46 %	0
<b>- Experts from outside the school?</b>	68,65 %	11,94 %	1,49 %	1,49 %
<b>- An ICT online-training website?</b>	83,58 %	5,97 %	5,97 %	2,98 %

**Table 3.6** ICT Support for Teachers

The results showed that the great majority of language teachers rarely received any assistance when introducing technology in classrooms which means that they had to rely on themselves only. As a matter of fact, 14, 92 % of participants rarely received help from an ICT knowledgeable colleague since 67,16% did not receive no form of training or support. Only six participants

<sup>91</sup> quoted from: Gary Motteram (2013), *Innovations in learning technologies for English language teaching*, British Council, teaching English

reported that they did. 5,97% and 7,46% receive either technical or pedagogical assistance from other school staff. The lack or insufficient support made them turn to seek help from outside schools: 11,94% of them found help from some informatics experts, engineers or teachers of computing in private schools or they simply counted on their relatives. The other 5,97 % tried to get some guidance and assistance in websites meanwhile 83,58% could not get support from the net. Generally speaking, teachers got support but it was below 10% in all mentioned cases.

According to the table's results, the large majority of participant did not benefit from any type of support when trying to implement technology in their classrooms. Finally, the table shows in the column of "both pedagogical and technical support" those who are normally enabled to integrate ICT more easily than others but their percentage is very low; 8,95% of them got support apparently from other more experienced colleagues. Two other participants got help from websites.

#### 3.4.4 ICT Competence in Lesson Planning

In order to find out how competent English language teachers were in implementing ICT in EFL classrooms, the research participants were provided with table 3.7 below of question 4.1 of the questionnaire and were invited to describe how they performed through the use of technology. The aim of this key question was to find out the participants' ICT competence in ELT. The table given to participants contains ticking answers ranging from "yes, a lot" to "none" and it reports results below.

Planning Lessons with ICT	A lot	Somewhat	A little	None
-Write a text using Microsoft Word processing programme.	41,79 %	17,91 %	14,92 %	25,37 %
-Email a file to another teacher and send messages.	17,91 %	17,91 %	13,43 %	38,80 %
-Create PowerPoint presentation with simple animation of pictures or video and integrate into the lesson activities.	11,94 %	14,92 %	14,92 %	46,26 %
-Participate in educational discussions in forums, blogs social networks on the net like Facebook or Twitter.	8,95 %	5,97 %	13,43 %	59,70 %
-Download and install software on a computer	11,94 %	8,95 %	23,38 %	41,79 %

**Table 3.7** Planning Lessons with ICT

41, 79 % of informants could produce texts and were able to execute Microsoft Word processing programmes. 17,91% of them could somehow produce texts for reading comprehension or listening comprehension, cloze passages or any type of Microsoft word processing programmes on the computer. 14,92% had little knowledge about word processing and 25,37%, did not know how to use Microsoft word processor and had no competence.

However, 17,91% of the participants had the ability to connect to the internet and knew how to send email, messages or exchange educational files with other colleagues while 17,91% could “somehow” do this. 13, 43% had little competence but 38,80% could not email documents. This in contrast with what Erben et al, (2009) stated that email exchange occurred between the teacher and the pupils and between pupils outside the classroom including keypal<sup>92</sup>.

Creating simple presentations animated with Microsoft PowerPoint is a valuable teaching tool in the classroom but only 11, 94% out of all participants had this craft. This is not enough since 46, 26 % of informants had little knowledge if not any of this tool and of how to incorporate it properly in their lessons.

The research also shows that respondents did not, on the whole, participate in educational discussions or forums in blogs on the net. Apparently, only a few of them had social networks accounts in Twitter or Facebook and although 59,70% of them admitted not having access to web browsers like google search, Wikipedia and educational web sites like britishcouncil.org, a minority of as 8,95% always took part in educational discussion or blogs, and 5,97% said they could “somehow” do that. Furthermore, only 11,94 % could download and install software on a computer because it is a machine that needs upgrading and repair. But 41,79 % of the participants were unable to deal with software. This inability will affect their teaching practice since having the ability to install software would enable teachers to purchase and install educational programmes like language dictionaries on a computer.

In the open-ended question, number 4.2, the participants were asked to list the internet resources they used to improve their classroom practice. So, 43, 28 % of them regularly visited educational websites. Some of the most visited websites were: [Elt.algeria.com](http://Elt.algeria.com), [britishcouncil.dz/fr](http://britishcouncil.dz/fr), google image, google map, [Youtube.com](http://Youtube.com), [zemalisalem.weebly.com/](http://zemalisalem.weebly.com/), [google.com](http://google.com), [oxforddictionary.com/us](http://oxforddictionary.com/us), [physique48.org/?p48=ang1](http://physique48.org/?p48=ang1), [Tefl.net](http://Tefl.net), [easyenglish.com](http://easyenglish.com).

Beside visiting educational websites, Unexpectedly, only 15 teachers out of 67of the participants had email addresses for academic use and pedagogical purposes.

---

<sup>92</sup> Keypal is the same as penpal who communicate using e-mails instead of old letters.



### 3.4.4.1 ICT Integration Frequency in Lesson Planning

When responding to a guided question (5.1) concerning whether teachers possibly incorporated ICT in their lesson plans, 55,22% of them indicated they implemented it in the pre-lesson phase while 11,94% introduced it during the lesson phase. 13, 43 % of the participants incorporated it in all the lesson phases. A small number of them used ICT in the post lesson phase, that is 8, 95% which stood for six (6) participants. It is noticeable that more than half of the participants incorporated ICT in the pre-lesson phase as a warm up to either introduce the topic being taught or anticipate some language vocabulary for a listening or reading text. The number of participants who used it both lessons phases or in all lesson steps is practically between (8) and (9). However 25% of participants who did not answer this question because they either did not integrate it or had no idea how to proceed with it.

In another close-ended question, number (5.2), the participants were requested to describe teaching aspects and the learning practices of while using ICT. They should indicate the frequency in table 3.8 to score teaching competencies associated with technology use. To evaluate the extent to which teachers could innovate their teaching through ICT integration, a table was made representing learner-centered teaching activities and were asked to range them from “always”, “usually”, “sometimes”, “rarely” to “never”. The scoring frequency adverbs of “always” and “usually” were considered to gather more positive results while “sometimes”, “rarely” and “Never” were obviously negative.

Teaching aspects and learning practices	Always	Usually	Sometimes	Rarely	Never
- The whole class is involved in the lesson.	65,67 %	13,43 %	2,98 %	2,98 %	4,47 %
- Pupils are engaged project-based activities	4,47 %	22,38 %	28,35 %	23,88 %	1,49 %
- Pupils do collaborative work in groups.	29,85 %	31,34 %	23,88 %	1,49 %	/
- Pupils discuss ideas with other pupils and their teacher.	17,91 %	32,83 %	32,83 %	7,46 %	1,49 %
- Pupils take part in assessing their work: self or peer-correction.	4,47 %	25,37 %	25,37 %	25,37 %	/
- The ICT material prepared is appropriate to pupils' different learning styles: visual, auditory, tactile...	4,47 %	10,44 %	22,38 %	26,86 %	23,88 %
- preview ICT content and adapt it before presenting it in class.	41,79 %	8,95 %	1,49 %	10,44 %	19,40 %

**Table 3.8** Integrating ICT in Teaching Aspects and Learning Practices

When describing one statement on presenting, demonstrating and explaining to the whole class, most informants, 65, 67% said they “always” did it but only 13,43% reported they “usually” did. The rest was a low percentage between 2,98 and 4,47 for “sometimes”, “usually” until “never” frequencies. Project-based activities were not always part of the participants’ classroom

activities. 4,47% of them preferred this type of work but 22,38% and 28,35% of them, respectively, “usually” and “sometimes” organised project based tasks. In the response of the third statement 29,85% of participants said they always involved pupils in group work activities of the “think, pair, share” type which was positive if done more often. 30% of the participants usually encouraged pupils to do collaborative work in the classroom.

32,83% of participants asserted that their pupils usually discussed ideas with other pupils and the teacher but only 25% usually asked pupils to do self-evaluation activities like auto-correction activities or semi-guided self-correction or peer correction. These tasks incited them to become autonomous learners. It is well-known that preparing technological material according to pupils’ different learning styles, such as the auditory, the visual or the tactile, is part of the teachers’ task if they intend to switch to the learner centered teaching strategy. This type of teaching was unlikely and less frequent because only few participants “always” attempted to apply it. Before presenting a lesson based on technology, it is crucial to preview its content in advance but 40,29% of the participants neglected this; yet another 41,79 % always previewed the video content before presenting it in class.

The results of table 3.8 displayed a small rate of positive responses regarding the frequency of performing ICT task based activities. There was lack of encouragement of learner’s autonomy and lack of experience in employing ICT to satisfy learners’ needs.

#### **3.4.4.2 Web-Based Lessons**

In order to depict the internet use in the elaboration of ICT-based English language lessons, the participants were asked how often they prepared internet related activities. This question (5.3) had the aim to illustrate this frequency and if they had the intention to innovate EFL teaching.

After looking at the results in table 3.9, it was found that less than 20% had daily access to internet to collect information and learning material for lesson preparation by visiting google search pages. 16,41% of teachers did this search once a week while another 25,37% browsed the web several times in a month and 22,38 % rarely connected to internet. Erben, et al.(2009) think that teachers can access websites to collect video material because an English language learner is able to guess the meaning of a message through body language and facial expressions.

In sentence three (3), answers were more a less different: every day 8,95% of the participants surfed on the net for material to facilitate different concepts and skills; but 10,44% of them did that

every week. The number of responses jumped to 25,37 % in searching “several times a month”. When it came to use of internet to seek online professional training and development, more than 60% of the participants rarely connected to internet except for a few of them.

<b>Internet-based lessons</b>	<i>daily</i>	<i>Weekly</i>	<i>Several times a month</i>	<i>Rarely</i>
-The teacher searches the internet to collect information to prepare lessons.	19,40 %	16,41 %	25,37 %	22,38 %
-S/he browses the web to collect learning material for classroom practice.	11,94 %	11,94 %	16,41 %	34,32 %
-S/he browses for material to facilitate teaching difficult concepts and skills.	8,95 %	10,44 %	25,37 %	23,88 %
-S/he Looks for online professional training opportunities	4,47 %	2,98 %	22,38 %	40,29 %

**Table 3.9** Collecting Teaching and Learning Material from the Web

Generally speaking, less than 20% of the participants connected to the web to prepare lessons and half of these browsed the net looking for difficult concepts or for professional development.

When asked to think (in question 5.4) of ways or procedures which could help incorporate ICT in an ELT class, the participants came out with valuable ideas. These ideas constituted qualitative data to analyze. It was categorized for analysis. Only thirteen (13) participants gave suggestions and eight of them were ICT relevant. They proposed ways to adopt technology into every day lesson teaching. It was believed that the more tips they knew, the more ideas and experience they possessed. Some suggestions are quoted as follow:

**Teacher1:** “First, I consider pupils’ needs then, test the equipment in advance

Next, I plan the ICT lesson. After that, I present it according to the lesson objectives”

**Teacher4:** “Searching internet, selecting appropriate material. Then, I modify it, present it generally as a warm up.”

**Teacher8:** “First, I introduce ICT as a warm up. Then, I elicit meaning of vocabulary items. Next, teaching part of a story to assemble them and construct the whole story again.”

The participants’ suggestions were categorized according to their importance as follows:

- Selecting material appropriate to the learners’ needs.
- Test the ICT material and preview the content in advance.
- Select, modify, adapt and present it to the learners.
- Using ICT material in the warm up.
- Using software to download needed material.

The participants were asked in an open-ended question (N° 5.5) to think of a lesson or a teaching situation that worked well for them in the classroom, to briefly describe it and describe what their roles were in it. Thirteen (13) teachers i.e. 19,40%, provided answers which were selected according to relevance and completeness. It was noted that all the thirteenth (13) participants described their teaching activities based on technology without referring to the role they played as teachers, of how or why it worked well for them.

The purpose was to know if their usual type of teaching is learner centered. Actually, the lesson of teacher N°5 looked more like the learner-centered type and the lesson of teacher N°8 was group work-based. In both lessons, technology was well implemented through well-planned pedagogical purposes. These two types favoured the use of technology in classrooms work. The rest of the teaching situations were categorized in the table according to the lesson function and objectives.

The level of technology integration according to table 3.10 could be classified in the stage of adaptation<sup>93</sup> in which, most participants integrated new technology into traditional classroom

CT use Features/objectives	Samples from teaching situations of the participants
-Warm up	<b>Teacher 2:</b> "I prefer using ICT in warming up. It can be a song or a set of pictures associated with activities." <b>Teacher 7:</b> " <i>Unit 3:</i> Third (3 <sup>rd</sup> ) year literary students. (Ancient civilizations) Teacher shows pupils pictures about Algerian Heritage Sites and asks them to match each site with its picture (place)."
-Homework sent by e-mail to the teacher	<b>Teacher 3:</b> "I Gave homework to be done and sent to me by e-mail."
-Use of the video to teach new vocabulary	<b>Teacher 4:</b> "In: <i>Once Upon a Time: listen and check:</i> I used a video. My pupils did the task easily while watching the video. I also used pictures to help my pupils understand the new vocabulary."
-project-based learning and learner-centered type of teaching	<b>Teacher 5:</b> "I asked pupils from a Science Experimental class (S.E.) to prepare a scientific experiment with its report. They did it all by themselves. Data-show, computer equipment, my role was only to explain some new vocabulary items which they could not understand in the experiment."
-using the video to teach difficult concepts	<b>Teacher 6:</b> "I used a video about "obesity" with pupils of the third (3 <sup>rd</sup> ) year. Then, I gave some tasks related to this video."
-ICT Use in team work or group work	<b>Teacher 8:</b> "Building a text. Pupils worked in groups. Let's assume four (4) groups. Each group has a computer. I sent part of a story to each group, by e-mail of course. The role of the groups is to gather all parts, arrange them and sort out the final story as a whole and then present it in a form of a PowerPoint."

**Table 3.10** Samples of ICT Integration in Classroom Practice

<sup>93</sup> Adaptation: step N° 3 of Robertson, Fluck and Webb (2007) in their *Tentative Theory* of technology integration (Chapter of Review of Literature)

practice. Here, they often focused on increased student productivity and engagement by using word processors, spreadsheets and graphics tools whereas teachers N° 5 and 8 were in the stage of appropriation<sup>94</sup> in which they focused on cooperative, project-based and interdisciplinary work-incorporating the technology when needed among other tools. (Adoption stages of ICT reported by Robertson et al.2007, in the literature review)

### 3.4.5 ICT Challenges and Difficulties

Difficulties constitute a major obstacle towards the implementation of ICT in ELT classes in Ain Temouchent secondary schools. The following table (3.11) presents data results of technology difficulties in schools and contains items of measurement. “yes, a lot” and “partially” go together and express important difficulty while “a little” and “No, not at all” express less difficulty or no difficulty at all.

<b>ICT Challenges and difficulties in Ain Temouchent secondary schools</b>	<b>Yes, a lot</b>	<b>Partially</b>	<b>A little</b>	<b>No, not at all</b>
-Insufficient number of computers / laptops.	67,16 %	7,46 %	5,97 %	2,98 %
-School computers out of date and / or needing repair	37,31 %	13,40 %	2,98 %	16,41 %
-Lack of adequate ICT skills of teachers	44,77 %	10,44 %	16,41 %	5,97 %
-Insufficient or no technical assistance provided for teachers when a computer freezes or break down in classes	56,71 %	10,44 %	5,97 %	5,97 %
-Too difficult to integrate ICT use into the curriculum.	22,38 %	20,89 %	22,38 %	11,94 %
-Lack of ICT-based pedagogical models to follow.	44,77 %	17,91 %	7,46 %	2,98 %
- School space organization (classroom size and furniture, etc.)	50,74 %	16,41 %	1,49 %	7,46 %

**Table 3.11** ICT Challenges and Difficulties in Secondary Schools

When analyzing the differences related to the computers and secondary schools, it was found that 67, 16 % of the participants complained of an insufficient number of computers in their secondary schools while 7 % reported there was a partial insufficiency. More than 30% of complained that these computers were either very old or needing repair. Beside these barriers, there were others related room size which may or may not allow space for technological tools to be incorporated. 50,74% of the participants asserted that room size was not adequate for technology use and only 16,41% considered it as a partial problem while a few did not regard it as such.

<sup>94</sup> Appropriation: step N° 4 Robertson, Fluck and Webb (2007) in their *Tentative Theory* of technology integration (chapter of Review of Literature)

There were other challenges related to the language teachers such as training. For instance, 44,77% of respondents had a lack of adequate ICT skills and that is a major challenge towards the implementation of technology in ELT. In spite of this, teachers who ventured in using ICT were not likely to receive technical support. 56,71 % of the teachers confirmed being in embarrassing situations in front of their pupils when the computer freezes or breaks down in the classroom. As the Algerian secondary schools had no lab technician or ICT assistant, 10% partially complained of lack of assistance while a minority says this had little impact on technology incorporation.

The curriculum is the core of the teaching process. If ICT was not integrated in it, it would not be possible to plan technology based lesson for pupils. 22, 38 % of informants admitted finding considerable difficulty in integrating technology within the current curriculum whereas 20, 89% of them expressed less difficulty in doing so. 22, 38% were more capable of adapting technology in lesson planning and 11,94% found no obstacle to do so. Pedagogically, 44,77% of the participants faced an enormous challenge to cope with the curriculum requirements because there was no ICT-based pedagogical model to follow. Despite the fact that the curriculum incited teachers to integrate ICT, no specified procedure was put forward for teachers but less than 20% considered this partially refraining them from implementing technology.

### **3.5 The Pupils' Questionnaire**

Quite a large number of pupils are surveyed in the secondary schools of Ain Temouchent about the use of ICT in English language learning. There was a total of 392 participants who study in ten (10) secondary schools. This sample population was administered a questionnaire to check their perceptions of ICT use in English language learning.

After piloting the pupils' questionnaire, a number of changes had been made on it. There were modifications like the rewording of some questions, altering some vocabulary items to provide preciseness, coherence and more clarity to the questions. The order of questions was also reviewed and put to go gradually from the general, to the more specific items.

Although the type of questions was structured or closed-ended, the participants were given various choices to select from so as to cover the maximum of options and the multiple preferences of technology integration like what is mentioned in questions: three (3), six (6), seven (7) and eight (8). In fact, most of the questions were made up close-end to avoid misleading the young participants.

### **3.5.1 The Objective of the Pupils' Questionnaire**

The purpose behind distributing this questionnaire to all grades/levels of pupils with different streams is to check the use of ICT within a wide range of population. A questionnaire is used for surveying a whole class or even more a group of classes i.e. quite a large population. It is usually possible to get a high response rate if a whole class participates (Griffie, 2012). In this research, many classes throughout the secondary schools of Ain Temouchent had been surveyed and the response rate was considerable: 392 participants filled in the questionnaire. According to Schochet (2008)<sup>95</sup>, when administering a questionnaire in the classroom, it requires having a large number of classes to conduct the research. The questionnaire is bilingual: English and Arabic language. In fact, the Arabic version of the questionnaire made it accessible to a large population of pupils. The topic surveyed through the questionnaire is of interest to the pupils and all questionnaire items were completed. The objective of the questionnaire was mainly to depict participants' ICT readiness. Some other purposes are listed follow:

- ✓ To inquire whether they are already using ICT in learning English in their classrooms.
- ✓ To check if the pupils are accustomed to the use of Communication Technologies in their social milieu.
- ✓ To find out what they use the new media as computers and mobile phones for.
- ✓ To see whether they are ready to learn English language with ICT in classes.
- ✓ To cover both the teaching and the learning aspect in the topic of research.

### **3.5.2 Data Analysis of Pupils' Questionnaire**

The structured questionnaire tended to reveal if they were socially influenced to adopt technology tools in their English language learning, either by the parents, relative or friends. The questionnaire aims to collect information related to ICT integration in classrooms, training, the different technology uses and the difficulties faced. Finally, pupils were solicited to give their views on the utility of ICT in daily classroom learning.

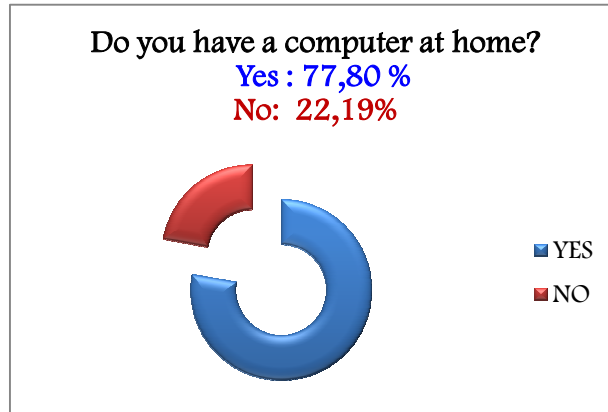
### **3.5.3 ICT In Pupils' Social Environment**

The first question the participants were asked was if they had a computer at home. 77,80% of the participants affirmed that they had a computer at home. This is a positive factor for pupils since the majority of them could learn through computer at home. Figure 3.10 illustrate computer possession for secondary school pupils.

---

<sup>95</sup> cited in Mertens D. M. (2010, p415) in: *Research and Evaluation in Education and Psychology, Integrating Diversity with Quantitative, Qualitative, and Mixed Methods*, 3<sup>rd</sup> edition. Gallaudet University

In question two (2), the participants were asked whether their parents encouraged them to use modern technology tools, like the computer, for learning purposes. 60,71% of the participants replied they “sometimes” did. It is quite encouraging in comparison with the percentage of those who were not encouraged at all which is 13, 77%.



**Figure 3.10** The Participants Computer Possession

The large majority of participants reported they were living in a milieu where their family members especially the brothers (44, 89%), sisters (50%) and friends (52, 80%) used mostly the computer for learning purposes. Unexpectedly, the parents used the computer less than others.

### 3.5.4 ICT Training and Manipulation

When replying to question four (4) about studying informatics (ICT as a separate subject) in school, 80% of the participants confirmed that they are taught this subject; but the studying periods were different, ranging from three (3) months up to seven (7) years. 65, 81% of the participants had good command of computer and 30% had little control of this device. In question six (6) of the questionnaire, the participants were asked to tick on technology applications which they were able to perform using a laptop, a mobile or a tablet. Table 3.12 below indicates pupils studying periods:

Period of studying	3 months	6 months	1 year	2 years	3 years	4 years	5 years	6 years	7 years
Number of pupils	15	5	159	22	11	28	46	4	1

**Table 3.12** Studying ICT as a Separate Subject

Some of the applications were related to education and some others to leisure and entertainment. The objective was to see which applications they employed for learning.



Unlike the population of teachers, these participants had different use of the computer, internet, the mobile and the electronic tablet. They have been taught ICT as a separate subject for at least one school year. Table 3.13 below illustrates these findings.

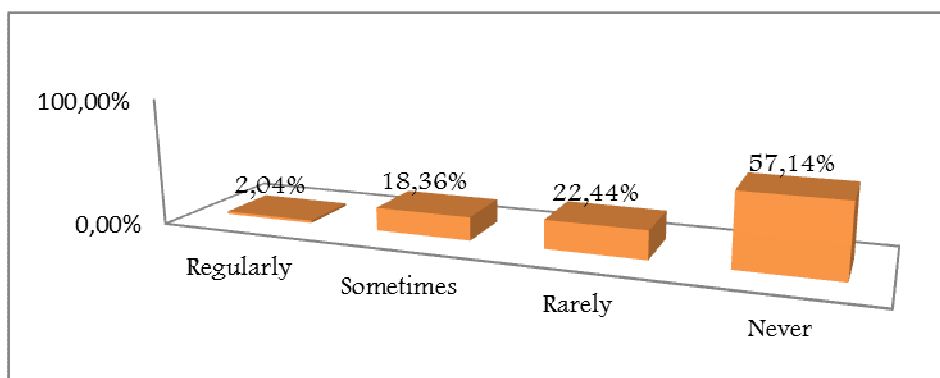
Type of Application	Technological Application	Participants	Percentage of use
<i>Technology related to Education &amp; Learning</i>	Microsoft Word	282	71,93 %
	Microsoft Excel	232	59,18 %
	Microsoft Power point	119	30,35 %
	Downloading lessons	257	65,56 %
	Sending and receiving emails	200	50,02 %
	Google search	332	84,69 %
<i>Related to Leisure and Entertainment</i>	Texting in English(through SMS)	126	32,14 %
	Drawing pictures or cards	198	50,51 %
	Taking photos and videos	300	76,53 %
	Playing Games	314	80,10 %
	Chatting with Facebook or Skype	273	69,64 %
	Listening to music	356	90,81 %

**Table 3.13** Participants’ Technological Applications

The pupils acquired quite good level of manipulation in all applications except for the use of PowerPoint software and texting in English language. They mastered very well the use of music software, those of playing games, taking pictures or recording videos.

### 3.5.5 ICT in Classroom Learning

After asking them about the technology applications that they master, the participants were required in question seven (7) to report the frequency of introducing ICT in the classroom by their ELT teacher. Figure 3.11 below illustrates the data collected from the pupils. The objective was to describe the extent to which technology is creating an interactive environment.

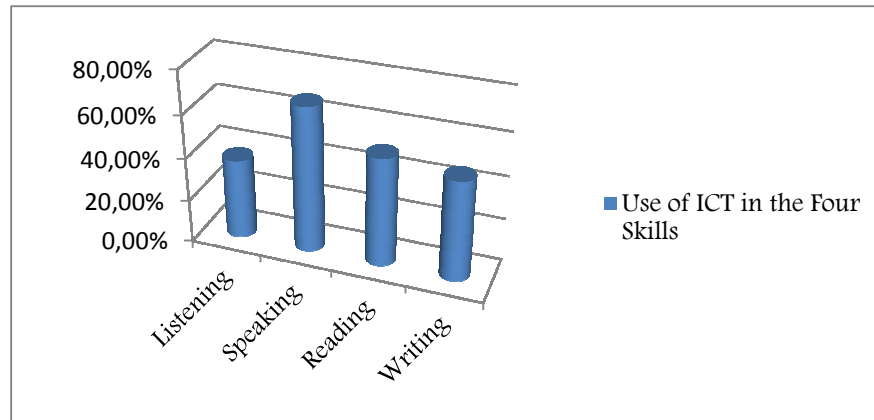


**Figure 3.11** The Frequency of ICT Integration in the ELT Classroom

More than half of the participants (57, 14%) reported that they had never been taught English language through technology tools in the classroom. 20 % of reported that their English teacher

“sometimes” introduced technology in class. While 22,44 % were “rarely” being exposed to technology-based lessons in an ELT classroom. Only 2,04%, however, confirmed they were taught through the integration of some technology tool on a regular basis.

The results reveal the irregularity and the rarity of ICT integration. The most significant percentage of integration was centered in the “sometimes” frequency. After being asked about the ICT tools utility in general, the participants were asked in question (9) if that had improved their English language learning skills. Figure 3.12 below represents the results.



**Figure 3.12** Use of ICT in Learning the Four Skills

It was noticed that most of the participants responded more positively to the use of ICT in the speaking skill than in other skills by 67, 34%. Reading came in the second place by 50,25 %, then writing with 46,42% in term of use and finally, in the last step, was the listening skill with 36,98%. Pupils’ ability to read, write, listen and speak prepares them to be more productive in society in the future.

In the same context, question ten (10) of the questionnaire focused on the learning advantages which ICT could help the participants with. They were given a frequency table to complete using: “a lot”, “somehow”, “never” and “don’t know”. The participants should rate the extent to which technology integration was beneficial to their English language learning.

When questioned whether technology help the participants to improve their cognitive skills, learn in an autonomous way and solve problems related to English language learning i.e. to think in a critical way, 56,88% of them reported that ICT helped them to store information and retrieve it

easily. Furthermore, 40,05 % of them considered it as somehow helpful while doing revision and practicing the English language at home while 31,12% somehow felt it assisted them in classroom group work when doing projects.

Unlike other pedagogical tools, 55,35 % of the pupils reported that technology enabled them to check the studied information at any time they wanted to. 60,96 % of them also said that ICT helped them to learn more; and 37,24 % thought it somehow assisted them in improving their grades in tests and examinations. The learning statements were rated in the following table 3.14.

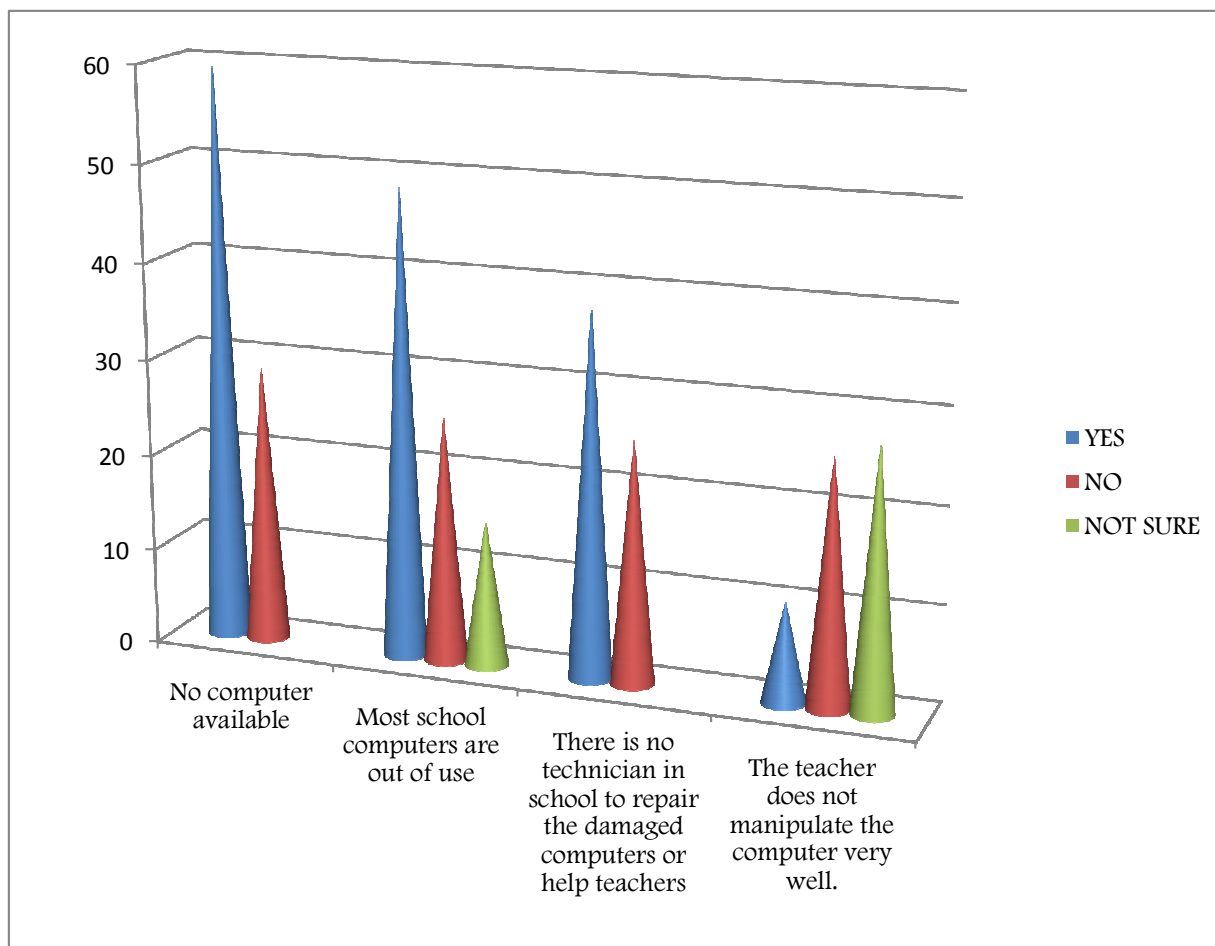
Statements	A lot	Somehow	Never	Don't Know
- Store and retrieve information easily?	56,88 %	30,35 %	3,31 %	6,12 %
- Check information at any time at home?	55,35 %	27,29 %	7,14 %	5,35 %
- Review exercises and practice more at home?	37,24 %	40,05 %	14,03 %	3,31 %
-Work collaboratively in classroom on groups projects.	32,39 %	31,12 %	19,89 %	9,43 %
-Learn more?	60,96 %	27,80 %	2,80 %	2,80 %
-Achieve better marks?	37,75 %	37,24 %	9,43 %	10,45%
-Think critically about your learning?	18,62 %	29,08 %	19,13 %	22,44%
-Learn independently?	39,03 %	34,43 %	8,67 %	11,22%
-Solve problems related to English learning?	44,89 %	28,82 %	9,18 %	8,16 %
-To cope with real life situations?	46,42 %	33,16 %	5,10 %	9,18 %

**Table 3.14** The Use of Technology to improve the Learning Process

30% believe that ICT could improve their critical thinking about learning. Less than 30%, did not share this view. But 40 % seemed to agree that technology integration assisted autonomous learning and a slightly higher percentage (44, 89%) admitted it helped them solve language learning difficulties. The same number of participants thought ICT also guided them to cope with real life situations similar to the ones learnt in the classroom.

### 3.5.6 Difficulties of Using ICT in School

The participants were required to state, in question eleven (11), the difficulties encountered in classrooms when using ICT with their English language teacher. Those difficulties are either related to equipment availability and to technical problems. Figure 3.13 below sums up the main findings of technology integration challenges.



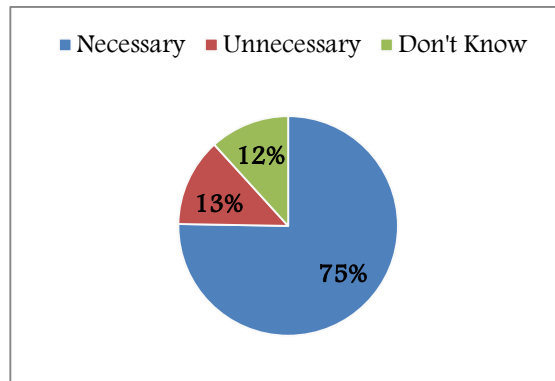
**Figure 3.13** ICT Integration Difficulties Encountered in Schools

Concerning the difficulties faced in classroom learning, 60 % of the participants complained of computer unavailability compared to 29,08% who did not have such a problem. Half of those who had computers in their secondary school complained of their bad condition: they are either damaged or not upgraded. Normally, there must be a technician in school to repair the technological equipment but 38,52 % revealed that there was not any.

Another major obstacle for ICT integration was ICT competency of the teacher. 10,45 % said their teacher did not have this competence while 25,76 % said that s/he did. 27,29 % were not sure of their teacher ICT skills.

### 3.5.7 The Learners' Opinion

At last, the participants were invited in question twelve (12) to express their opinion about integrating ICT in classroom learning. The purpose was to check if they were motivated about technology integration in their classroom learning. Figure 3.14 below shows that 70% of the participants believed in the necessity of ICT in EFL in the classroom.



**Figure 3.14** ICT Necessity

### 3.6 Classroom Observation

Classroom observation was the second instrument used to observe participants while teaching in their EFL learners in Ain Temouchent secondary schools. The data from the classroom observation was qualitative and analysed separately before being cross-checked with quantitative data from the teachers' and pupils' questionnaires. Observation should describe the teaching process and reports deficiencies.

“Observation is one of two common ways of getting information which can help us make sense of educational situation, gauge the effectiveness of educational practices, and plan attempts for improvements.”

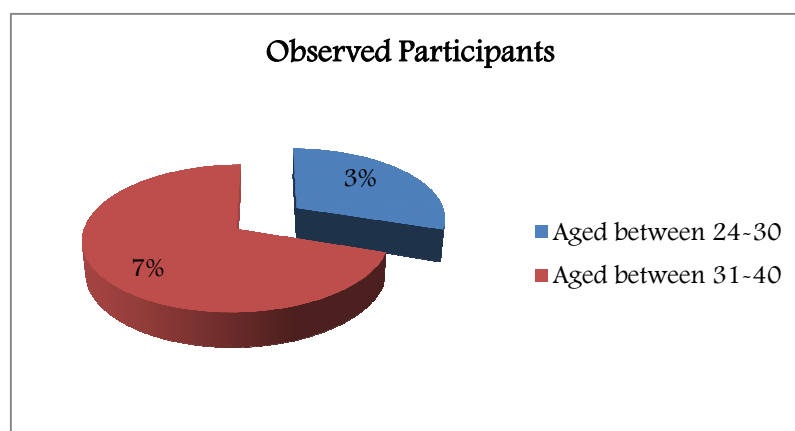
(Malderez, 2003:179)

A checklist is put forward to ensure a better observation for observers. There are thirteen (13) structured items to fill in when observing teachers in the classroom. Creswell (2009) defined a qualitative research approach as the one in which the researcher usually acquired knowledge assertions on the basis of constructivist perspectives i.e., the various outcomes of individual experiences, and socially constructed meanings, with a purpose to formulate a theory or pattern of investigation such as case studies. The researcher assembled open-ended, initial data to work out themes. The qualitative data collected in the present study were descriptive and organized into categories and put into tables to quantify them and compare their findings with data from other tools, mainly from the questionnaires.

### 3.6.1 General Conditions of Classroom Observation

Thirteen (13) lessons were observed but only 10 observed lessons were taken into consideration. Three(3) other lessons were left out because their observation grids were not filled appropriately by the observers since no ICT device was being integrated. The chosen lessons were thought of as the most representative of Ain Temouchent schools as they consisted of trainees and certified teachers, new and old ones. There were two age ranges: one between [24-30 and another one between [31-40], as shown in figure 3.15 below.

Three (3) teachers were from the young age range of [24-30]; they had an average of three (3) years of teaching experience and seven (7) others were from the middle-aged range of [31-40]; they had been working from two (2) to six (6) years.



**Figure 3.15** The Observed Participants

### 3.6.2 The Observed Participants

Lessons were observed according to a schedule previously set, as shown in the methodology chapter. Data were gathered using carefully designed and focused observations schedules (Malderez, 2003). Each teacher participant was asked for his approval before being observed in his/her classroom. Consenting observers would often be given general information about the observation beforehand (Malderez, *ibid*).

Each lesson was described and analyzed separately. Cohen et al.(2007) stated that a good way to analyze qualitative data was to deal with each individual separately to keep the coherence and integrity of his/her responses then, the analysis moves on to the next individual. Despite of this fact, a general description of the common features of all observed lessons following the objectives was provided. The profile of the teacher, the group taught, the lesson duration and the schools where the lessons were presented. There was an emphasis on the technology tool integrated, in

which lesson step and its main purpose, the type of teaching adopted by the teacher, the ICT integration objectives and the difficulties encountered.

The gender factor was not focused upon as the female teachers outnumbered the males. (8 versus 2) However, teaching experience and experience using technology were considered as important in the analysis. The structured observation was part of the teaching process; the chosen classes are selected to be observed on the basis of the usual school attendance schedule of model courses presentations. Observations of Lessons with no ICT tool integration were not reported in this study. A summary of a sample observed Lesson is provided in Appendix F.

### 3.6.3. Classroom Observation Data Analysis

The data from lesson observations were quantified and categorized into sections to facilitate examination and to make the comparison easier with the quantitative data from the questionnaire. This is in accordance with what Meyer (2001)<sup>96</sup> reported that observation output was stronger when combined with other research methods.

#### 3.6.3.1 The Integrated Technology Tools in Lessons

ICT can be integrated in ELT through the use of a variety of instruments. However, in the observed lessons in Ain Temouchent secondary schools, the main tools used are the computer or laptop and a data-show, either audio or video or PowerPoint presentations. The observers remarked that most of the tools used in the observed classes are 80% laptops connected to a data-show. The table below (3.15) gives the rate of ICT integration for each lesson step during observation.

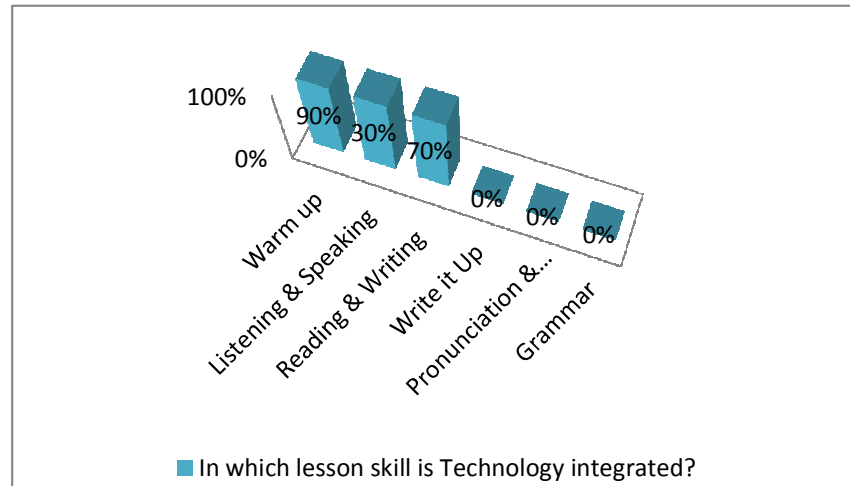
Pre-lesson phase Only	Pre-lesson and During the lesson	Post-lesson phase only	In all lesson steps
6: 60%	2: 20%	0 %	2: 20%

**Table 3.15** ICT Integration in Lesson Steps

After analyzing the observation form of each of the lessons, it was found out that 60% of the teachers incorporated the data-show in the pre-lesson phase while 20 % of them introduced ICT both in the pre-lesson and during the lesson phase. The rest of the 20% integrated it in all of the lesson steps.

<sup>96</sup> Cited in Lamtara S., (2014) Teachers' ICT Practices: A case Study of a Moroccan EFL Teacher, p402, Arab World English Journal

According to the observed participants, nearly all teachers incorporate ICT in the warm up step. Seventy percent (70%) of the observed teachers integrate ICT in the reading and writing lessons plans and the other thirty percent (30%) in the lessons of listening and speaking. It was noticed that teachers of English avoid adopting technology in the lessons of Write it Up (Writing), spelling and pronunciation or grammar. This is illustrated in figure 3.16 below.



**Figure 3.16** ICT in the Different Lesson Steps

### 3.6.3.2 The Teaching Content and Curriculum Objectives

The shift in the teaching and learning environment from the traditional teacher-centered to the learner-centered method turns the pupil from a receiver of information to an active participant to fulfill his own learning needs in an authentic situation(Adams and Burns ,1999; and Muir-Herzig, 2004)<sup>97</sup>.

In 50% of the observed lessons, the content was appealing to students needs and had a high level of authenticity in 90% of the lessons, since the videos and the pictures used were more like simulations of real life problems or situations. Four lessons, however, were not very much appealing to pupils' expectations. The method of teaching in the observed lessons was teacher-centered in half of the lessons, 40% of the other lessons were learner-centered. It was noticed that in one of the observed classes the teacher used both methods. Everton & Weinstein (2006)<sup>98</sup> bring for consideration that it was the teacher duty to develop a smooth deliverance of curriculum

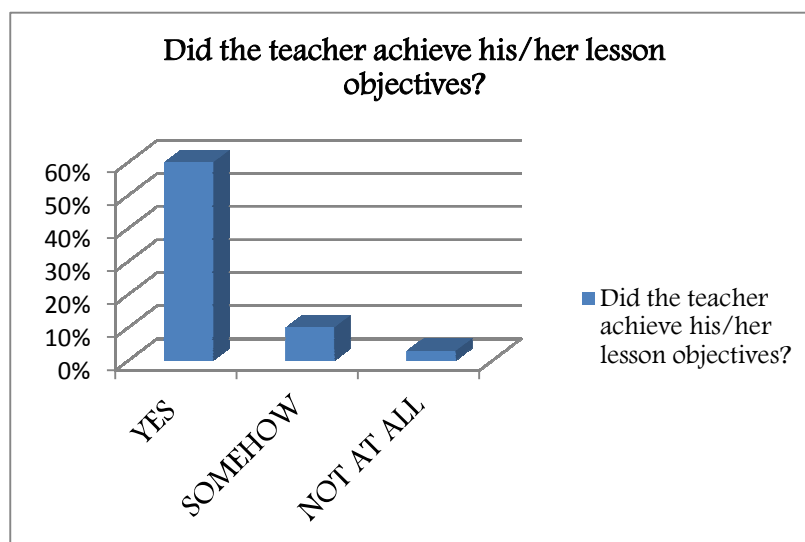
<sup>97</sup> as cited in Alsied and Pathan(2013),*The Use of Computer Technology in EFL classrooms: Advantages and Implications*.Ij-ELTS: International Journal of English Language & Translation Studies.

<sup>98</sup> Cited in Mutlaq Al-zube F. A. (2013), *The Difference between the Learner-centred Approach and the Teacher-centred Approach in Teaching English as a Foreign Language*, English Language Department, Majmaah University.



content that takes into consideration the teacher centered and the learner centered types of instruction.

All the lessons presented were curriculum-based, planned by the teacher according to the national syllabus directions of the Algerian Ministry of Education according to the Algerian “Programme d’Accompagnement” (2006-2011)<sup>99</sup>.The observer asserted that in 40% of the lessons, the data-show use had served the lessons objectives; to a lesser degree in 30% of the cases, it somehow did while in another 30% the observer reported that it did not serve any objective. In most lessons, 60 % of the observed teachers achieved their lesson objectives through the use of technology while 30% of them did not. One teacher somehow achieved his lesson goals through ICT. Figure3.17 below illustrates these findings.



**Figure 3.17** ICT and Learning Objectives

The result of classroom observation indicated that the majority of observed teachers i.e. 90% of them faced no difficulty in incorporating laptop and data-show into the classroom which was not the case with the questionnaire and the interview findings.

### 3.6.3.3 Observation Findings and Remarks

All participants used one common tool which was the data-show attached to a laptop computer. 90 % of the teachers faced no technical problems and encountered no difficulties using the computer of data-show but it was not known if they faced difficulties using other technological like software, tablets, mobile or others tools which they did not use during the observation period.

The lesson content presented to different classes was appropriate to the national curriculum directions at this level. In 60 % of the observed lessons, the technology tools were integrated

<sup>99</sup> English Language Curriculum of Secondary Education of 2006-2011.

mainly in the pre-lesson phase, especially the warm up; and a few participants integrated them in all lesson steps. The same percentage of participants knew how to adapt technology to serve pedagogical objectives.

Half of the participants incorporated ICT within teacher-centred method of teaching. According to a study carried out by Jeanne (2009) and Doyle (2008)<sup>100</sup>, in the teacher centered approach the teacher was usually in complete control of the classroom and the activities. In this case, technology substituted the usual support: the Black or white board. It was found out that the number of teachers who were still adopting traditional way of teaching while using technology in classrooms was significant according to classroom observation. However, 40% of them adapted their type of teaching according to the learner centered method while integrating ICT. This was quite a considerable rate that could contribute to construct knowledge among learners as Prince and Felder (2006)<sup>101</sup> advised that EFL teachers needed to quit traditional lecturing and work more on improving pupils' cognitive skills through inductive learning based on learner centered approach. When ICT was introduced in the pre-lesson step, it did not really empower or change the existing teaching method at this level of integration. 70 % of the participants used technology to teach the reading skill while 30 % used it to teach the listening skill. There was no use of ICT in Grammar, pronunciation or in writing lessons. In the reading and writing lesson, the observer could not know whether the writing part would be done through the use of any technology tool or not.

In most of the observed lessons, the technology tool was integrated in listening and speaking. In fact, the teacher made the pupils listen to a text but there was not any technology-based activities related to the speaking skill. In the reading and writing lessons, after the reading phase, the teacher did not reach the stage of writing except for lesson five (5) in which pupils were asked in the second activity to describe video games in a short piece of writing and in lesson ten (10) in which pupils were requested to sort out, from a given list, the appropriate safety measures to follow before, during and after an earthquake, according to the previously viewed video.

---

<sup>100</sup> Cited in the research of Mutlaq Al-zube (2013), *The difference between the Learner-centred Approach and the Teacher-centred Approach in Teaching English as a Foreign Language*, English Language Department, Majmaah University.

<sup>101</sup> Cited in Mehdinezhad D.,(2011)*Teachers' Instructional beliefs about Student-centred Pedagogy*, International Journal on New trends in Education and their Implications.

### 3.7 Interview Making

The interview was the second instrument in this research. Unlike the teachers' questionnaire, the interview was used to collect qualitative data from a sample population of teachers.

#### 3.7.1 The Participants Profile

The population chosen for interview was sixteen (16) participants. They were all EFL teachers at the level of Ain Temouchent secondary schools. They were grouped according to three age ranges. There was one (1) participant in the range between [25-30], eight (8) participants in the range between [31-40] and seven (7) in the range of [41-60], as presented in table 3.16 below.

The Teachers Interviewed			
Age Range	25-30	31-40	41-60
Participants	1	8	7

**Table 3.16** The Interviewed Teachers

As far as the participants' gender was concerned, there was no difference in terms of use so the emphasis was put age factor because it revealed the impact of experience on ICT adoption.

#### 3.7.2 Description of the Interview

After piloting the interview on five participants, some questions were changed and arranged differently. Some corrections were made on the interview to make it more consistent and reliable. Question two (2) among others was reordered to suit the research objective and the order of ideas. Familiarity with ICT should precede training question. Question twelve (12) was made more open-ended and probes were added to make it more flexible with the participants' different responses. When interviewing the participants, this question was split up into three (3) short direct questions to facilitate understanding because when piloting the interview some teachers got confused and misled. As a result, they gave answers unrelated to the core of the question.

Twenty (20) teachers were asked to be interviewed. They were selected at random but only twelve (16) of them accepted to be interviewed. English language was used in interviewing. Mathers, Fox and Hunn (2002) point out that location and timing needed to be appropriate for the interviewee; and s/he was assured confidentiality. The interview carried out face-to-face and the participants answered a set of questions of the semi-structured type but there were more or less some open-ended questions. The emphasis was on obtaining information based on the researched topic (Flick U., 1998)<sup>102</sup>.

---

<sup>102</sup> quoted in Mc Laughlin B.( 2003), *Types of Interviews*, Fundamentals of Research.

Before starting to interview, the respondents were reminded of the purpose of the study, the time and the subject to be discussed. The permission for recording was requested from them (Laforest, 2009:3). In the present study, only six participants gave verbal consent to be recorded during the interview. They were recorded with a mobile phone device with an MP3 audio format<sup>103</sup>. For those who did not approve of recording, notes were taken instead,(one sample interview script is supplied in Appendix H<sup>104</sup>).

The interview aims was to explore whether the participants could innovate their ways or methods of teaching through ICT integration. The questions which participants were asked reflect the use of technology tools in their classes with the purpose of innovating in ELT.

### **3.7.3 Analysing the Interview**

In order to ensure more validity for data of the interview, strategies such as skillful questioning and active interpretation were adopted as it was put forward by Griffiee (Griffiee, 2012:161-164). Furthermore, Block (2000)<sup>105</sup> pointed out that interview data collection were merely raw information that did not mean much unless analyzed explicitly. To analyze the qualitative data of the interview, there were several steps to go through but it was ideal if the recordings were transcribed and re-read many times and the same was done for the notes taken when interviewing. The main lines or themes were written down as they appear (Laforest, 2009:5).In this interview, the recordings were listened to many times before the scripts were written down. The scripts were carefully read to avoid ambiguities.

“The process of analyzing text (or images) in qualitative research begins when you code the data. Coding is the process of segmenting and labeling text to form descriptions and broad themes in the data.”

(Creswell, 2012:243)

After that, the scripts were put into categories and sections according to the research purpose. The interview main objective was to collect qualitative data concerning technology integration in EFL classes. A semi-structured interview is best applied when you will not get more than one chance to interview someone. It provides a clear set of instructions for interviews and can provide reliable comparable qualitative data (Cohen, 2007). In this study, participants are surveyed on the

---

<sup>103</sup> The recorded interviews are copied on a CD Rom accompanying this dissertation.

<sup>104</sup> Due to the large volume of the 16 interview scripts, only one script is provided as a sample.

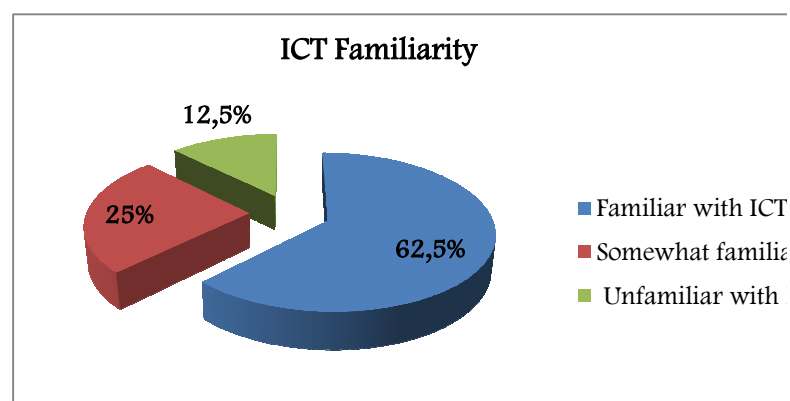
<sup>105</sup> as cited in Griffiee T. D. (2012:161), *An Introduction to Second Language Research Methods, Design & Data.*, TESL-EJ Publications

use of technology in secondary school classes as a one-time task to be carried out through interviewing, observing and questioning. It would not be natural to replicate it since the study has a cross-sectional aspect. This was the case study of ICT use at a given period of time. Three (3) variables were dealt with in the interview analysis: training, teaching experience and experience using ICT with regard to technology integration.

### 3.7.3.1 Familiarity with ICT and Teaching Experience

The purpose of the introductory question of the interview was to define the participants' teaching experience and saw the extent to which they were familiar with technology. It was found out that 43,75% of the interviewed population had a teaching experience between one to ten (1-10) years while 25% had between eleven to twenty years (11-20) and the third category had between twenty-one to thirty-two (21-32) years. The interview population was divided into three (3) age categories: the [25-30] category had one participant; the [31-40] has eight (8). It represented 50% of the total population and the [41-60] has seven (7) participants.

During the interview, 62,5% of the total participants informed the interviewer that they were familiar with the use of modern technology tools like computers/laptops manipulation, data-show, smartphones, tablets, digital cameras etc. 25% of the interviewees said they were "somewhat" used to these instruments while two others did not know how to deal with the technology tools. The degree of ICT familiarity is represented in figure 3.18 below:



**Figure 3.18** ICT Familiarity

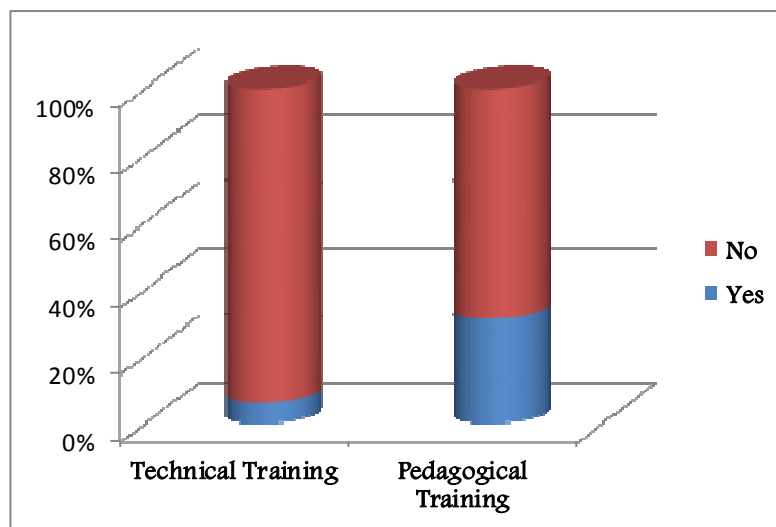
It was found out that in the first category of [1-10] years' experience, that 37,5% of the total interviewed participants were very familiar with ICT use and it was the highest percentage. In the second category of [11-20], 18,75% of the participants and in the third category of [21-32] 25%. It was concluded that young teachers who were practicing less than 10 years are more familiar with

ICT than others. Still, teachers in the third category came in the second place. Those who manipulate the technology tools well were more likely to integrate them in the classroom. In spite of the fact that they did not reach 50%, the new generation of teachers seemed to be more advantageous in this case.

### 3.7.3.2 Training and ICT Integration

Due to the importance of training, the participants were asked in the interview about the type of training they received, the period and whether they had any degree so that to get the maximum of data to analyse. The lack of training and unfamiliarity with the constant changing technology instruments will affect teachers' confidence in the classroom, therefore they needed time to learn the skills, reflect on newly acquired knowledge and think carefully about effective ways of integrating ICT to enhance pupil learning, in collaboration with colleagues (Leask M, 2001:69).

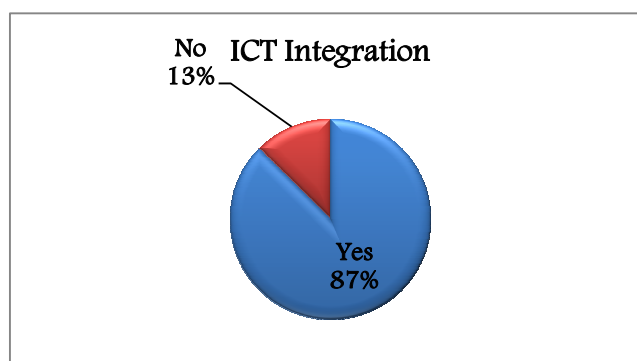
Almost all interviewed participants, i.e. 93,75%, claimed that they had not received any technical training, except one participant out of sixteen (16). As far as the pedagogical training, about 68,75% of the participants reported that they had received no training on how to incorporate ICT into ELT classrooms but 31,25% confirmed they had some pedagogy training a number of times, mainly during seminars but asserted it was insufficient. Figure below 3.19 illustrates the degree of participants' training.



**Figure3.19** Technical and Pedagogical ICT Training

The only participant who had been technically trained for six (6) months belongs to the third age category of [41-60], and he reported that he was trained for a period of six months but without getting a degree. He actually integrated ICT in his lesson planning. There were also five (5) other participants who were pedagogically trained and they all integrated technology in their classroom

teaching which represented 100%. Accordingly, the pedagogically trained teachers were more likely to implement ICT in their classes than others. The general result of ICT integration was up to 87 % among all interviewed participants as shown in the figure 3.20 below.



**Figure 3.20** ICT Integration

This the high rate of integration illustrated in the figure above is put into question as the inetgration was not on a regular basis as shown in the next figure 3.21 *ICT in EFL Classroom Teaching*, where frequency is involved. Beside this, 93,75% of the participants reported that they had no technical training which let implies that many teachers did integrate technology in classes in spite of their lack of training.

### 3.7.3.3 ICT in Classroom Teaching

Before being implemented in the classroom ICT must first be integrated in the national curriculum of English language teaching in secondary education. The participants surveyed on this matter in question seventeen (17) were asked whether they knew that technology is integrated in the curriculum. Unexpectedly, 43,75% did not know that technology was already integrated. 25%, however, were aware of its integration and confirmed the need to implement it in lesson planning. The results reveal that 70% to 75% of the interviewed participants used ICT in their classes every now and then<sup>106</sup> out of their free will, as a teaching support regardless curriculum considerations.

In fact, technology is actually integrated in the curriculum of all the three levels of secondary education; but it was up to the language teachers to implement it in classroom teaching and adapted the workbook according to the lesson objectives and pupils needs. An extract from the original version of the curriculum is given below and is followed by an English translation:

---

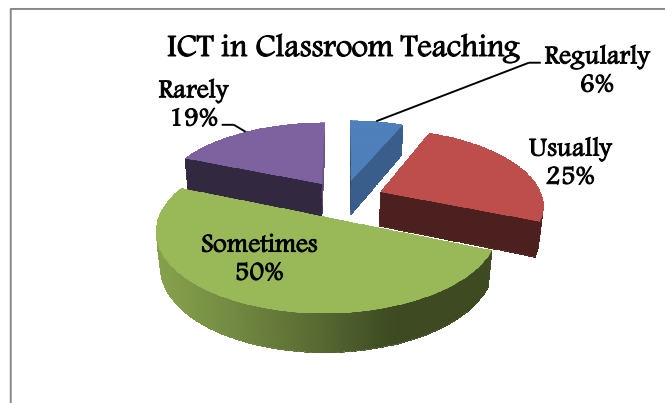
<sup>106</sup> *every now and then* : from time to time or occasionally

“A l’issue de la 3<sup>e</sup> AS, l’élève aura déjà été familiarisé au fonctionnement de l’outil informatique et aura développé certaines compétences d’ordre technologique qui lui auront permis d’intégrer les TICE dans les activités de communication de la classe de langue. Ces pré-requis en TICE lui permettront de travailler dans un cadre pédagogique motivant. Les TICE devront être utilisées comme moyens/outils de communication, de documentation, de découverte, de simulation de rôles mais en aucun cas se substituer aux activités ou séquences d’apprentissage.”

*Programme d’Anglais Troisième Année Langue Etrangere (2006:10)*

“When reaching the 3<sup>rd</sup> year level, the pupil will have been familiar with the ICT tools and would have developed sufficient competence to able to integrate technology in communication activities in a language classroom. These ICT pre-requisite will allow the pupil to work in a motivating class environment. Technologies should be used as means or tools of communication, documentation, simulation of roles but they should in no way be substitutes to the learning sequence activities.”<sup>107</sup>

The frequency of ICT integration in classroom is important in teaching. The interview results show that 50% of the participants “sometimes” incorporated technology in ELT classes. 25% “usually” integrated in classrooms while 19% of the participants “rarely” did. It is noticed that only one (1) participant “regularly” incorporated technology. The frequency of ICT integration is represented in figure 3.21 below according to the interview results.



**Figure3.21** ICT in EFL Classroom Teaching

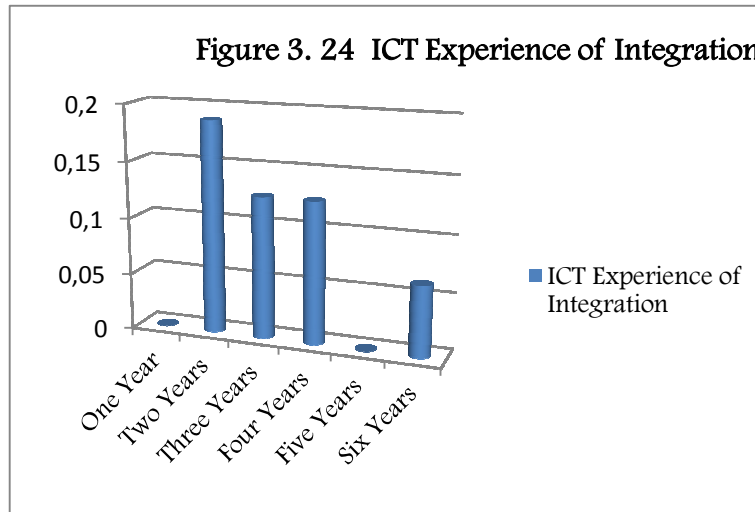
It is worth mentioning that although there is a high rate of ICT integration (figure3.20), there was also a significant low rate of frequency (figure 3.21). This result indicated that the teachers were not integrating ICT regularly.

<sup>107</sup> of our own translation.



### 3.7.3.4 Experience of ICT Integration

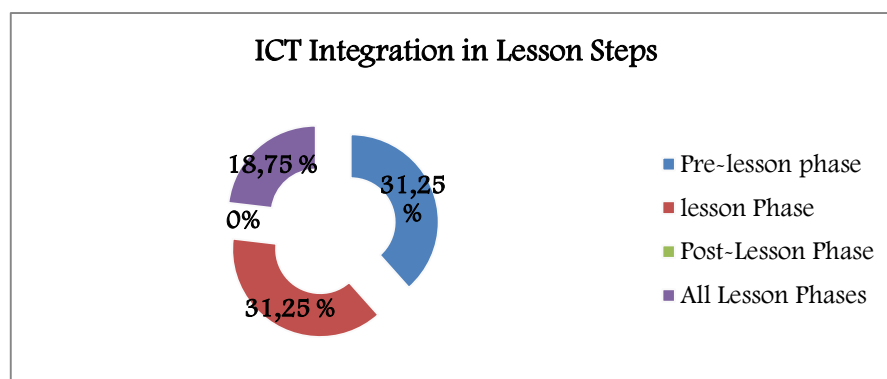
Leask (2001:68) asserts that if teachers had experience, purpose, or both, they would consider computers as fascinating, involving, or simply just useful. In effect, there were differences among participants in the number of years integrating ICT in teaching. These differences are represented in figure 3.22 below.



**Figure 3.22** ICT Experience of Integration

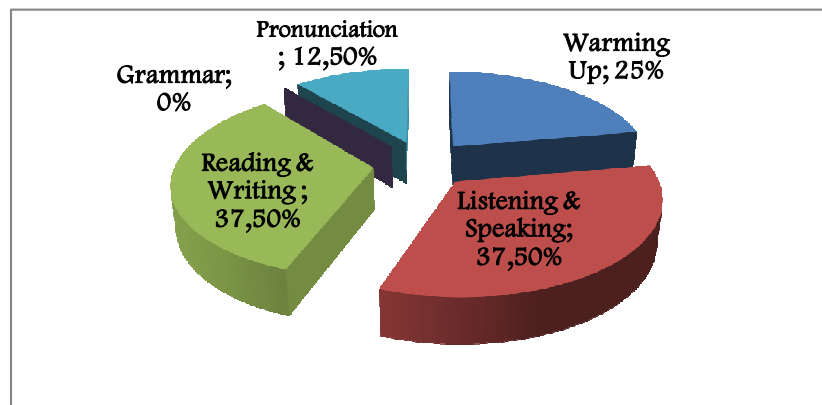
The findings showed that experience of ICT among the participants was quite controversial. It was found that 18,75% of them have been integrating it for a period of two years while there was no one in the one year category. 12,50% used it either for 3 or 4 years. 6,25 % have been using it for a period of six years. It is noticed that participants with long experience periods like 5 and 6 years, integrated technology less frequently in classrooms.

When the participants were asked in which lesson step they integrated technology in their lesson planning, 31,25 % of the participants incorporated it either in the pre-lesson or during the lesson phases and less than 20% of the participants integrated it in all lesson steps (pre-during-after).



**Figure 3.23** ICT Integration in Lesson Steps

The result revealed that no teacher integrated ICT in the post-lesson step and the majority used them in the warm up to anticipate the lesson content. In fact, the complete integration in lesson planning did not reach 20% as illustrated in the figure (3.23) *ICT Integration in Lesson Steps*, above. As this figure shows, the technological tools were integrated in the pre-lesson phase as often as in the lesson phase. It was perceived that the percentage of participants integrating technology tools such as the data show in Listening and Speaking was equal to the one of reading and writing sessions: 37,5% while 12,5% of them used technology in teaching pronunciation. No participant used ICT in teaching grammar lessons. Figure 3.24 below illustrates ICT integration in the four skills.



**Figure 3.24** ICT Integration in Teaching Skills

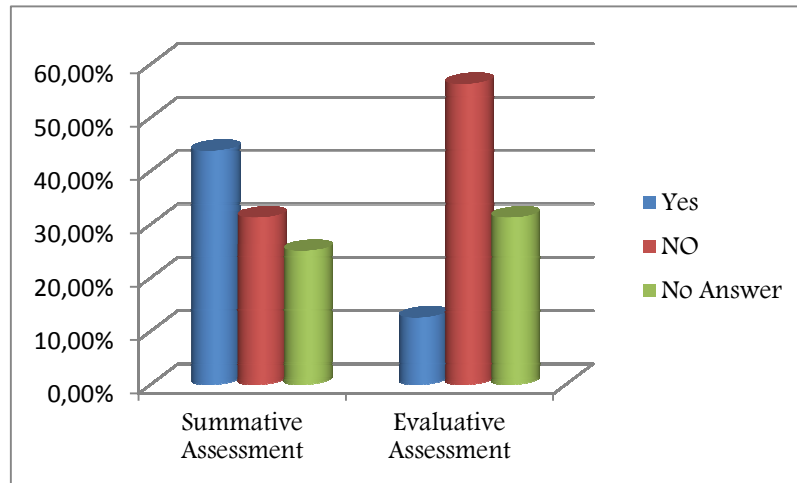
When answering question five (5) of the interview concerning the preparation of lessons and teaching material using a computer, 60, 5% of the interviewed participants indicated that they used computer for the English language lesson preparation and other teaching material like additional texts for practice, tests, extracts or exams. Only one participant did not use computer. Ten(10) interviewees were able to update their teaching material on the computer to adapt lessons for different objectives and learners' needs.

### **3.7.3.5 ICT in Assessment**

To assess pupils work using technology is not an easy task to do. E-assessment as Stannard and Basiel (2013) as cited in Motteram put it, is still in its experimental stage. Once the teachers get more self-confident in integrating ICT, they will use more technology tools and build a set of e-assessment design norms.

As Assessment is considered as the pillar of teaching and is used in learner centred teaching to depict learning problems and promote pupils understanding (Mutlaq, 2003). This study had included a section to reveal how it was carried out in Ain Temouchent schools. When interviewing

the participants, 43,75% of them stated that they used technology software mainly Microsoft Excel to calculate grades and do summative assessment while 31,25% of them preferred to use a calculator or the old manual methods instead. The following figure represents the extent to which ICT is used to assess pupils learning.



**Figure 3.25** ICT in Assessment

In order to evaluate pupils' work in the classroom, 12,5% of the participants reported that they usually used technology to test pupils' pronunciation, for example pupils were asked to supply the pronunciation of a cluster of homonyms and then, they were directed to check their answers through the use of a pronouncing dictionary installed in a mobile or a tablet. Some participants suggested asking pupils to search on the internet to find out certain information seen in class or the meaning of certain words in [www.dictionary.com](http://www.dictionary.com). Otherwise, pupils could be required to send their homework by e-mails to the teacher. These e-mails could take the forms of letters or written activities. Such activities were sampling assessment. In the same line of thought, within the learner-centered type of teaching pupils were evaluated through portfolios, performances, online-projects and research outputs (Good & Brophy, 2003)<sup>108</sup>. However, the interview result showed more than half the participants, 56,25%, did not use technology to evaluate their pupils. This could be due mainly to the lack of pedagogical training.

<sup>108</sup> Cited in Mutlaq Al-zube F. A. (2013), *The Difference between the Learner-centred Approach and the Teacher-centred Approach in Teaching English as a Foreign Language*, English Language Department, Majmaah University.

### 3.7.3.6 ICT Integration Difficulties

As teaching was a very demanding job, there were always constant challenges for teachers especially when incorporating a new technological tool in the classroom. As Earle (2002)<sup>109</sup> pointed out that integrating ICT in teaching was not limited to bringing hardware into the classroom, it had to be pedagogically needed and convenient to what was taught and lead to solve problems. In this research, the major difficulty to adopt ICT for teachers was training. Besides this, there are other difficulties that prevented them from implementing technology in their teaching. Question nine (9) of the interview explored those difficulties. Some concerned the equipment and the secondary schools conditions and others were related to the teachers' skills.

The types of data collected from the interview were qualitative; they were categorized, quantified and put into a table. Through counting the percentages, it would be possible to compare them with the quantitative data from the questionnaire. According to Creswell and Plano (2007), in a concurrent design, the analysis involves converting data from qualitative to quantitative or vice versa in order to integrate them and compare them i.e. qualitative themes are converted into scores. In this context, some of the common difficulties faced by participants when integrating technology in an EFL classroom are represented in table 3.17 below:

<b>Difficulties related to ICT integration in classrooms</b>	<b>Percentage (%)</b>
- The technology equipment is insufficient or unavailable	31,25 %
- Computers have viruses, don't work properly and may break down.	25 %
-In most schools the classrooms are not well fit (equipped) to use ICT	31,25 %
-There is no electricity in the room or there is a power failure.	25 %
-There is a Lack of ICT technician.	6,25 %
-It is usually difficult to access technology tools in the school.	12,5 %
-There is the lack of time to prepare ICT lesson plan.	25 %
-The teachers lack ICT experience.	6,25 %
- Using ICT in class is time consuming.	12,5 %
-It is difficult to assess the pupils' contribution when using technology.	6,25 %

**Table 3.17** Difficulties Related to ICT Integration in Classrooms

Availability of ICT equipment and classroom fitness were on the top of the encountered challenges by 31, 25%. Next, came the condition of computers, power failure and the lack of time

---

<sup>109</sup> Cited in Bhasin B. (2012), *Integration of Information and Communication Technologies in Enhancing Teaching and Learning*, Contemporary Educational Technology.

to prepare ICT lesson plan (25%). 12,5% complained of the difficulties in accessing ICT equipment and 2.6% had a lack of experience and difficulties in assessing pupils work.

In order to obtain the interviewees' opinions about the craft of preparing an English language lesson based on technology integration; they were probed in question seven (7) to supply their own conception of what it took to prepare an ICT-based lesson.

The table below summarizes the participants' replies. According to table 3.18, the great majority of the interviewed participants: 81,25% indicated that ICT should not be used for its own sake thus they preferred to have a clear purpose and a well-planned objective to make it more advantageous for both the teacher and the pupils.

Steps of an ICT lesson	ICT-based Lesson Preparation Procedure	Number of participants supporting each step.	Percentage %
1	-Consider availability and the condition of the technology tools: computer/laptop, data-show etc.	(3)	18,75%
2	-Check the appropriateness of the classroom: space, sockets or electricity etc.	(1)	6,25%
3	-Consider his/her own ICT skills: basic skills in Microsoft word, PowerPoint.	(1)	6,25%
4	-Always have Objective : know what, why, when and how to incorporate ICT in lesson planning	(13)	81,25%
5	-Search for / find ICT documents on the net and download video or songs from the web etc.	(2)	12,5%
6	-Preparation of the video or the ICT material to adapt it (in format, size and in content) to go with his pupils needs, level and preferences.	(8)	50%
7	-Integration of ICT material into the lesson	(3)	18,75%
8	-Preview the technology content before presenting it to the pupils in the classroom.	(2)	12,5%

**Table 3.18** ICT-based Lesson Preparation Procedure

50% of the interviewees emphasized on the preparation of ICT material to make it appropriate with the teaching time and also the pupils' level, needs and preferences. Less than 20% thought of the availability of the technology tools before deciding to use them. Less than 10% reflected on their readiness in terms of ICT skills. 12, 5% gave priority to finding ICT material on the net such as texts, adverts, pictures or videos and they previewed the content before presenting it to the class. Only one teacher thought of checking the appropriateness of the classroom: space, sockets or electrical wires and considered his own ICT skills of Microsoft word and PowerPoint

before venturing into incorporating technology. In order to prepare a successful ICT-based lesson, the teachers should take into account the measuring items listed in table 3.19. *ICT-based Type of Teaching Versus Traditional Teaching*, p.137.

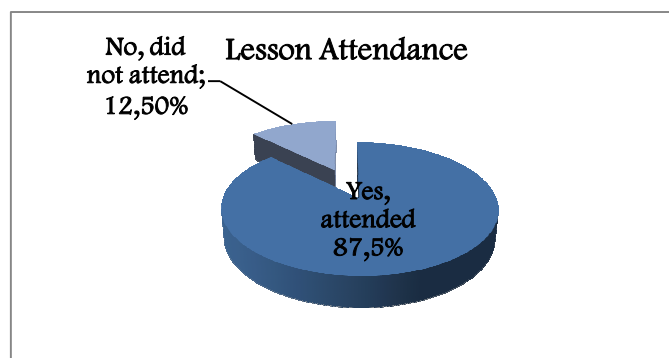
### 3.7.4 ICT in Classroom Learning

Learning is another important aspect of education targeted by the interview. Learning to teach using technology in the classroom is part of continuing teachers' development nowadays. Teachers usually attended seminars and participated in workshops to improve their skills.

#### 3.7.4.1 Recycling

Teachers learned through seminars, workshop shops, reading and model courses attendance. It is part of a teacher's professional development and attitude to know about changes with respect to ICT in the profession, and in a teacher's own subject area, as well as in the general work force that students will enter (UNESCO, 2002: 47). They renew their skills and learn new teaching methods and procedures. In this context, they were asked in question eleven (11) if they had ever attended any lesson where technologies are used.

In the following section, there was a description of the technology based lesson they had attended. In effect, the majority of participants confirmed attending, at least, one lesson where technology tools were used. The rate of attendance is represented in figure 3.26 below.



**Figure 3.26** ICT-based Lesson Attendance

The results of that inquiry showed that 87,5% had actually attended ICT based lesson. The selected remarks about the technological support used in those lessons were analyzed and categorized in a table. They were of two types: those which were based on the use of technology and those based on traditional teaching. Here are below, in 3.19, some of their remarks on the lesson atmosphere, teacher's and pupils' roles, type of teaching, lessons objectives and whether there was any difference between ICT-based lessons and traditional teaching.

	<b>ICT-based type of teaching</b>	<b>Traditional type of teaching</b>
<b>Pupils’ role</b>	1- The pupils were motivated, attracted and felt self-confident to express their ideas. 2-Pupils exchanged ideas, shared experiences with their peers and their teacher. 3- The pupils stayed focused (span of attention) 4- There was interaction and collaboration 6- there was a high level of participation 7- The lesson is always easy to memorize and remember and ICT use enabled pupils to understand better.	1-Without technology many pupils feel demotivated and even bored. 2- Not All pupils can understand the theme of the lesson. 3-The pan of attention quickly lost. 4-lack of interest and no collaboration 6-low level of participation 7-the lesson must learnt by heart
<b>Teacher’s Role</b>	1-The teacher did not intervene much; he was a guide and a facilitator 2-The teacher was less talkative. 3-ICT helps teachers to save a lot of time for explanation. 4-The lesson was objective-oriented 5-ICT facilitates lesson presentation and understanding.	1-The lesson requires more effort from the teacher. 2-The teacher is most of the time very talkative. 3-The teacher usually takes more time explaining difficult items. 4-teacher-centered type of instruction. 5-the text-book is the only support

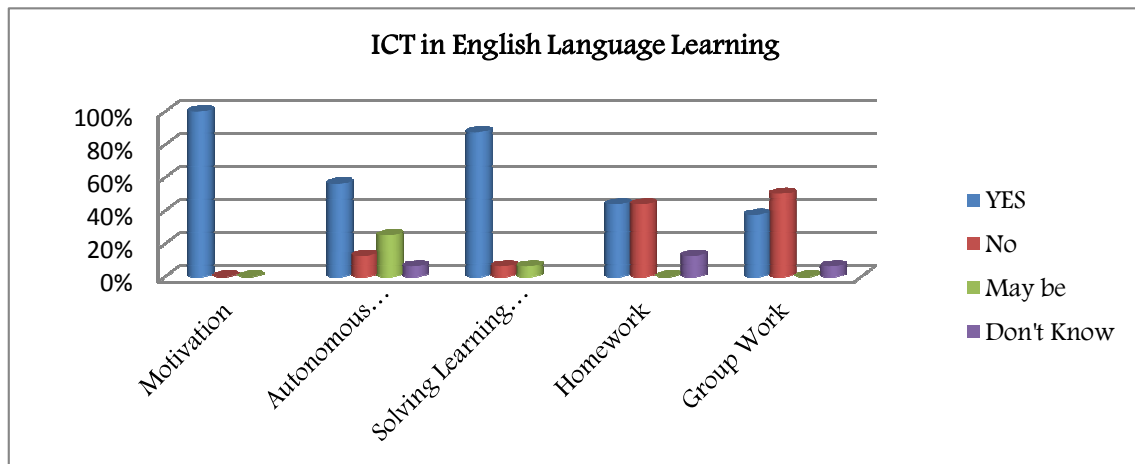
**Table 3.19** ICT-based Type of Teaching Versus Traditional Teaching

The table reports more motivation, participation, interaction, collaboration among ELT learners when taught through ICT than in old teaching methods and the role of the teacher was easier and efficient as well.

### 3.7.4.2. Learning Aspects

Tella and Adu (2009) reported that the integration of ICT for learning purposes enabled students to access digital information more efficiently, explore issues, solve problems, communicate and collaborate. Besides inquiring about the participants’ learning to teach in model courses, they were questioned about their learners’ motivation towards technology use in classrooms, their autonomy enhancement and critical thinking, too. In question twelve (12), all the participants agreed that ICT strongly motivated their learners. They regarded technology as a source of motivation by excellence. More than half of them affirmed that technology implementation enhances learners’ autonomy. The teacher should not interfere too much in the classroom. If s/he talks less, let his pupils think, and then expressed themselves and exchanged ideas, they would head towards more autonomy. While 25% of the interviewees doubted about it, 12,5% claimed that technology has nothing to do with the learner becoming autonomous. However, a large majority of participants thought ICT helped pupils solve some problems by

facilitating the learning process since it provided pupils with pictures, videos and sounds. The different findings concerning pupils' motivation, autonomous learning, solving learning problems, homework and group work are represented in figure 3.27 below.



**Figure 3.27** ICT in English Language Learning

### 3.7.4.3 Homework through ICT

In order to analyze the open-ended questions number twelve (12), thirteen (13) and fourteen (14), the answers are coded into three categories: "yes", "No", "may be" and "I don't know" so as to make them more quantifiable. Table 3.20 below provides an illustration of the English language learning main aspects through the use of technology.

ICT in Learning English language				
Learning Aspects	Yes	May be	No	I don't know
1. Does the use of ICT motivate your learners?	100 %	0 %	0 %	0 %
2. Does ICT use enable teachers to make their pupils autonomous learners?	56,25%	25 %	12,5 %	6,25%
3. Does ICT enable pupils to solve learning problems more easily?	87,5%	6,25%	6,25 %	0 %
4. Do you give your pupils any homework to be done through ICTs?	43, 75%	0 %	43, 75%	12,5%
5. Did your pupils present any group work in class using data-show or any other technological tool?	37,5%	0 %	50 %	6,25%

**Table 3.20** ICT in English Language Learning Aspects

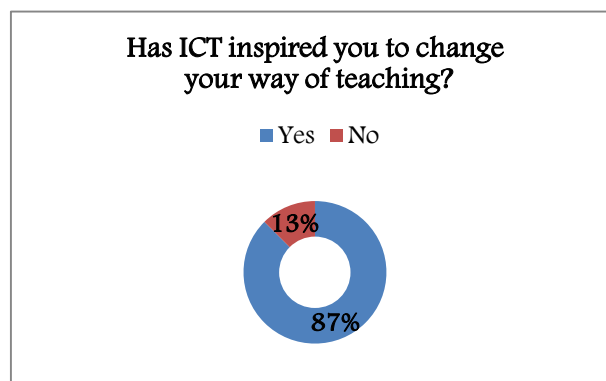
The table indicates that all learners were motivated to learn through the use of ICT in the classroom. 56,25% of the participants thought that ICT use helped teachers to make the learners more autonomous; but 25% of them were uncertain about this. The majority of interview



participants also believed that integrating technology enabled pupils to solve their learning problems and overcome difficulties. Another major part of learning is homework. When interviewed in question thirteen (13), whether they agreed to give homework based on ICT use. Actually, 43,75% of the participants responded positively whereas the same number of participants were unwilling to do so. When bringing back homework to be presented using data-show, 50% of the participants indicated that their pupils could not do it while 37,5 % reported that they were already doing this task in classrooms.

#### 3.7.4.4 ICT and Innovation in Teaching

The teachers were invited to tell whether ICT inspired them to change their way of teaching. The answers to this question which is number fifteen (15) were grouped into “yes” and “No” categories. The participants who answered positively were asked to discuss “how”. 87,5% of the participants asserted being inspired to change their way of teaching by using technology instead of old teaching methods. Only two participants did not consider that ICT as a tool that inspired change in ELT. The results are illustrated in figure 3.28 below.



**Figure 3.28** ICT Inspiration

When requested to state in which ways technology could be a good help in teaching, interview participants gave various answers about ICT benefits. The most relevant ones were summarized below:

ICT has inspired participants to:

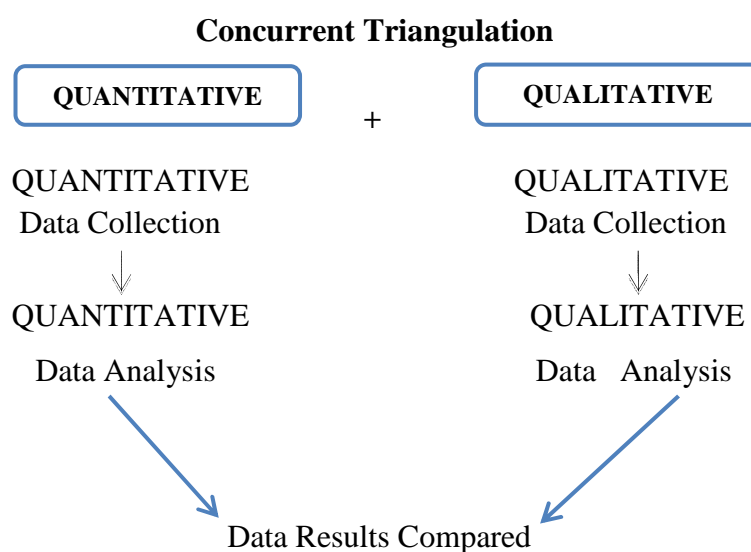
- Avoid routine, create new interest and motivate their pupils.
- Shorten his/her Teaching Talking Time (TTT).
- Innovate his/her way of teaching and find more efficient ways to reach pedagogical objectives.
- Care more about their learners needs especially the e-generation are fond of mobile phones, computers and internet.

- Diversify ELT material and use songs, videos, films and slide presentations...
- Facilitate his/her work, save time and economize effort.
- Present authentic information.
- Move from teacher-centered to learner-centered type of teaching.
- Facilitate learning for the slow learners with videos and pictures.

And when asked in question sixteen (16) to give their opinion about the necessity of incorporating technology tools in every day lesson plan, 75% of the participants claimed it was not necessary unless it was meant to serve an objective. This confirmed the result of items four (4) about *Teacher's Role* in table 3.19 about the objective necessity in an ICT-based lesson planning. Nevertheless, 20% of the participants were in favor of the daily use of ICT in classrooms.

### 3.8 Comparing and Interpreting Findings

In this section the results were triangulated according to the research method adopted which was the concurrent mixed method design. “Triangulation stimulates researchers to regard a topic from different angles”, Denzin (1970)<sup>110</sup>. Figure 3.29 below illustrates the method adopted for collecting, analyzing and contrasting the research findings according to the concurrent method of triangulation.



**Figure 3.29** The Research Design

(Adopted from Creswell J. Research Design, 2009)

According to Mason (2006:3) within the perspective of mixing methods, the researcher wanted to broaden and deepen the study analysis to offer a more close-up view. The mixed study could be initiated either quantitatively or qualitatively. In the present analysis the teachers' and

<sup>110</sup> Quoted in Kappenthuler & Oettmeier (2014)

pupils' questionnaires had quantitative data but the classroom observation and the interview provided the qualitative data. So, different methods were adopted since each of them was considered to fulfill best one part of the researched problem (Mason, 2006:6).

In order to interpret the findings in this research, the mixed method design was adopted. Results of the teachers' questionnaire, teachers' interview and classroom observation were previously triangulated so as to be interpreted in the next section to provide answers to the research questions. The concurrent triangulation design of the mixed method usually integrated the results of the two methods: qualitative and quantitative during the interpretation phase (Creswell et al., 2007:183). The following section represents the last step in data analysis and the results would be compared as described in the previous figure 3.29.

### 3.8.1 ICT Integration

This section compares the research tools results and tends to give appropriate answers to the four research questions including what they hypothesized.

Does the integration of ICT lead to innovate EFL classroom teaching?

It is hypothesized that sufficient pedagogical training and continuous support would lead to ELT innovation in secondary schools. According (Harris & Rea, 2009)<sup>111</sup> ICT integration enabled pupils to learn through the constructivist approach in which there was social and more active behaviors such as creating, writing and updating. This section presents the results that confirmed or disconfirm the hypothesis cited above. All findings in table 3.21 below from teachers' questionnaire, the interview and classroom observation indicated high rates of ICT integration. The mean rate of integration was 73,71 and the median<sup>112</sup> was 76,92.

ICT Integration Findings		
Research tools	Yes	No
	N° and %	N° and %
<i>Teachers ' questionnaire</i>	(41) - 61,19%	(26) - 38,80%
<i>Interview</i>	(14) - 87,5%	(2) - 12,5%
<i>Classroom Observation</i>	(10) - 76,92%	(3) - 23,07%

**Table 3.21** Comparing Integration Findings

Accordingly, the results of the three tools were quite similar and they converged. The integration percentage was quite interesting and had provided a positive answer to the first

<sup>111</sup> Cited in Tay Y.L. and Lim K.S., (2012) *Pedagogical approaches for ICT integration into primary school English and mathematics: A Singapore case study*, Australasian Journal of Educational Technology

<sup>112</sup> The "median" is the "middle" value in the list of numbers.

research question. Teachers actually did integrate ICT in EFL classes in Ain Temouchent secondary schools.

### 3.8.2 ICT Integration Frequency

The frequency of ICT integration determined how often technology was integrated in the teaching practice. The results in table 3.22 below provided a reply to part two of the first research question: how often do teachers integrate technology in their classrooms. It also represented the different rates of technology integration of each research tool.

Frequency of Use	Regularly	Usually	Sometimes	Rarely	Never
<i>Teachers' Questionnaire</i>	0	0	19,40%	41,79%	38,90%
<i>Interview</i>	6,25%	25%	50%	18,75%	0
<i>Pupils' questionnaire</i>	2,04%	/	18,36%	22,44%	57,14%

**Table 3. 22** Comparing ICT Frequency of Integration

It is remarked that there was no regular or usual integration of ICT. Below 20 % of the interviewees “sometimes” incorporated technology in the teaching practice but a higher percentage: 41,79% “rarely” did that. So, the integration frequency was centered between “sometimes” and “rarely”. The percentage of the questionnaire participants who never integrated ICT is 38,80%. As for the results from the interview, there was more logic since the rate of use was lower in the “regularly” and “rarely” categories (6,25% and 18,75%) while the rate went up in “usually” frequency with 25% and 50% in “sometimes”. If the rate of both of “sometimes and usually” were counted in the interview results, it would give 75% which was a significant frequency percentage. Therefore, the results from the interview were more significant than that of those of the teachers’ questionnaire.

When doing classroom observation, teachers integrated technology in ten (10) lessons out of thirteen (13). The three (3) other lessons were not considered since teachers did not introduce ICT. So, 76,92 % of the observed teachers used ICT and that percentage correlated with the frequency use from the interview result. The findings of the frequency of integration were rather low in general, more than 50% for “sometimes” and “rarely” frequencies. The number of participants who integrated ICT in classes on a daily basis was very low in comparison with the significant percentage of integration in table 3.21 of *ICT Integration Findings*.

### 3.8.3 Teachers' Experience using ICT

Half of the interviewed participants have an experience in using ICT in classrooms. They used it with easiness and knew how to operate technological tools. Their experience ranged from two (2) years to six (6) years. (See figure 3.5, of *Experience of ICT Integration, p.96*). It was found out that all the participants who had an ICT experience in using ICT did integrate it in their classes.

<b>Years of ICT Experience</b>	<b>2 Years</b>	<b>3 Years</b>	<b>4 Years</b>	<b>6 Years</b>
<i>Participants</i>	3	2	2	1
<i>Percentage %</i>	18,75%	12,5 %	12,5 %	6,25 %

**Table 3.23** ICT Experience

Being experienced in manipulating technology helped teachers a lot in the process of integration. Table 3.2, *Participants' ICT Experience in secondary schools, p.92* is illustrating the percentage of integration according to the experience of each category of participants. The high rate of integration in each of the three(3) categories: [at least once], [1 week-9months] and [1-2 years and more] did not correlate with the global percentage of ICT integration among participants since the longest period of experience [1-2years and more] had very low number of ICT-experienced participants (7 out of 67). The technology school ICT leaders were supposed to emerge from this category.

Although the periods of experiencing ICT were quite long in both of the questionnaire and the interview, the frequency of use was still below 30 % from both tools results.

To be able to compare different tools results, the qualitative data results from the interview were categorized and quantified through tabulations and were cross-checked with those of the teachers' questionnaire, as represented in table 3.24 below.

<b>Frequency of ICT Experience</b>	<b>Yes</b>	<b>Somewhat</b>	<b>No</b>
<i>Interviewed Participants</i>	62,5%	25%	12,5%
<i>Teachers' Questionnaire Participants</i>	56,71%	/	43,28%
<i>Pupils' Questionnaire Participants</i>	10,45%	/	25,76%

**Table 3.24** Cross-checking ICT Experience

The findings of table 3.24 above converged to a certain extent, concerning possessing ICT skills and experience using them for educational purposes such as teaching. 62.5 % in the interview and 56,71% in the questionnaire were above average level. The lack of ICT experience

was important in the questionnaire results with 43,28%. 25,76% of the pupils thought that their language teacher lacked ICT experience and did not know how to manipulate a laptop or technology instruments.

### **3.8.4 Teaching Experience and ICT**

Teaching experience had an influence on ICT adoption. It was reported from the interview data that in the first category of teaching experience between [1-10] years, there were seven (7) participants; five (5) among them 71,42% integrated ICT. In the second category [11-20], three (3) out of four (4) participants represented (75%) also integrated it. In the last category of teaching experience [21-32], all of the five (5) participants incorporated ICT in the classroom.

According to these results, participants who were in the beginning, the middle and those in the end of their career had all good level of ICT integration. There was a gradual increase: from 71,42%, 75% to 100% which meant that the more experienced the teachers were, the more they adopted technology tools in their teaching practice.

When considering the teachers' questionnaire results and the effect of teaching experience on the integration of technology, the following results were found out: in the category of [24-30], eight (8) participants had a global percentage of 11,94% . In the second category [31-40], there were seventeen (17) who represented 25,37% and in the third category[41-60], there were sixteen (16) which represented 23,88%.

It was the second category of the participants, those who were in the middle of their careers, were pioneers of technology integration. They were followed by those in the third category. It was similar to the population of the interview where the more experienced teachers were ICT innovation leaders in teaching.

### **3.8.5 ICT Training**

This section is meant to bring results of the participants' technical and pedagogical skills and aptitudes in technology integration. "One of the backbone factors of ICT integration is teacher training. If it was weak or insufficient, it constrained the effective technology use.", (Cohen, 1996, 1997)<sup>113</sup>. There was clear a lack of training in the examined results. Generally the findings of both teachers' questionnaire and the interview indicated low level of technical and pedagogical training of participants: the questionnaire scores 44,77 % and the interview 6,25%. The lack of training reached was respectively 53,73 % and 93, 75% among the participants who complained that

---

<sup>113</sup> Bhasin B. (2012), *Integration of Information and Communication Technologies in Enhancing Teaching and Learning*, Contemporary Educational Technology

training was not provided by school. Despite this fact, they benefited from some technical training about general applications such as Microsoft word, Excel and PowerPoint presentations but it was considered as insufficient. Table 3.25 below describes the training findings which were reported by the three (3) research tools: teachers' and pupils' questionnaires and the teachers' interview.

Cross-Checking ICT Training Findings				
Research tools		Yes	Period	No
<b>Teachers Questionnaire 67</b>	<i>Technical Training</i>	30 -44,77 %	/	36 -53,73%
	<i>Pedagogical Training</i>	20 -29,85%	15days – 1 month	70,14%
<b>Interview 16</b>	<i>Technical Training</i>	1 -6,25 %	6 months	93,75%
	<i>Pedagogical Training</i>	5 -31,25%	2 seminars	68,75%
<b>Pupils' questionnaire 392</b>	<i>ICT as a separate subject</i>	78,57%	3 months to 7 years	21,42%

**Table 3.25** Comparing ICT Training Results

Similarly lower results were obtained for pedagogical training about how to implement ICT in ELT lesson preparation, presentation and assessment. Only around 30% from both teachers' questionnaire and interview benefited from such training; but the participants reported that it was unsatisfactory. It was detected that the findings of both types of training results converged but they were both below average. These findings also confirmed the hypothesis of the training necessity to integrate technology more properly.

Unlike their teachers, 78,57% of the pupils had taken the opportunity from technical training, that is to say lessons of ICT as a separate subject for a period going from three (3) months up to seven (7) years, counting their previous years in the middle school. So, they were more ready to receive an instruction based on technology instruments.

### 3.8.5.1 The Effect of Training on Technology Integration

Among the population of participants in the teachers' questionnaire, the number of trained participants who received technical training is thirty (30) that is (44,77%). Seven (7) of them (23,33% of the trained population of teachers), "sometimes" integrate ICT in their classes while fifteen (14) of them i.e. 66,66 % "rarely" integrate it in ELT classes. So, it was found that a total population of participants of twenty-one (21) out of thirty (30) integrated ICT with a percentage of 70% of the trained participants and a global percentage of 31,34% of all the questionnaire participants. Thus, it assumed that training had direct and positive influence on technology incorporation in classrooms although 50% of participants "rarely" adopted technology for educational purposes.

The interviewed population was sixteen (16) participants. There were six (6) ICT-trained who represented 37,5% of this population. One (1) has received technical training and (5) five others received some pedagogical training in seminars. All these six (6) trained participants (100%) reported that they integrated ICT in their language classes. It was a percentage of 37,5% of the total interviewed population who integrated technology in classes.

The number of interviewed who affirmed being familiar with ICT manipulation either socially or at work is thirteen (13) out of sixteen (16). They represented 81,25% of the interviewed participants. Those who are familiar with ICT had an advantage over others. Eleven (11) of them did integrate ICT in an ELT class. They represented a percentage of 68,75% of the interviewed population. Both of the interview and the questionnaire trained participants had high rates of technology integration.

### 3.8.6 Comparing Difficulties while using Technology

The results in this section attempt to provide some answers to the following research question: What challenges do Algerian teachers and learners face when integrating ICT in their classrooms?

The qualitative data of the interview were quantified in tabulation to be compared with the quantitative data from the questionnaire concerning the difficulties and challenges encountered by teachers when integrating ICT in their schools. Several challenges were revealed but the most common one were compared in table 3.26 below.

<b>Cross-checking the Difficulties of ICT Integration</b>			
<i>The Major Difficulties Encountered by Teachers</i>	<b>Teachers' Questionnaire Findings</b>	<b>Interview Findings</b>	<b>Pupils' Questionnaire Findings</b>
-Insufficient number of computers / laptops.	67,16 %	31,25 %	59,74 %
-School computers out of date and / or needing repair	3,31 %	25 %	48,97 %
-Lack of adequate ICT skills of teachers	44,77 %	6,25 %	10,45 %
- School space organization (classroom size And furniture, etc.)	50,74 %	31,25 %	/
-lack of ICT technician in school	56,71 %	6,25 %	38,52 %

**Table 3.26** Difficulties Related to ICT Integration in Classrooms

Apart from some difficulties reported in the interview and related to the lack of time to prepare lessons, lack of ICT experience and power failure, there were four items compared in the above table 3.26. The major difficulty concerned equipment unavailability which scored 67,16% in teachers' questionnaire, 31,25% in the interview and 59,74% in pupils questionnaire results. The second major difficulty was connected to the lack of ICT technician in school. More than half of



the participants complained about it in addition to 38,52% of the pupils'. 48,97% of the pupils thought they urgently needed a technician to update and repair computers. Half of the teachers' in the questionnaire results revealed other important obstacles like the school space organization (classroom size and furniture, etc.) and lack of the teachers' ICT skills.

When examining the findings, it was found that the interview and the teachers' questionnaire data did not converge. But the teachers' and pupils' questionnaires had quite similar results in two major difficulties: the insufficient number of computers and the lack of technician in schools. According to table 3.26, *Difficulties related to ICT Integration in Classrooms*, p.146, the percentage of the questionnaire results were, generally, more significant than the ones of the interview. That was probably due to the fact that interviewed participants did not work in the same secondary schools as the questionnaire participants.

As far as observation results were concerned, no difficulty was encountered by all participants. 90% of the observers noted no difficulties when observing teachers integrating ICT during the observation period. But it should be mentioned that only tool incorporated in all lessons observed was a data-show connected to a laptop. It might be the only tool available or the only one that teachers were able to work with.

### **3.8.7 A Leading Innovation in English Language Teaching**

This section is supposed to answer the following research question:

Does the implementation of technology in classes lead to innovation in EFL classes?

But first we need to clarify the meaning of innovation. To innovate is the ability to create or change old ways of doing things. In this study it is to integrate the new technology tools in ELT teaching classrooms. Rogers came with an illuminating definition below.

“Newness in an innovation need not just involve new knowledge. Someone may have known about an innovation for some time but not yet developed a favorable or unfavorable attitude toward it. “Newness” of an innovation may be expressed in terms of knowledge, persuasion, or a decision to adopt.”

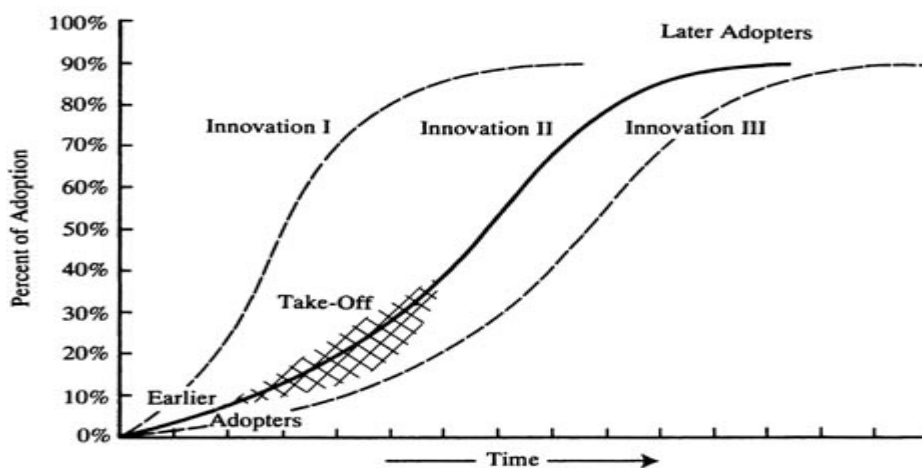
(Rogers, 2003)

In accordance to what Rogers stated, ICT integration is not all anew teaching tool; but Tomei (2008) viewed it as a continuation of the evolution of audio-lingual method instruments, mainly lab recording an audio-tapes.

The table 3.4 of *ICT Beliefs and attitudes*, p.99 indicated that most of the participants had positive attitudes, and were optimistic towards ICT integration. For example, 62,68% of them thought it was important to find different ways to use computer in the classroom. However, not

many of them thought using computer in an ELT classroom was a priority. Thus, teachers were motivated to use ICT in classes; however the idea did not ripe still. Rogers (2003) clarified this point by stating that in order to have a new idea adopted, though it had clear advantages, was often very difficult. There was a big difference, in various fields, between what theoretical knowledge was and what was really put into practice. So many innovations needed a long time, often years, from when being available to when being largely adopted.

According to the integration frequency in this study, ICT required more time to be widespread in schools and in the present study, participants were like the first, early adopters, as shown in figure 3.30 below. They had to go through three step of innovation: I, II and III to be able to change their type of teaching to the learner centered type and this needed progressing in innovation through time.



**Figure 3.30** The Diffusion of Innovation Process<sup>114</sup>

For the participants to reach a higher stages of ICT adoption according to Rogers(2003) they should perceive it as bringing a great advantage, it should be compatible with what they are already doing, it should have trialability, observability and must not be very complex to adopt.

### 3.8.7.1 ICT Integration Competence

First, light needed to be shed on the research participants' ability to use ICT equipment before speaking of innovative teaching. Were participants who had ICT training capable of manipulating a computer and some other technological tools like the data-show? do they have the basic ICT skills to start off technology integration in school?

<sup>114</sup> Adopted from (Rogers 2003), *The Diffusion of Innovation*

Beside the ability to manipulate technology instruments, there was the ability to use them for teaching purposes. The results reported in table 3.7, p.105 (*Planning Lessons with ICT*), indicated that the participants had less than the average capacity needed to manipulate most of the software used to serve pedagogy. The mostly used Microsoft Word has just 41,79% of users, emailing had 17,91% in “a lot” and “sometimes” frequencies. As Gajendran (2007)<sup>115</sup> reported that ICT was not really integrated in teaching on a daily basis especially in Africa. Thus, a minority of participants (14,92%) could “somehow” or had “little” competence in making Power Point presentation with pictures or video sequences compared to 11,94% who planned it well.

Teachers possessed little competence also in connecting to forums, blogs or social networks to exchange educational ideas and develop their methodology because only a minority had these skills. Teachers had poor computer maintenance knowledge for 23,38% had little experience repairing or downloading and installing computer software, except for a few teachers.

Finally, lack of competence could be a real obstacle for ICT integration in language classroom especially when it affected teacher confidence. Some researchers indicated that although teachers knew the advantages of ICT and how to integrate them, they were incapable of preparing an adequate lesson plan (Samuel and Zaitun,2006:9). The low level of competence, in this study, correlated with the low frequency of ICT integration as shown in table 3.22, *Comparing ICT Frequency of Integration*, p142.

### **3.8.7.2 ICT in the Classroom**

After considering his/her pedagogical purposes for integrating ICT, the teacher planned the lesson on the basis of the available technology resources in school. The participants were asked about the lesson steps in which they integrated ICT, the skills taught and the type of teaching.

#### **3.8.7.2.1 ICT in Lesson Preparation Steps**

The results of ICT integration in lesson preparation steps differed from one research tool to another. But they all revealed a considerable rate of ICT integration in the pre-lesson: 55,22% in the teachers questionnaire, 37,25% in the interview and 60% in the lesson observation. The percentage decreased in the lesson phase to only 11,94% and in the post-lesson phase to 8,95 % while in the interview and classroom observation results, there was a total absence of integration in the post lesson phase.

---

<sup>115</sup> Cited in Tella and Adu (2009), *Information Communication Technology (ICT) and Curriculum Development: challenges for education for sustainable development*, Indian Journal of Science and Technology Vol.2.

It was noticeable that most of ELT teachers incorporate technology in the pre-lesson phase, as a warm up or to anticipate the lesson content. This corresponds to the initial level of ICT integration. As most teachers were not pedagogically trained, not all of them were able to incorporate technology in the lesson phase or the post-lesson phase. This demanded more effort and time for preparation from their part. The rate of 62,68% was the combination of “yes, a lot” and “partially” of the participants’ lack of ICT-based pedagogical model to follow, (see table 3.11, *ICT Challenges and Difficulties in secondary schools,p.111*). Nonetheless, table 3.27 below describes teachers ICT integration within lesson steps.

<b>Research tools</b>	<b>Pre-lesson phase</b>	<b>Lesson phase</b>	<b>Post-lesson phase</b>	<b>In all lesson steps</b>
<i>Teachers Questionnaire</i>	55,22 %	11,94 %	8,95 %	13,43%
<i>Interview</i>	31,25%	31,25%	0	3:18,75%
<i>Lesson Observation</i>	60%	20%	0%	20%

**Table 3.27** ICT Integration within Different Lesson Steps

Nevertheless, there were like 37,5% of interviewees who integrated ICT both in listening and speaking lessons and reading and writing. But it was noticed that in classroom observation results that 70% of teachers integrated it in the reading and writing while 30% used it in the listening and speaking skills. It was probably easier for them to use it in reading than in Listening. Very few teachers used it in pronunciation lessons and no participant used ICT to teach grammar lessons. That was why more than 20% complained that it was too difficult to integrate ICT into the curriculum.

When ICT competence was interconnected with teaching competence, teachers were able to innovate their teaching. According to the teachers’ questionnaire results, 65,67% of teachers knew how to motivate learners in the classroom when using technology. But when tackling learner-based activities like projects, the rate was rather low or insignificant.

The collaborative work of pupils was encouraged by 30% of teachers. Self-assessment of pupils and teaching them peer-correction to make them more autonomous did not go beyond 25,37%. Actually, nor many teachers sometimes emphasized on their pupils learning styles such as the visual, auditory or the tactile into consideration when preparing ICT teaching material.

Integrating technology involves readiness and commitment but no more than 41,79% of the participants previewed ICT content and adapted material before presenting it in class, which reflected that teachers did not have sufficient readiness to innovate in an ELT classroom.

### **3.8.7.2.2 Web-based Teaching**

Internet is counted among the technology tools which have plenty of authentic texts, audio, videos, information on various subjects, the instruments and opportunities for communication, in addition to being a platform that permits transmitting and sharing knowledge (Gary Motteram, 2013).

This study also aimed to look into the participants' capacity to use internet resources for classroom teaching as part of the innovation process in teaching and learning. The frequency measuring this capacity is the time indicators used in table 3.9, *Collecting Teaching and Learning Material From The Web*, p.109, "daily", "weekly", "several times a month" and "rarely".

Searching the net to collect information for lesson preparation scored high in "several times a month" by 25,37% and rarely 22,38% and about 19,40% do this search daily. It seemed that the longer it took the participants to connect to internet, the less frequent was the acquisition of new teaching material and resources. As a consequence, the innovation process slowed down, too.

Browsing internet for learning material for classroom practice had nearly the same score for daily and weekly, 11,94% and rarely 34,32%, respectively. 8,95% of the teachers browsed for material to facilitate teaching difficult concepts. Looking for professional development online was even very rare, 4,47% as reported in table 3.9, p.109 *Collecting Teaching and Learning Material from the web*.

As a conclusion, it could be said that internet role in innovating EFL classroom teaching was still insufficient among the participants because as Chhabra (2012:2) stated it, internet offers authentic material in the form of articles, courses, conferences and lessons. Thus, an ELT teacher had the possibility to e-mail assignments to the students in addition to homework which parents might see online at any time. The results of the present study revealed that teachers had merely started to use e-learning.

### **3.8.7.2.3 Assessment**

Formative assessment took place during a course, module or unit. The focus was more on gathering data about the student's progress and using this data to help them improve (Gary Motteram, 2013). It is one of the practices that embodies creation and innovation.

In this research, only 12,5 % of the participants used formative assessment to evaluate pupils work in lessons of pronunciation and spelling. 43,75 % of teachers limited the use of technology software, like Microsoft Excel to do summative assessment of pupils' work after examinations. This type of evaluation was as 'Summative assessment' which often takes place at the end of a unit, module, or a whole course.

### 3.8.7.3 Recycling

Since this study dealt with teachers who were already practicing, the type of training which would best suit them was the in-service type, sometimes called recycling.

According to the participants information, 87,5% of them regularly attended lessons based on the use of technology in seminars organized by schools inspectors. This was done as a systematic type of recycling. In response to question eleven (11) of the interview, ICT-based lesson and the traditional type of teaching were compared by stating many differences which were summed up in table 3.20, p.137, *ICT Based Type of Teaching versus Traditional Teaching*. Some of the main differences concerned the shift in the teacher's role from the knowledge holder to a facilitator or guide. The learner's role had changed, too. S/he was actively involved in the learning process. More freedom was given to the learners to interact and collaborate in groups.

Recycling is a type of pedagogical training that enhances professional learning. It was deduced from their comparisons that the participants were fully aware of the educational change that they should accomplish by incorporating ICT, but apparently the number of challenges was still considerable. In fact, recycling or in-service training had partly provided teachers with a general theoretical knowledge about the educational change that should be undertaken by technology integration. However, it was not sufficient to completely change the way of teaching. As Perkins reflects: "Continuing Professional Development (CPD) is very personal and an excellent barometer of the level of passion a teacher has for their chosen career" (Perkins, 2002: 97)<sup>116</sup>.

Teachers who chatted with colleagues online to learn how to implement technology, would, in turn, become involved in the ICT training of other colleagues. Being part of a large online network of ICT integration in ELT, language teachers received regular information from practising educators in classroom technology. They learned what worked and what did not in addition to what other teachers tailored "recommendation" according to each given situation. (Pegrum, 2009: 4)<sup>117</sup>.

---

<sup>116</sup> Quoted in Motteram G., (2013:47). *Innovations in learning technologies for English language teaching*, British Council, teaching English

<sup>117</sup> Quoted in Motteram G., (2013:47). *Innovations in learning technologies for English language teaching*, British Council, teaching English

#### **3.8.7.4 Meeting Learners Technology Expectation**

In an open ended question, n°5.4, of the teachers' questionnaire, the participants were asked to give their own ideas about the components of an ICT-based lesson planning. Thirteen (13) participants gave suggestions and eight (8) among them were thought of as appropriate because the suggestions given took into account the learners' needs, testing and previewing ICT content in advance, selecting good material, modifying and adapting it, in addition to the use of software.

When describing their most successful teaching situations, eight (8) out of thirteen (13) were considered relevant but only two(2) teaching situations were considered as learner-centered. Situation of lesson eight (8) was a group work activity and lesson five (5) was project-based realized by the learners themselves in which the teacher role was simply as a guide. Samples of ICT integration in classroom practice were presented in table 3.10, *Samples of ICT Integration in Classroom Practice, p.110*.

There was an interview qualitative data which resulted from question twelve (12). The interviewees pointed out to the motivational aspect of technology integration in classrooms. Pupils were excited to learn with ICT and 87,5% of the teachers thought that technology integration could solve learning problems. More than half of them believed that it incited pupils to become more autonomous learners. Therefore, half of the participants urged their pupils to do homework through technology tools, like computer however not many of them encouraged pupils to use the data-show to present their homework in class.

It could be concluded that the teachers' role was not restricted to motivating pupils with technology use since they still had not reached the expected level of educational change. As ICT integration required group-learning and collaborative interaction, teachers should reflect well upon the purpose of incorporating ICT tools in classrooms and follow their learners' needs and preferences.

### **3.9 Conclusion**

Chapter three's main aim was to give a general view of data analysis. It tackled the objectives of this study by providing answers to the research questions and the hypotheses. It described the research instruments results and the method of analysis. After analyzing the collected data, it presented the results and compared them through triangulation method.

In fact, the analysis of the teachers' questionnaire and interview gave evidence of teacher's integration of ICT in EFL classes at the level of Ain Temouchent secondary school. However, the

frequency of integration was low and did not reflect educational expectations. This was mainly due to several challenges that participants faced while incorporating ICT. Equipment unavailability, unequipped classrooms, lack of teachers training and school technicians were among the most important barriers.

On the other hand, the teachers could not innovate their teaching methods. The number of teachers who adopted ICT, used it mostly in association with the teacher centered methodology. It was found out that ICT was incorporated to anticipate a theme or the lesson content. The research results showed that the teachers were not able yet to innovate their teaching practice according to the ICT integration extent they showed. In fact, They were still at the early stages of ICT adoption, according to the followed models of ICT seen in the review of literature chapter. Thus, the expected educational change in Ain Temouchent EFL classes was still not at reach.

In the next chapter, some suggestions and recommendations would be provided to teachers for a more appropriate and efficient integration of technologies in EFL classroom in the Algerian secondary schools.



# Chapter Four

*Implications*

&

*Recommendations*

## Table of Contents

4.1 Introduction.....	154
4.2 Summary of the Findings.....	154
4.2.1- The Pedagogical Integration of ICT.....	154
4.2.1.1. Participants attitudes.....	154
4.2.1.2 - ICT Integration.....	155
4.2.1.2.1 Teaching Experience.....	156
4.2.1.2.2 ICT Experience.....	157
4.2.1.2.3 Frequency of ICT Integration.....	158
4.3 ICT Challenges and Difficulties.....	159
4.3.1 Technology Access.....	159
4.3.2 Teachers' Training.....	160
4.3.3 ICT Support through Recycling.....	161
4.3.4 ICT Integration Barriers.....	162
4.4 ICT and Innovation in Language Teaching.....	163
4.4.1 Teachers Beliefs.....	163
4.4.2 Teachers Competence in Manipulating ICT.....	163
4.4.3 Innovating Classroom Practice.....	164
4.4.4 Enhancing Classroom Learning.....	165
4.4.4.1 ICT in Assessment.....	166
4.4.4.2 Web-based Lessons.....	166
4.5 Summary of Pupils Questionnaire Findings.....	167
4.5.1 Pupils ICT Profile.....	167
4.5.2 Technology in Classroom Learning.....	167
4.6 Implications and Recommendations.....	169
4.6.1 ICT Equipment Access.....	169
4.6.2 Technical and Pedagogical Training.....	170
4.6.3 Supporting teachers.....	171
4.6.4 Teachers ICT Skills.....	172
4.6.5 Planning English ICT-based Lessons.....	173
4.6.6 Classroom Performance.....	174
4.6.7 ICT Policy Implementation Policy: A Must.....	175
4.6.8 Limitations of the Study.....	177
4.6.9 Future Research Suggestions.....	178
4.7 Conclusion.....	178

## **4.1 Introduction**

This chapter attempted to provide the research implications and some pedagogical suggestions which may contribute to the improvement of ELT by the integration of ICT in the Ain Temouchent secondary schools and elsewhere in Algeria. The implications were derived from the comparison of the data collected by different research instruments.

This chapter revealed the results of the study and illustrated the implications. It also aimed to draw out conclusions and attempted to provide suggestions by recommending ways and procedures on how to better integrate ICT in the Algerian EFL classrooms at the level of the secondary schools.

The findings of different research tools were summarized after being compared and implications were drawn for each research item according to the research questions and hypotheses. The data analysis output correlated with the literature review content. ICT integration required technical and pedagogical training in addition to the availability of technology equipment in schools. Both the questionnaire's and the interview's results emphasized on teacher training as of paramount importance in technology integration. Therefore, training among other challenges and concerns such as insufficient equipment and lack of time for teachers to prepare ICT lesson plans constituted barriers for teachers. It was assumed that overcoming them would enable teachers to integrate ICT more regularly. To that end, this study gave suggestions and recommend models upon which technology could be integrated in English teaching with reference to the Algerian EFL context.

Finally, the chapter ended by mentioning the limitations of this study and suggesting further research topics concerning ICT integration. These were presented to future researchers interested in promoting the role of technology in ELT contexts.

## **4.2 Summary of The Findings**

The findings presented in this dissertation represented the perspectives of twenty (20) secondary schools in Ain Temouchent with four hundred-seventy-five (475) participants: thirteen (13) teachers were observed in classrooms, sixty-seven (67) questioned, sixteen (16) interviewed and three-hundred ninety-two (392) questioned pupils. The qualitative and quantitative collected data were mixed and analyzed according to the concurrent mixed design (Creswell, 2007).

This section summarized the results of Ain Temouchent secondary schools case study. On the basis of the previous literature review, in chapter two, this study explored teachers' and pupils'

perceptions of technology tools, the conditions and frequency of their integration and their effects on the process of EFL teaching. The first and major research question to answer was whether EFL teachers perceived ICT as a pedagogical tool of instruction in the classroom.

#### **4.2.1- The Pedagogical Integration of ICT**

The answer to the research question mentioned above involved describing a number of factors affecting technology integration. They concerned teachers' psychological attitudes and skills, pupils' and classroom environment and secondary school resources and conditions.

##### **4.2.1.1. Participants Attitudes**

To be able to innovate, teachers should first have positive attitudes towards the implementation of ICT in classrooms. The teachers' own pedagogical beliefs and values play an important part in shaping technology-mediated learning opportunities (Becta, 2003).

When examining the table of attitudes of participants, it was found out that, in general, the majority of them had good beliefs about technology use and its positive influence on education. 68% of the participants were positively motivated to look for techniques to integrate ICT in classrooms. More than half of them believed that ICT develop learners' autonomy. However, the majority of participants did not agree that computer integration was a priority in the class work.

“It is not yet clear from the research literature whether technology is being used as a “servant” to reinforce existing teaching approaches, or as a “partner” to change the way teachers and pupils interact with each other and with the tasks”.

(Becta, 2003).

Nevertheless, 67,11% agreed that learning to use technology for language teaching was a professional objective to reach. As far as the learners needs were concerned, 68,65% of the participants strongly agreed that the pupils' interests and needs were important when planning lesson based on technology because, as 53,73% of them asserted, teaching through ICT developed autonomous learning; and 79,10% thought it incited learners to try harder and 85,07% expected it would enable them to recall information easily. Finally, 71,67% of the participants strongly agreed that technology use improved higher-order thinking skills, problem solving and learning to learn.

As a conclusion, and with reference to the attitudes results in table 3.4 *ICT Beliefs and Attitudes*, p.99, in chapter 3, it could be said that teachers of Ain Temouchent schools were well motivated and responded positively to the integration of technology in their EFL classes.

#### **4.2.1.2 - ICT Integration**

How often do secondary school and language teachers integrated technology in the teaching practice? This question dealt with the frequency of ICT integration in the classroom since it was crucial to the teaching process as asserted by these researchers. “Embedding the use of ICTs into the curriculum must be a key priority and part of national strategy for learning in an online world by all developing countries.” (Tella and Adu, 2009:55)

Technology integration was the principal concern of this study and all related items were either supporting or slowing down its implementation. The interview and classroom observation results showed that all respondents integrated ICT as a teaching support according to the national curriculum requirements which adopted in secondary school; it is called the “Document d’Accompagnement d’Education Nationale du Secondaire of 2011”<sup>118</sup> and it was also detailed in the teacher’s guide. According to BECTA report of 2003, ICT mainly emphasized on specific curriculum features where teachers were instructed how to embed technology in their classroom teaching and where it could increase learning through the use of word processing, presentation software and interactive video. As a matter of fact, in this study the total integration of ICT was described according to each research tool as follow: 41 participants integrated technology in their English language class. They represented 61,19% of the global population of the questionnaire. Concerning the interview, the percentage of integration is 87,5% i.e. fourteen (14) participants out of sixteen (16). As far as the class observation results, ICT was integrated in ten (10) lessons out of thirteen (13) with a percentage of 76,92%. Thus, the rate of technology integration was significant and well above average. The following sections exposed conditions and characteristics that influenced more or less the efficiency of this integration in Ain Temouchent secondary schools.

##### **4.2.1.2.1 Teaching Experience**

The teachers’ experience consists of the number of years spent in the profession of teaching and the amount of knowledge, such as techniques, procedures, and methods or tools, acquired during that period of time in order to instruct pupils in a better way. (Kozma, 2003; Dexter, 2008; Law, 2009)<sup>119</sup> insisted on the important role of leadership in easing innovative use of technology in teaching. Teaching experience had also an influence on ICT adoption. As Lee et al; (2007:555) claimed, technology transformed the teacher’s role from that of knowledge transmitter to a

---

<sup>118</sup> English Language Curriculum of Secondary Education of 2011

<sup>119</sup> Cited in Hatlevik O.,E., & Arnseth H., A., (2012). *ICT, Teaching and Leadership: How do Teachers Experience the Importance of ICT-Supportive School Leaders?* p.56

promoter of deep critical thinking which implied innovation which made was possible by an efficient technology implementation.

As it was the first variable to consider, it was assumed that teaching experience had an influence on the integration of technology in classes; the following results were generated: in the first age category of [24-30], 53,33% of the participants were experienced teachers. In the second category [31-40], there were seventeen (17); i.e. 68 % and in the third, oldest, category [41-60], there were sixteen (16) which represented 59,25% of the total population of participants sixty-seven (67) had experience using technology. It was found out that the second category of the participants, those who were in the middle of their careers [31-40], incorporated technology more than others with a rate of. 68 %. It was unlike the population of the interview where it was the more experienced teachers who lead the innovation of teaching by introducing more and more technology in classes.

The questionnaire and interview results did not totally converge since it was reported from the interview data that in the first category of teaching experience between [1-10] years, 71,42% of the participants in this category had experience of integrating ICT in their classrooms. In the second category [11-20], 75% of them were experienced. In the last category of teaching experience between [21-32], all of the participants-100%- incorporated ICT in classes. Unlike the result of the questionnaire, the highest rate of integration was in the last category of [21-32] with 100% that included the old teachers.

It is noticed that the interview participants who were in the beginning of their career, those in the middle and those who were in the end all have a percentage of ICT integration well above the average and there was a gradual increase: from 71,42%, 75% to 100% which meant that the more experienced the teachers were, the more they adopted technology tools in their teaching practice. So, according to the interview results, teaching experience gradually influenced positively the adoption of technology tools in classes. This was in accordance with Lau & Sim (2008) research in which they surveyed 250 secondary school teachers in Malaysia and found out that older teachers generally used computer technology in their classrooms more than the younger ones. This was thanks to their rich experience and good classroom management without forgetting the computer competence factor that eased ICT integration.

#### 4.2.1.2.2 ICT Experience

Experience using ICT or knowing how to manipulate technology well helped teachers a lot in incorporating technology. Table 3.3, *ICT Integration Frequency According to teachers' Experience*, p.95, illustrated the percentage of integration according to each category of participants that was representing experience of technology use. The “None” or no experience category had five (5) participants with a low percentage of integration 17,24%. Very few teachers with no ICT experience dared to introduce it in his/her classroom. It was followed by the “at least once” category with 18 - 90%. The next category was the “1-2 years” category with 100%. It was the same percentage as the “1week-9months” category with 100%. And both had the highest percentage of technology integration. However, the “1week-9months” had more scores in *sometimes* frequency of integration than the category of “ at least once” which had more respondents scores in rarely frequency. It was concluded that the more frequent integration of technology was in the categories of [1week-9months] and [1-2 years] as they had 100% of score, followed by [at least once] category in the third place since it included more scores in the rare frequency. At last came the “none” category with 17,24% in rarely.

So, there was a positive correlation between ICT experience and the frequency of ICT integration in classes. ICT experience had a strong influence on adopting technology in teaching English. ICT experienced participants integrated it more often in their teaching. Table 4.1 below summarized ICT experience results and the rate of ICT integration according to each category.

	None	At least Once	1week-9 months	1-2years &more	Total
<i>Participants with/without ICT experience</i>	29	20	11	7	38
<i>Participants who Integrate ICT</i>	5	18	11	7	41
<i>% of ICT Integration</i>	17,24 %	90 %	100 %	100 %	61,19 %
<i>Frequency Rate</i>	5: rarely 24: never	17: rarely 1:sometimes	5:rarely 6:sometimes	6:sometimes 1: rarely	

**Table 4.1** Participants ICT Experience in Ain Temouchent Secondary Schools

50% of interviewed participants had an experience in using ICT. They used it with easiness and knew how to operate the technological tools. Their experience ranged from 2 years to 6 years. (See figure 3.22, *ICT Experience of Integration*, p.131, in chapter 3). It was found out that 50% of those experienced in interview participants did integrate technology in their classes. They actually

did it more often than those with no experience. Therefore, it was understood that ICT experience is a very positive factor of technology integration.

In fact, both results from the teachers' questionnaire and the interview were similar in reporting that both teaching experience and ICT experience were positively affecting technology adoption in classes. As a result, hypothesis one was found positive. Teachers should either had a long teaching experience or had an experience in manipulating technology tool to be able to integrate them in classroom teaching.

#### **4.2.1.2.3 Frequency of ICT Integration**

This section shows the extent to which technology integration affected teaching innovation and the change in the teaching process. The frequency of ICT integration meant how often the participants integrated technology in classes. According to the findings of this research, the integration frequency was rather low among the participants. The highest percentage in the interview resulted in 50% for "sometimes" frequency and half of this value (25%) was for "usually" (see figure 3.21 *ICT in EFL Classroom Teaching*, p.130, in chapter 3) while in the teachers' questionnaire the highest rate went to "rarely" frequency of ICT integration with 41,79% and "sometimes" rate was less than 20%.

When the pupils were asked how often their language teacher introduced ICT in class, only 2,04% indicated that it integrated "regularly" and 22,44% said it was "rarely" integrated; but the highest rate was "never" frequency with 57,14%.

So, the integration rate was low in general, in spite of the high rate of integration -especially in the interview results about 56,71%- it was not integrated on a regular basis. Therefore, the learners could not get much benefit. Concerning this point, results from all the instruments indicated low level of ICT integration except for a moderate use reported in the interview results. The irregular frequency of ICT integration slows down the process of teaching innovation.

#### **4.3 ICT Challenges and Difficulties**

This section deals with the findings which responded to the third research question on the challenges the Algerian teachers and learners faced when integrating ICT in their classrooms.

The accessibility of the new technological tools by all English language teachers in Algerian secondary schools would open new possibilities for change in the educational process. Among these tools are: laptops, data-show, internet-connected computers, tablets, mobile phones and audio-recorders. These tools could assist and support teachers create better learning environment



for their pupils. The following sections will highlight major technology integration requirements that have been exposed explored through the present research.

#### **4.3.1 Technology Access**

As far as the technology integrated tools are concerned, the findings are dissimilar. While observing classes it was found out that all the integrated tools were laptops connected to data-show. The observed participants projected a video sequence or presented a set of pictures as slides or as a PowerPoint presentation. But in the teachers' questionnaire results a variety of tools are used: computer/laptop, data-show, audio tapes, CDs, projector, mobile phone. (see Figure 3.6, *The Percentage of ICT Access by English Language Teachers*, p.97, chapter 3). 35,82% of the participants used data-show connected to computers either to project videos or present pictures slides. Two teachers said they used old projectors, and nine (9) participants used audio-tapes or CD's. But it was not known whether instruments such audio-tapes reader and CDs and mobile were provided by schools. To explain the fact of having different findings let us say that the data-show and the laptop are more available in secondary schools and easy to manipulate. The other tools such as the audio tape or video projection were unavailable and depended on personal initiative.

Equipment should be accompanied with facilities that school affords to EFL teachers. According to participants, equipment is usually restricted to scientific streams use. There was a limited access to the material for other subjects such English. 79, 10 % of Ain Temouchent secondary schools participants complained that their schools did not schedule nor posted any planning for ICT access. It seemed that there was a lack of organization in the absence of a clear policy for ICT adoption in school from the ministry of education. So, it could be said that hypothesis two was disconfirmed: not all teachers who had free unconditional access to ICT equipment in their schools to be able to integrate technology tools more easily in classrooms. Are they technically and pedagogically trained to implement ICT in their lesson?

#### **4.3.2 Teachers' Training**

This section reveals teachers' degree of technological and pedagogical training and its impact on ICT implementation in ELT classes in Temouchent secondary schools. It was an answer to third research question and the hypothesis that if well-trained teachers were more likely to integrate technology in classroom teaching than others.

Teacher development is of paramount importance if technology supplied to the school was effectively integrated. In another word, if the governments spend huge amounts of money on the

purchase of hardware equipment and software without investing on teacher’s professional development, it is was waste cause (Guemide and Benachaiba,2012:15).

Twenty-one (21) participants out of the thirty (30) trained from the whole population integrate ICT with a global percentage of 32,83%. Thus, according to the teachers’ questionnaire results, it seemed that not all the trained population of participants incorporates technology in classrooms. 50 % of trained population “rarely” adopts technology for educational purposes in classrooms.

The findings showed clear lack of ICT training for teachers in Ain Temouchent secondary schools. The trained participants among the population of the teachers’ questionnaire and the interview did not differ so much. 44,77% in the questionnaire results and 6,25% of the interview results concerning technical training. Both tools results reported high percentages of participants with lack of technical training in the two populations: questionnaire 53,73% and the interview 93,75%. Table 4.2 below summarized technical training of participants according to the questionnaire results and gave integration statistics with their frequencies.

ICT Technical Training			ICT Integration				
Questionnaire Population	Untrained	Trained Participants	Participants Integrating ICT	Frequency of Integration			
				Usually	Sometimes	Rarely	Never
67	11	30	21	0	7	14	9
100	16,41%	44,77%	31,34%	0 %	23,33 %	46,66%	30%

**Table 4.2** Summary of Technical Training for teachers

Among sixty-seven(67) participants, there are thirty(30) participants who received technical training. They constituted 44,77% of the questionnaire participants. There are twenty-one (21) out of thirty (30) trained participants who integrated ICT.

It was found that 70% of the trained teachers incorporated technologies in classes and this showed the importance of training. 23,33% of the trained *sometimes* integrate ICT while 46,66% *rarely* did. 30 % of the participants, however, *never* integrated ICT and these results had higher results in *rare* and *never* frequencies.

As far as the teachers’ pedagogical training was concerned, the results were very low from both tools. The interview scores 31,25% of trained participants but in the teachers’ questionnaire results, the scores were even lower with 29,85% of who received some pedagogical training in, actually, two seminars of language teaching and technology implementation. As for the period

of pedagogical training, according to the questionnaire findings, it was very short and lasted between 15 days to one month. Apparently, this was the reason why most of the trained participants described their training as inefficient or poor (see figure 3.8, *The Quality of ICT Training*, p.101). Table 4.3 below summarized teachers' pedagogical training results and its relation with integration of ICT.

ICT Pedagogical Training			ICT Integration			
Questionnaire Population	Trained Participants	Participants integrating ICT	Frequency of Integration			
			Usually	Sometimes	Rarely	Never
67	20	13	0	3	10	7
100	29,85%	65%	0 %	15%	50%	35%

**Table 4.3** Summary of Pedagogical Training

Among sixty-seven (67) participants, there were twenty (20), that was 29, 85% who had benefited from a pedagogical training. Thirteen(13) of them, which represent 65% of the trained population, did integrate ICT in classrooms. The frequency of integration was 15% in *sometimes* and 50% in *rarely*. Thus, it was concluded that half of the questionnaire participants integrated ICT but the rate of integration was below average.

As a conclusion, there were fifty (50) teachers who benefited from either technical or pedagogical trainings; they represented a percentage of 74,62% of the questionnaire population. Thirty-four (34) trained participants integrated ICT in their FEL classes. It was 68 % of the trained population and 50,74% from the total population of the questionnaire participants.

#### 4.3.3 ICT Support through Recycling

Beside training, technical and pedagogical training, providing support to teachers is important in guiding ELT teachers and supervising ICT implementation. It made teacher trainees consolidate the theoretical knowledge they acquired during the training period and enabled them to put it into practice. Usually training which targeted the technical skills of ICT was insufficient to enable teachers to derive the best benefit from technology integration. It was only through continuous professional development and support that more achievement with ICT would be attained (Heggins, et al., 2012).

When exploring if the teachers' ability to integrate ICT in classes, the findings indicated that the big majority of participants got no support at all, as illustrated in table 3.6, ICT Support for Teachers, p.108, chapter 3. 14,92% got some technical support from more knowledgeable colleagues and 11,94 got it from ICT experts outside schools. In fact, it was found out that those

who had benefited from both technical and pedagogical support were more placed or advantageous to best integrate technology but their percentage was very low, only 8,95%.

Recycling in seminars was a well-known pedagogical method where teachers got acquainted with the new teaching procedures, techniques, tools etc. In this study, according to interview results, 87,5% of teachers attended ICT-based lesson presentations and provided remarks that indicated major differences between *an ICT-based lesson and the traditional type of teaching*, as shown in *table 3.19, p.137*.

The most important ones of these remarks were linked to both teachers' and pupils' roles. In an ICT-based lesson there was a high level of motivation of the learners. The teacher had a new role: s/he is more like a guide, a facilitator of knowledge and less talkative. S/he did not intervene much, saved time when introducing a technology tool in class. S/he would more likely achieve his/her lesson objectives.

As a matter of fact, recycling in seminars was appropriate with the learner-centred standards but those pedagogical orientations could not be integrated in the classrooms by teachers because of their insufficient competences, as illustrated in table 3.7, p.105 (*Planning Lessons with ICT*) and in Table 3.8, p.107 (*Integrating ICT in Teaching Aspects and Learning Practices*) in chapter three(3). There was also lack of access to the equipment, lack of training and other challenges that will be dealt with in the next section.

#### **4.3.4 ICT Integration Barriers**

A barrier can be considered as anything that hinders evolution or accomplishment of an objective (Rodden, 2010)<sup>120</sup>. Besides the challenges mentioned in the previous section about the conditions of ICT integration, there were other difficulties which could be considered as barriers. Some were school related and others concerned teachers' abilities.

The findings indicated many difficulties facing teachers when using technologies in classrooms. After comparing the research results, four were considered as real barriers toward ICT integration. The first was related to computers/laptops unavailability, 67,16% of the teachers questionnaire, and 59,74% of the pupil's questionnaire complained from computer unavailability or insufficient number. Secondly, the lack of ICT technician in schools with 56,71% and 38,52%. Thirdly, 44,77% reported a lack of adequate ICT skills of the teacher. Finally, 5,74% thought that classrooms were not fit in size and not equipped for technology integration.

---

<sup>120</sup> Cited in Rababah M. et al, *EFL Teachers' Barriers to the Use of ICT in Instruction in Jordan*, First International Conference on Behavioural and Social Science Research (2012).

The interview and the questionnaire brought similar results but they had different rates. The interview's rate indicator was lower but two important difficulties were stressed: 31.25% of the participants complained of the unavailability of equipment and the unequipped classrooms. Although, the results of three research tools were not identical (see Table 3.26, *Difficulties Related to ICT Integration in Classrooms*, p.146), they all had common difficulties which constituted real barriers and discouraged teachers from integrating ICT in their classrooms.

#### **4.4 ICT and Innovation in Language Teaching**

There were many required conditions for teaching innovations to occur. Examples of that were equipment availability, access, teacher training, confidence and competence, experience and support. The next section described the extent to which the implementation of technology had innovated English language teaching in Ain Temouchent EFL classes, this constituted the answer to the fourth research question: Does the implementation of technology lead to an innovation in the way of teaching in EFL classes?

##### **4.4.1 Teachers' Beliefs**

There are many psychological responses to consider in technology integration like confidence. Beliefs and attitudes are considered key factors in ICT integration in education. Ertmer (1999)<sup>121</sup> considered attitudes as intrinsic barriers of some sort like beliefs, practices and resistance to change. If teachers had positive opinions about technology, they were more willing to incorporate them and introduced change to their teaching if not they might not consider to integrate them. The findings from both teachers' questionnaire and the interview reported that participants were very motivated by technology integration and they believed that it facilitated learning, practicing and recalling information easily. In the following section, participants' abilities were going to be described to see if they corresponded to their motivation and beliefs and whether they enabled them to start the educational change.

##### **4.4.2 Teachers Competence in Manipulating ICT**

Technical and pedagogical trainings and ICT support or assistance enabled teachers to integrate technology more efficiently in schools. The competence discussed here was related to the ability to adopt ICT to change and innovate the type of teaching practice. It was the ability to manipulate technology tools with a purpose to incorporate them in classroom teaching.

---

<sup>121</sup> Cited in Rababah M. et al, *EFL Teachers' Barriers to the Use of ICT in Instruction in Jordan*, First International Conference on Behavioural and Social Science Research (2012)

The findings indicated that (according to table 3.7, *Planning Lessons with ICT* p.105, chapter 3), 41,79% of the participants were able to write texts using Microsoft word software and other text editors versus 25,37% who were unable to do so. The mean value was in the column of “a lot” is 18,50%, less than 20%. And the median value of those who could use the e-mail to exchange documents or messages was 17,91% while 38,80% could not do it.

Except for Microsoft word processing, the teachers’ inability was significant in all other applications like power point presentation, drawing pictures and video integration was rated 46,26%. 95,70% had “none” or no competence in participating in blogs, forums and social networks like Facebook or Twitter. 8,95% had, however, some competence in that. 11,94% had a good ability in downloading and installing software on the computer for educational purposes. It was good to be able to install software as Higgins (2012:4) claimed that the challenge was to guarantee that ICT was integrated to ensure a more effective teaching and learning practices.

The results also reported little or weak competence of participants in manipulating technology to do some basic educational applications such as typing, emailing, creating presentations using power point or slides, taking part in educational forums, blogs, social networks, downloading and installing software except for Microsoft word and other editing software. The low competence of ELT teachers did not empower them to tackle an efficient educational change in classrooms.

#### **4.4.3 Innovating Classroom Practice**

Innovation in the context of this study was the ability to use ICT tools to change the type of teaching practice. Teachers were in the obligation to change in order to survive and get along with the rhythm of the new teaching methods and modern technologies (Wheeler S., 2001:1). In general, the results of the teachers questionnaire indicated low competence of EFL teachers to innovate in their type of teaching since the frequency table entitled: *Integrating ICT in Teaching Aspects and Learning Practices* (N°3.8 p.107) presented lower scores in the competence of engaging pupils in group work 4,47% “always” and 22,38% for “usually”, “sometimes” 28,35% and the less frequency, the higher was the rate. The mean value of “always” was 24,09%. Little competence was indicated by less than 30% in collaborative work. It had been reported in BECTA (2003) that the most effective uses of technology were those in which pupils’ understanding and thinking were challenged by the use of the software either through whole class discussions or through individual or paired work. Teaching pupils to do peer correction, Self-assessment percentage was very low 4,47% in “always” and 25,37% in both “usually and sometimes”.

On the other hand, BECTA (2003) suggested that the whole class and individual work could be equally effective when the skilled teacher knew how to arrange and animate ICT-based activities. When it came to preparing teaching material to meet the needs of different learning styles, the rate was very low in “always” by 4,47%, 10,44% in “usually” and 22,86% in “sometimes”.

However, 65,67% of the participants had the ability to motivate all the classroom and got the learners involved through ICT integration. And also a considerable percentage of them, 41,79% previewed technology content like the video sequence and adapted it before presenting it to the learners and that was so common with the interview results (Table 3.8, *Integrating ICT in Teaching Aspects and Learning Practices*, p.107), item N°6 . Half of the participants, also, knew how to prepare and adapt a video format and content according to pupils needs and tastes (see item N°8 of table 3.18, *ICT-based Lesson Preparation Procedure*, p.135).

Another positive aspect of appropriate use of technology was having an objective to reach. In the interview results 81,25% stated that they must know what, why, when and how to integrate ICT in a lesson. Some teachers chose ICT resources that related to a particular topic while others used it to present the pupils’ work in an innovative way (BECTA, 2003). Furthermore, the interview participants had quite a well-thought intentions and good innovation to integrate ICT to innovate their teaching practice but their insufficient training and the little support they received diminished their competence in changing their way of teaching.

There were other elements that determined whether a change in teaching occurred such as visiting internet to collect teaching material (as in Table 3.9, *Collecting Teaching and Learning Material from the Web*, p.109). The participants’ frequency of visiting websites was measured to collect information for lesson presentation, classroom practice or browse for material to illustrate difficult concepts. “daily” option ranged from 4,47% to 19,40% the “weakly” nearly the same. “several times a month” and “rarely” had higher rate between 25,37% to 40,29% which meant that teachers were visiting internet less and less to do pedagogical work. They did not rely much on internet to renew their teaching resources. This result was quite similar with the previous findings in indicating teachers’ lack of readiness to innovate their teaching through technology implementation.

#### **4.4.4 Enhancing Classroom Learning**

This section illustrates the effects of being an ICT competent language teacher on the classroom teaching and learning output. It also reveals the teaching procedures and techniques adopted through the integration of technologies.

“The use of digital technology is usually more successful as a supplement rather than as a replacement for usual teaching. Technology is not introduced into a vacuum. It is therefore important to identify carefully what it will replace or how the technology activities will be additional to what learners would normally experience.”

(Higgins, et al., 2012:5)

According to the interviewed participants, ICT enhanced the process of learning. They all pointed out that technology integration in the classroom raised their pupils motivation and 56,25% thought it incited them to be autonomous learners and 87,5% believed that it enabled them to solve learning problems more easily.

Findings also showed that the number of teachers who give homework to their pupils did not reach 50% whereas the rate of those who encourage them to present their projects or homework using a data show was 50%. According to BECTA (2003), Learning achievement was maximized when pupils were put in a challenging situation and urged to think and question their own understanding either through pupils using topic-focused software or their own or in pairs, or through a whole-class presentation.

So, it was concluded that ICT was good source of motivation and autonomy in learning and it facilitated solving learning problems. The role of the homework in promoting learning through the use of technology was not given enough merits by the teachers in this study. It was not exploited enough to promote and consolidate learners knowledge.

##### **4.4.4.1 ICT in Assessment**

Technology was able to provide software which allows new ways of assessing. Thus, now students could be assessed and evaluated with different means which simply were not available to us (Motteram G., 2013:148). However, this was slow to realize as in this study only 12,5% of the interview participants indicated that they used ICT to do some formative assessment for instance like asking pupils to check the pronunciation of a group of words in a pronouncing dictionary or in tablet. They also could suggest them to check for difficult vocabulary online in: [www.dictionary.com](http://www.dictionary.com) and e-mail their answers from home. A well-known example of summative



assessment was the use of Microsoft Excel software. 43,75 % of language teachers used it to calculate grades at the end of each school term.

As a conclusion, the use of Microsoft Excel was restricted to grades calculations. The use of ICT in formative assessment should focus more on pupils' learning skills but the rate of Excel integration is low which could not lead to an efficient change in assessment; and no other assessment technology-based method was used to evaluate English language teaching. In fact, evaluation was still done mostly in traditional ways.

#### **4.4.4.2 Web-based Lessons**

A lot of English Language teachers nowadays make use of internet in their lessons; they set online homework, and search it to find materials and information for their lessons, even if only occasionally (Motteram G., 2013). In order to measure internet use among participants, a frequency table was put forward to assess their self-access to internet to do educational research. The results were nearly or up to 20%, indicating teacher's little access to the web resources for the sake of getting information or pedagogical material to prepare lessons or explain difficult concepts to learners. It is found that the participants took longer to connect: "several times a month" scored 25,37%. The number of participant connecting to internet every day or every week was just 11,94%. Although, internet is a valuable educational tool, it was not taken full advantage of on the part of teachers.

### **4.5 Summary of Pupils' Questionnaire Findings**

About three hundred ninety-two (392) pupils from various secondary schools in Ain Temouchent were surveyed for their use of ICT in their learning classes so as to get the profile of English language learners. They were the receivers of instruction and knowledge and they reflected on the teaching output and innovation.

#### **4.5.1 Pupils ICT Profile**

According to the questionnaire results, 77,80% had a computer at home and 60,71% of the participants were "sometimes" encouraged to use them for learning purposes at home. And more than 50% of the participants are surrounded by siblings, who use computers mainly for educational purposes.

Moreover, 308 of the participants i.e. 78,57% have been taught ICT in the Middle and Secondary School for varying periods going from 3 months to seven years. About 65,81% of them claim possessing a good mastery of different technology devices like computers/laptops, multi-media mobile phones or tablets applications. They manipulated very well all applications related to

education and learning as represented in table 3.13 *Participants' Technological Applications*, p.114. There were 71,93% of the pupils who master the use of Microsoft word , 59,18% manipulated Microsoft Excel well, 65,56% were able to download lessons, 50,02% knew how to send e-mails and 84,69% could google search. They also manipulated very well application related to socializing and entertainment: 50,51% of them for drawing with paint software, 76,53% took photos and videos, 80,10% played games, 90,81% listened to music and 69,64% chatted on Facebook or Skype.

#### **4.5.2 Technology in Classroom Learning**

When asked how often their English language teacher taught them through the use of ICT in class, more than 50% of the pupils reported to have never been taught with technology instruments in the classroom. But less than 20% revealed that “sometimes” the teacher instructed them using ICT. In fact, only a few pupils, 2,04%, stated that they were “regularly” taught through technology use.

It was noticed that the higher the percentages were in “rarely” and “never” frequencies, the less was ICT integration in classes. Thus, after analyzing results of the two questionnaires, it was concluded that the frequency of learning with technology were very close in both pupils' and teachers' questionnaires. So, the results of both tools converged at this point.

The use of ICT had helped the learners ameliorate their learning skills. 67,34% of them asserted that ICT improved their learning capacities in the speaking skill; and more than half of them developed their reading skill. Then, technology influence diminished in the writing skill with 46,42% and listening skill with 36,98%. So, it was found out that ICT was partially empowering pupils' capacities in the learning skills.

There were many other advantages of using ICT in learning. 56,88% of the pupils stated that it helped them to store and retrieve information more easily and to check it out any time at home. 40,05% said it assisted them in doing exercises and practicing language items. 32% reported that it facilitated doing collaborative work and group projects. Less than 20% of the learners pointed out that ICT enables them to think critically about their own learning. In this study, the ultimate goal of teaching was to make learners autonomous as Little<sup>122</sup> (1994) points out, autonomy was fostered by authentic means to create collaboration and interaction in the taught language. Between 34,03% and 46,42% perceived ICT as an incentive to learn independently, solve learning problems or cope

---

<sup>122</sup> Cited in Gueza R., *ICT in the Algerian EFL classroom: An Innovative means to Enhance learners' Autonomy*.

with real life situations. So, it could be said from this that ICT helped pupils to learn better and percentage of storing and recalling information was considerable. But in the practices which involved collaborative work, critical thinking and team projects, the rate was below average. At this stage of technology use either in school or outside it, pupils were still in the primary stage of ICT adoption. In the long term of use, pupils would have more chance to reach an effective stage and therefore would use it jointly with their learning abilities so as to be more autonomous.

When asked about their opinion on whether it was necessary to integrate ICT in daily school learning process, 75,25% of the pupils approved of this idea versus 13,01% who believed it was unnecessary. 11,73% of them stayed neutral about this matter. There was no doubt that technology engaged and motivated young people (Higgins et al, 2012:3)

The findings of the pupils' questionnaire, in general, reflected positive effects of technology integration on learner at the level of secondary education. There was good motivation and a social milieu encouragement to use computers. The learners themselves had good command of computer applications especially those related to internet, picture, video and etc. By contrast, there was a low proportion of the amount of learning which they got in schools, namely in a poor acquisition in the writing and speaking skills. In addition to that, they were ranked low in improving their cognitive skills such as problem solving, collaborative work and autonomous learning. These shortcomings might be connected to deficiencies in adopting a more learner-centered type of teaching which best supported the integration of technology in ELT education.

#### **4.6 Implications and Recommendations**

Due to the length of the work undertaken in this study, this section included both implications of the results and the recommendations to EFL teachers. Each item, listed in previous sections, had an effect on the teachers' accomplishment thus each would be evaluated separately and a suggestion was given accordingly.

##### **4.6.1 ICT Equipment Access**

There were not many types of technology tools integrated in classroom teaching. According to the results, the number of educational tools was insufficient in many secondary schools in Ain Temouchent, if not all. Smartboards, laptops, data-show, audio devices, projection screens and upgrading software were either insufficient or unavailable. Few teachers were confident using a wide range of ICT resources however limited confidence affected the way the lesson was conducted (BECTA, 2003).

Thus, first of all schools are recommended to purchase the needed tools and equip the rooms well to play their role in the process of improving education.

In addition to that, language teachers must be allowed to have free access to technology equipment. The school strict schedules and the type of restrictions the school has on the use of equipment is a kind of resistance to use the technology in the classrooms (Guba et al., 2001). They should be able to bring in class whenever needed. It is high time school administrators planned a balanced time-table that organizes ICT use in school between teachers of different subjects. ICT equipment should not be monopolized by teachers of scientific streams only, as most participants complained about this in the interview.

There are other demotivating factors such as the fitness of the classrooms, which should contain pupils and ICT equipment. The administration has the duty to change this by putting equipment in well-fit rooms for ICT use.

#### **4.6.2 Technical and Pedagogical Training**

The most important difficulty facing teachers while integrating ICT in the classroom was the lack of technological training. The percentage of untrained teachers was considerable: those lacking technical skills were 53,73 % in the population of the questionnaire and 93,75 % in the interview participants. The pedagogical training was not enough too, 31,25 % were trained according to interview results and 29,85% in the teacher questionnaire. Consequently EFL teachers were highly recommended to look technology training opportunities whether in schools or on the web.

As a matter of fact, teachers needed the type of training that was linked to their pedagogical needs. Mc Carney<sup>123</sup> identified that teachers ICT development was based on pedagogy, that was to say promoting pupils' learning through technology use, was considered as very effective. Therefore both types of training were needed: the technical and pedagogical one should be complementary.

On the other hand, the Algerian policy makers were on the obligation to provide two types of training: the pre-service and the in-service training. Both types had to be well-fit and should include pedagogical training that teachers needed for planning lessons based on technology use, not just a delivery of some technical pieces of information which were not appropriate with the

---

<sup>123</sup> Cited in Al Mulhim, 2014,p.488. *The Barriers to the Use of ICT in Teaching in Saudi Arabia: A Review of Literature*, Universal Journal of Educational Research, Plymouth University.

pedagogical directions of teaching and learning. The training should be conducted by proficient professionals and should serve pedagogy. Although, teachers who had been receiving professional training in technology, they still did not know how to integrate ICT in their classroom meanwhile they became able to turn on a computer and set up a printer (Cox et al)<sup>124</sup>.

An ICT leader should be appointed at the level of each secondary school who, by his turn, would collaborate with a proficient trainer. ICT Leadership is important to integrate technology, as pointed out by Khvilon and Patru (2002:164), the leader had a crucial role in carrying change in the institution. Fullan (2001)<sup>125</sup> advocated having a future “vision” of ICT integration to endure the technological change in schools. According to him, the leader should work jointly with school teachers to supervise and encourage the integration process. It should not start altogether at a time. Integration must be gradual and goes through several steps like in the model of *Welliver’s instructional transformation model (1990)*: Familiarization, Utilization, Integration, Reorientation and Revolution (*table 2.3, p.59*). However, the Tentative Theory Model of ICT integration reported by (Robertson et al.2007) looked more appropriate for the Algerian teachers’ case, at least for the sample population studied. The steps go from: entry, adoption, adaptation, appropriation and invention. The low frequency reported in the results indicated that the participants’ level of technology integration was at adoption stage: integration of ICT and keeping the traditional methods of teaching.

As a consequence, the leaders should work out a common integration model that was appropriate for teachers to adopt in all secondary schools. This should constitute a common ground that would serve as a starting point for the gradual ICT implementation. The ICT leader has to report the level of integration process or progress to the trainers who then would be able to decide on the content of future training steps and organize the following sessions.

#### **4.6.3 Supporting Teachers**

Teachers should be given continuous support all along the process of integration. Concerning pedagogy, the ICT leader would coordinate with school inspectors and ICT leaders. As far as the technical side is concerned, the technician would handle the fixing computers with software and hardware problems. S/he will also install and upgrade the software if needed.

---

<sup>124</sup> Cited in Al Mulhim, 2014,p.488. *The Barriers to the Use of ICT in Teaching in Saudi Arabia: A Review of Literature*, Universal Journal of Educational Research, Plymouth University.

<sup>125</sup> Cited in Khvilon and Patru (2002), *Information and Communication Technologies in Teacher Education, A planning Guide*, UNESCO.

Table 4.4 below that summarizes the most frequent difficulties that constituted daily challenges for ICT integration. It suggested some solutions to the problems of access and equipment availability. There are some pedagogical recommendations for an effective ICT integration such as ICT training, and how to cope with problems related to school environment.

Type of Difficulty	ICT Challenges encountered in secondary schools	Main solutions suggested for teachers
Equipment & access Problems	-Insufficient number of computers / laptops.	- teachers need to bring their own laptops - borrow their colleagues' laptops and data- show.
	-School computers are out of date and / or needing repair  -Insufficient or no technical assistance provided for teachers when a computer freezes or break down in classes  - There is no electricity in the room or there is a power failure.	- call for their colleagues' technical assistance.  -teachers should test ICT equipment in advance. - request an ICT technician in school. - ask for their pupils' help.  -always have plan "B" and prepare an alternative lesson without ICT.
Pedagogical ICT skills & training problems	-Lack of adequate ICT skills of teachers  -Using ICT in class is time consuming.  -Too difficult to integrate ICT use into the curriculum.  -Lack of ICT-based pedagogical models to follow.	-introduce ICT in class when there is a collaborative work to do. -assign roles to pupils and keep the groups smaller. -set time limit for each activity.  -call for their colleagues' pedagogical assistance and attend seminars. - look for pedagogical assistance in the forums on the net on how to introduce ICT in class.
Problems in the learning environment	-School space organization (classroom size and furniture, etc.) - In most schools the classrooms are not well fit to use ICT.	- look for rooms where there is electrical plug and curtains. -Teachers have to ask school to provide them for a special ICT equipped room.

**Table 4.4** Suggested Solutions for ICT Challenges

#### 4.6.4 Teachers ICT Skills

Competence also relies primarily on the nature of training. Good competence reveals good training. Hew and Brush (2008)<sup>126</sup> identified three types of knowledge and skill that could form important obstacles to ICT integration by teachers: the lack of specific technology knowledge and

<sup>126</sup> Cited in Rahimi and Yadollahi (2011)p.19. *ICT Use in EFL Classes: A Focus on EFL Teachers' Characteristics*. World Journal of English Language.

skills, pedagogical abilities and technological knowledge, and the capacity to manage the classroom in technology environment.

Once the teachers were trained and became more competent users of technology tools, they would gain more confidence in integrating them as a teaching support in their classrooms more easily. This research results revealed that 62% of the interviewed participants were familiar with ICT tools. 68% of them were motivated to integrate it in their teaching but despite such positive attitude toward technology, they did not integrate regularly. Language Teachers are advised to integrate technology more often because there was a diminishing rate of integration according to the results shown in figure 3.3, *ICT Integration Frequency* p.94 in chapter 3. It was noticed that the highest rate of integration was concentrated in “rarely” column which meant that it was less and less adopted. It was declining through time. For the frequency of integration the “only once” category rated 29,85%, “1week -9month” rated 16,41% , and the “2years” rated 10,44%. In the interview results, 87% reported that participants integrated technology but only 6% integrated it regularly. 50% of them chose “sometimes” frequency and 25% chose “usually”. It was slightly higher than in the questionnaire results but still it did not correlate with their quite long experience that reached up to 6 years. So, teachers had to incorporate ICT more regularly in their teaching practice.

#### **4.6.5 Planning English ICT-based Lessons**

ICT integration has an important place in the Competency Based Approach (CBA), the actual teaching method in the Algerian secondary schools, as indicated clearly by the Ministry of Education in the national syllabus of 2006 and 2011 in the “Document d’Accompagnement”<sup>127</sup> for English language teaching (2006). Therefore, it is recommended that ELT teachers act proficiently by looking for better ways and good mechanisms to implement ICT in the classroom practice. The case study of Ain Temouchent teachers indicated that the majority of ICT users adopted it as a teaching support in the beginning of the lesson presentation to anticipate a theme or a language point; then the integration stopped there. 55,22% participants in the questionnaire results, 37,22 in the interview and 60% in the class observation limited the integration to the stage of warming up whereas it was better to extend to other lesson steps. Some teachers reorganized the lesson delivery according to the curriculum, but the majority used ICT to add or enhance their existing practices. They should exploit it in all the lesson steps as much as it is done in the warming up or

---

<sup>127</sup> English Language Curriculum of Secondary Education of 2006 and 2011

more. In fact, the rate of integration in other steps was between 11% to 20% which was inefficient to improve and innovate the teaching practice through technology.

These results reflected teachers' low level of pedagogical training, 6,25% in the questionnaire results and 31,25% in the interview. Only two seminars were organized during a period of a period of more than 2 years. 93,75% and 68,75 had no training according to the results. The little competence that the participants had acquired from self-training in their own time outside school was not counted on as 14,92% and 23,88% from both tools' results did not specify neither the period nor the place and only one teacher had a training degree.

Teachers' mean value in basic Microsoft word applications was 18,50%, and the use of email for exchanging documents did not reach 20%. Drawing pictures, video applications and power point presentations were all below 50% level. This meant that teachers' computer aptitudes were not up to the required standards which, again confirmed the poor pedagogical training results.

There should be an efficient planning of ICT integration in lessons with clear objectives of its usefulness. BECTA (2003) asserts that despite the need for a new pedagogy with ICT including at times moving from a facilitator role, teachers still need to adopt a leadership role in the planning, preparation and follow-up of lessons. Teachers needed to reflect upon the plus that ICT could bring into their classes and this would be a perfect subject of debate in seminars.

#### **4.6.6 Classroom Performance**

This section deals with the output of training experience, technical and pedagogical training, support and competence.

Teachers' performance in classroom practice and lesson preparation was evaluated in a frequency table. The results of two (2) elements out of eight (8) were positive. 65% of participants were able to motivate learners and got them involved which was good ground for ICT implementation. 50% previewed ICT content before presenting it in class; and knew how to prepare simple video based lesson for listening, viewing and reading purposes. However, no considerable capacity was recorded for pronunciation, only 12,5% and 0% in grammar lessons, as illustrated in figure 3.24, *ICT Integration in Teaching Skills*, p.132, in chapter 3. These findings were consistent with Yang and Huang's (2008)<sup>128</sup> study who reported that technology was mostly often used in activities of listening and speaking, while it was least used in teaching grammar.

---

<sup>128</sup> Cited in Rahimi & Yadollahi (2011), p22. *ICT Use in EFL Classes: A Focus on EFL Teachers' Characteristics*. World Journal of English Language



As a consequence of such lack of proficiency, the teacher was left at the starting point or the initial stage of ICT integration. In the same line of thought with this, Tezci (2009)<sup>129</sup> identified that ICT literacy and integration were interconnected, which means that more skilled teachers in terms of computer and internet applications were more likely to integrate ICT tools more often. The results from the same table also revealed little competence in engaging pupils in group work; 25,35% “sometimes” managed to do that while less than 30% succeeded in incorporating technology. Furthermore, teachers seemed not to know how to assess their pupils through peer-correction or self-assessment procedures. The learner still relied on the teacher to assess all of his work, which is done in a summative rather than an evaluative way. Because the main characteristic of assessment is formative, the major purpose is not to quantify pupils’ performance in grades but in grasping the process in which they get to solve learning problems (Educational Initiative Centre Guide, 2004:3). The participants had also less ability in preparing material to suit different learning styles of their pupils. According to Wheeler (2001:15), technology integration needs a shift in the role of the teacher who should have other skills other than simple teaching such as designing working spaces and elaborating teaching resources.

Internet is a very rich source of information in education which can be very beneficial to language teaching. It was found that the participants’ frequency of visiting educational websites was less than average. Less than 20% connected daily to internet, 25% weekly and 40% each month.

Teachers were inefficient in the majority of teaching practices like group work, assessment, learners’ style needs and using web resources. This could not lead to an innovative type of teaching as they still clung to teacher-centeredness method of instruction in spite of using ICT. This output confirmed the hypothesis which stated that teachers with sufficient pedagogical training would innovate their teaching practice and perform better. This implied that they did not receive sufficient and effective training.

Thus, ELT teachers are recommended to consider the use of technology in connection with the learner-centered type of instruction because it was based on collaboration, interaction and group work. As Pedersen and Liu (2003) put it, most language teachers asserted that the objective of making pupils collaborate was to improve their skills in working together which were basics for

---

<sup>129</sup> Cited in Rahimi & Yadollahi (2011),p24. *ICT Use in EFL Classes: A Focus on EFL Teachers’ Characteristics*. World Journal of English Language

lifelong learning. The learner should play an active part in the lesson and contributed importantly to his/her own learning.

#### **4.6.7 ICT Implementation Policy: A Must in Algerian Education**

Algeria must adopt a clear ICT policy to be able to integrate it within secondary school for educational purposes. The policy makers have to emphasis on the implementation of technology throughout the educational system. A well-thought, clear policy has to be worked on to assist EFL teachers in schools to integrate technology in teaching and learning. In fact, Algeria has already purchased computers and other technology equipment for schools but bringing material without training the potential users on how to integrate it is simply a loss of money (Hamdi,2007; Guemide and Benchaiba,2012). One of the consequences of purchasing technology tools without training the personal was equipment degradation especially if ICT technicians were not appointed to repair it and upgrade the software.

There must be a real strategy in schools. When designing or implementing any teacher professional development program for technology, it is important to situate that program within the context of a theoretical framework for adult learning (Guemide and Benachaiba, 2012:17). The policy makers need to play a strong role by providing teachers training as a compulsory part of teacher development which has to be integrated in pre-service and in-service training. It should be well-planned and preferably outside the teaching hours. In the end of training, teacher trainees must be tested, graded and given an official training certificate. The newly recruited teachers should have passed and got the training certificate so as to guarantee a minimum of technology competence of teachers who are starting a teaching career.

In addition to that, the Algerian ministry of education needs to elaborate a technology integration framework to be applied in schools. According to Searson, et al. (2013:215)<sup>130</sup> the policy ought to be explicitly communicated to secondary schools headmasters to get a precise orientation on how to integrate ICT in classroom practice. They also added that teachers would not hesitate to incorporate it if ICT integration becomes a national policy in education. It should have clear pedagogical objectives based on the implementation of technology such as hardware purchase and equipment installation in schools, specifying the pedagogical requirements for teachers, appointing ICT leaders and lab technicians and involving all administrative crew in the

---

<sup>130</sup> Cited in Vimbai E.N. et al, (2013); *Barriers to Effective Integration of ICT in Harare Secondary Schools*. International journal of Scienc and Research(IJSR), India

change. In effect, the nature of the change demands several steps to be taken seriously by all members involved in the education sphere:

- Technology professionals could be called upon to install and support the infrastructure and equipping classrooms.
- Since technology is an ever-changing innovation, teachers need to be given continuous technical and pedagogical support in order to upgrade their knowledge and skills.
- There is a lot of work to be done on changing teachers' negative attitudes towards technology integration. Ertmer (1999) and Schoepp (2005)<sup>131</sup> stress that since teachers are conscious of the barriers preventing them from integrating ICT efficiently in teaching practice, they are as well capable of initiating ways and find new options to deal with them.
- Developing teachers' skills and aptitudes will enable them to acquire more confidence and this would encourage them to integrate technology more efficiently.
- Schools should ensure internet connection to ICT-fit classrooms to enable web access to collect more information and promote learning perspectives.
- Policy makers ought to settle a programme for teachers' professional development based on appropriate technology integration strategy. "Educational leaders have to plan for ICT integration; they have to budget for ICTs and find ways of getting extra funding to put in place the required infrastructure" Vimbai E.N., et al., (2013:215).
- Teachers have to ameliorate their technological skills through online training web-sites so as to gain profound mechanisms of pedagogical uses of ICT.
- Teachers should support collaboration and effective integration for learning. The use of computer and digital technologies is usually more productive when it supports collaboration and interaction, particularly collaborative use by learners or when teachers use it to support discussion, interaction and feedback (Higgins, et al., 2012:4).
- The Algerian ministry of education is urged to resolve the confusion of ICT integration in the curriculum and let not technology integration an optional choice. It should be clearly required from teachers to implement it in the programme of secondary education.
- The Algerian ministry of education is recommended to promote the implementation of ICT by innovating the ELT curriculum framework. As technology training is the strongest enhancing factor of ICT integration, there is a need for more research to detect the weaknesses of teachers'

---

<sup>131</sup> Cited in Rababah et al, (2012), *EFL Teachers' Barriers to the USE of ICT in Instruction in Jordan*. International Conference-

ICT knowledge in all secondary schools so as to enable decision-makers elaborate common standards for EFL teachers, as a part of educational reform. Beside this, intensive procedures should be taken to improve EFL teachers' pedagogical ICT knowledge to ensure they achieve those common standards throughout all Algerian schools.

- ELT teachers need to integrate ICT in teaching and learning in the classroom through power point or video projection as much as it is used for lesson preparation, unit planning and calculating grades or for administrative requirements.

- ICT integration should not be limited to the pre-lesson phase like in the warming up but should be extended to include other lesson aspects such as pronunciation and grammar.

- ELT teachers are advised to enrich their ICT material by keeping an e-portfolio. According to Motteram (2013) an e-portfolio may be word processed documents, mind maps, CDs and a wide range of digital assets like audio and video recordings etc. An e-portfolio can be used to assess what pupils can achieve through technology integration. A collection of e-mails, adverts, photos and songs may be a good start for evaluating their progress in writing, posting and in oral communication.

- ELT teachers need to be aware that integrating ICT within traditional ways of teaching does not ensure innovation. Kirsti and Punie think (2008) that schools have to enable the introduction of innovation in methods, a supporting curriculum and teacher training. Initiatives from technology leaders ought to be encouraged and appropriate teaching procedures developed upon well-reflected plans.

- There must be coordination between education policies for change and ICT infrastructure, skills and access policies. There have to be a clear common vision of the future innovation in EFL teaching in secondary schools on the part of the policymakers, researchers and practitioners (Punie et al, 2008).

#### **4.6.8 Limitations of the Study**

The findings cannot be applied to other Algerian secondary schools that might possess more technological equipment that was made available for ELT teachers. It might be similar in schools where teachers were offered more or less opportunities of technology training either in institutions or outside them.

The case study of Ain Temouchent secondary school participants could not be generalized on another population because of the differences of teaching abilities and educational status or degrees. Another difference concerned the context itself of the present research as it focused on the

difficulties in technology integration faced by the ELT teachers; those related to other subjects might be different. As a matter of fact, this study reported just the most common challenges, but there are other barriers connected to the lack of teaching skills, teachers' cultural orientation, lack of motivation, lack of class control, infrastructure expenses, and administration support. In addition to this, the level of ICT integration was not similar in secondary schools; there were differences of equipment availability and access. Besides there were teachers' who took the initiatives to bring their own laptops and manage change and those who were reluctant to do that.

#### **4.6.9 Future Research Suggestions**

Future researchers may explore the Algerian ELT teachers' attitudes towards ICT integration more deeply and investigated the social influence on the use of technologies in teaching. This could be done as a comparison between their beliefs as educators and what they practice in their classroom. The teaching realities could be quite different.

Another possibility to make a study as a follow-up to the present one is to investigate other factors involved in technology integration such as the administrative team of the secondary schools and policy makers' roles.

Investigating the use of ICT to teach other subjects especially languages like French and Spanish and compare the research results with those of English language studies could be fruitful and beneficial to both teachers and learners.

Other researches may target other technology tools benefits in English language teaching and learning for instance internet, tablets, mobiles or even smartboards.

Further research in the domain of ICT in ELT classes could be an exploration of the reasons behind refraining from exploiting the potential that technologies present to the language teachers.

#### **4.7 Conclusion**

This chapter summarized the results of integrating technology tools in language teaching in secondary education in Ain Temouchent schools. The aim was to sum up the utility of ICT instruments in EFL classes. There was an exploration of teachers' perception of technology tools, the conditions and the frequency of their integration to enhance pedagogy, and the various barriers encountered by teachers while using technology in classrooms.

Another part of this chapter dealt with innovation aspect of ICT in changing the teaching practice. According to teachers' questionnaire, most participants had good beliefs which positively influenced their type of teaching. Almost all of them were motivated to search for techniques to

integrate ICT in classrooms for the sake of the benefits, such as empowering their pupils to recall information, improving higher-order thinking skills and solving learning problems.

Both of the interview and classroom observation results showed that most participants had significant rate of ICT integration. It was commonly used as a teaching support in concordance with the national curriculum requirements. However, there were barriers that prevented or slowed ICT integration like the absence of an Algerian clear policy for ICT adoption. Moreover, not all teachers had free access to technological facilities. Although, ELT teachers had good abilities to motivate learners and well-defined objectives behind ICT integration in lesson planning, the questionnaire findings indicated their low competence in collaborative work and in meeting the learners' different needs. This was due to their insufficient training and the little support they received.

This chapter also presented some suggestions and recommendations for English teachers to cope with the difficulties and challenges previously mentioned such recommending schools to purchase the needed tools and equipping the rooms. Language teachers ought to be allowed to access technology tools when available. This should be organized with a fair time-table between teachers of different subjects. An ICT leader should be appointed at the level of each secondary school to collaborate with designed proficient trainers. This last chapter ended with some limitations of the present study such as other ICT barriers as well as some other future research suggestions which could be investigated by other researchers.

## **General Conclusion**

Integrating ICT in English language classrooms is a necessary practice in nowadays schools in Algeria, as in elsewhere. Algerian educators, teachers and pupils need to take into consideration the advantages and achievements accomplished in various fields, including education where technology is appropriately incorporated.

English language teachers have to pay attention to the development in the world surrounding them and to their pupils to find that there was no reason to feel reluctant or technophobic. This dissertation investigated teachers' perceptions to find out whether they had positive attitudes and willingness to adopt technology in their EFL classes.

ICT use and experience, the frequency of integration and the eventual challenges or discouraging factors were targeted by the semi-structured questionnaire administered to survey the ELT teachers of English language in Ain Temouchent secondary schools. Examining results revealed that almost half of the teachers had no experience in using ICT and less than 50 % of the participants were found 'rarely' integrating ICT. They occasionally incorporated it in their classes. The more experienced teachers, mainly those in the category of "1-2 years", were considered more innovators than others.

Technology instruments like the data-show, laptop computers or even cell-phones were the most commonly available tools which were used to project videos or present pictures in a form of slides or PowerPoint presentations. An important number of EFL teachers integrated ICT in their classes as a personal initiative whereas 30% stated that ICT was integrated in ELT because of curriculum requirements. Most of them complained that their schools posted no official schedule for ICT access.

Due to their crucial role in every human act, attitudes were measured according to the Likert Scale and they suggested that the majority teachers were enthusiastic to try different ways to use the computer in classrooms. They strongly agreed on the utility of collaborative work in classes through technology use. Almost all teachers approved of the role of ICT in helping pupils recall information more easily.

The findings revealed that less than half of the teachers received some technical training but it was insufficient for EFL teaching needs and was unrelated to pedagogy. The main reasons behind insufficient training were the lack of an ICT teacher, the lack of time for training and equipment access in the schools next to the fact that the great majority received neither technical nor pedagogical support. The insufficient training had many consequences on teachers' abilities.

Not all Teachers could produce texts by using Microsoft Word processing programme and only a few had the ability to connect to the internet and know how to send emails, messages or exchange educational files. A minority also connected daily to the World Wide Web (WWW) to collect information so as to use it in lessons preparation. Microsoft PowerPoint was the least mastered among teachers. Thus, more than half of teachers' technology integration remained in its initial stage, except for some participants who usually encouraged pupils to do some collaborative work when preparing projects through internet. But most of these teachers "rarely" connected to look for professional improvement as they lack computer basic manipulation skills.

Despite the teachers' lack of competence, theoretically, they knew about procedures how to incorporate ICT in an ELT class. They had considerable theoretical knowledge; for instance they came out with valuable ideas like selecting appropriate material, testing it, modifying and adapting before presenting it to the learners. However, there were other challenges that constitute barriers towards an efficient ICT implementation in Ain Temouchent secondary schools. Most teachers complained of computers' unavailability or conditions, the rooms' size and the lack of ICT skills, beside other pedagogical difficulties of the curriculum.

As a consequence, these barriers were not in the benefit of the learners who had, in their majority, their own computers at home and are surrounded by ICT tools in their social environment. However, they had little exposure to technology in the secondary schools. In addition, the great majority of pupils were taught ICT as a separate subject and they had good manipulation of technologies. According to them, ELT teachers who did not frequently integrate technology in their classrooms were slowing down their learning process. They claimed that ICT assisted them in learning to become more autonomous.

The findings of the qualitative data derived from classroom observation and the interview backed up the questionnaire results. Besides that, they indicated teachers' readiness to diffuse an appealing teaching content through pictures and videos simulating real life situations. There was also a partial use of the learner centered type of instruction which was curriculum based.

The familiarity with ICT that the teachers showed during the interview especially among participants of less than ten (10) years of teaching experience, did not reflect their ICT knowledge or their level of training. 40% were unaware that ICT was integrated in the Algerian national curriculum and more than 60% did not take advantage of any pedagogical training that aimed to integrate technology in lesson planning. Consequently, teachers' irregular mode of ICT use in classrooms was limited to the pre-lesson phases, like the warm up sessions or to listening and reading without including pronunciation or writing. This did not prevent a significant number of



teachers to use the computer to prepare lessons and update the teaching material. As for evaluation, the teachers only used Microsoft Excel to do summative assessment like calculating pupils' grades.

On the other hand, despite the challenges, the participants were inspired to integrate technology, they were considering important steps to follow in the process of integration such as to take into account ICT availability, the condition of instruments, the integration objective and to know why, when and how to incorporate ICT in lesson planning. One clear example was to preview video content and adapt it to pupils' needs and preferences.

Most of the teachers believed that an ICT-based type of teaching motivated pupils more than traditional teaching, provided interaction and collaboration, facilitated learning and made lessons easy to memorize. They believed the teacher's role should change to become more like a guide and facilitator since ICT facilitated learning and helped him/her to save time for explanation.

The general findings put into evidence the fact that ELT teachers in secondary schools were quite familiar with ICT. Besides answering the research questions, the results had supported the research hypotheses. Indeed, more than 60% of the secondary school teachers who had positive attitudes towards ICT, incorporated technology tools such as the laptop and the data-show into their teaching practice. Evidence was found in their experience of use, for example, participants with positive attitudes were those who already possess an experience in integrating technology. However, experience and positive attitudes alone could not help teachers in schools with insufficient technology equipment and shortage of resources. Although the teachers could access some technology instruments in their schools but these were either insufficient or did not work properly. In addition to that, the lack of school organization created difficulties to access equipment and tensions rose between teachers of different subjects.

This study hypothesized that well-trained teachers were more likely to integrate technology in the classroom. In fact, according to the research findings, the number of untrained participants overtook the number of the trained. The great majority did not benefit of pedagogical training. In spite of this fact, considerable number of teachers took the lead in using data-show and laptops but they did not integrate them on a regular basis.

Nonetheless, the findings indicated that almost all trained participants integrated technology in classes and that ICT experienced teachers were leaders in innovating ELT. The pupils' were living in an encouraging ICT social environment, had computers at home, were ICT literate and able to manipulate computers and internet applications easily which added to their readiness to

learn through technology integration. But due to the demanding nature of the teaching job, teachers could not afford time to prepare ICT-based lessons.

After comparing the research instruments results and getting insights of technology integration in Ain Temouchent secondary schools, EFL teachers were suggested to seek continuous technological training and support to manage ICT integration bearing in mind that technology is in an ever-changing progress. Teachers were recommended to improve their technology skills through training courses, searching the web, collaboration and interaction in order to overcome the challenges encountered especially the lack of competence and their negative attitudes.

Teachers should bear in mind that pedagogical integration of ICT is a milestone; they needed to go through several steps such as familiarization, adoption, adaption, appropriation and invention as suggested by (Robertson, Fluck & Webb, 2007). It is also a continuous process therefore documentation and literature constitute a precious help for EFL teachers.

# Bibliography

## Bibliography

### BOOKS

- 1- Angell, B. & Townsend, L. (2011). *Designing and Conducting Mixed Methods Studies*, Institute for health, Health Care Policy and Aging Research at Rutgers, The State University of New Jersey, School of Social Work.
- 2- Cohen, L., Manion, L., & Morrison, K. (2000), *Research Methods in Education, 5<sup>th</sup> edition*, Routledge Falmer, Taylor & Francis Group., London and New York.
- 3- Cohen, L. Manion, L. and Morrison, K. (2007), *Research Methods in Education*, 6th edition. Routledge, Taylor & Francis Group, 2007.
- 4- Creswell, J., W. (2003), *Research Design, Qualitative, Quantitative and Mixed Methods Approaches*, 2<sup>nd</sup> edition, Sage Publications.
- 5- Creswell, J., W. (2009). *Research Design, Qualitative, Quantitative and Mixed Methods Approaches*, 3<sup>rd</sup> edition, Sage Publications University of Nebraska-Lincoln, Sage –Los Angeles, London, New Delhi, Singapore.
- 6- Creswell, J., W. (2012). *Educational Research. Planning, Conducting and Evaluating Quantitative and Qualitative Research*. University of Nebraska- Lincoln. 4<sup>th</sup> Ed. Pearson.
- 7- Educational Initiative Centre (EIC) Guide (2004). *What is Student Centered Learning*, Educational Initiative Centre, University of Westminster.
- 8- Erben, T. Ban, R. & Castaneda M. (2009). *Teaching English language learners through Technology*, Routledge, Taylor and Francis Group, New York and London
- 9- Gordon, C. (2012). *Beyond the Observer Paradox: the audio-recorder as a resource for the display of Identity*, Syracuse University, USA, Qualitative Research 13(3) 299-317, Sage Publications.
- 10- Griffee, T. D. (2012). *An Introduction to Second Language Research Methods, Design & Data.*, TESL-EJ Publications, Berkeley, California, USA.
- 11- Hales, D., Peersman, G., Rugg, D., & Kiwango, E. (2010). *An Introduction to Triangulation*, UNAIDS, joined U.N. programmes HIV/AIDS.
- 12- Kazdin, A.E., 1992. *Research Design in Clinical Psychology*, 2<sup>nd</sup> ed. Boston: Allyn & Bacon.
- 13- Kennewell, S., Parkinson, J. and Tanner, H. (2001). *Developing The ICT Capable School*, Routledge Falmer, Taylor & Francis Group. London & New York.

- 14- Kennewell, S. (2004). *Meeting the Standards in Using ICT for Secondary Teaching*, Routledge Falmer, Taylor and Francis Group. London & New York.
- 15- Kothari, C.R.(2004). *Research Methodology - Methods and Techniques*, 2<sup>nd</sup> revised Edition, New Age International Publishers.
- 16- Kvale, S. (1996). *InterViews: An introduction to qualitative research interviewing*. Thousand Oaks, CA: Sage publications.
- 17- Leask, M. (2001). *Issues in Teaching using ICT*, Routledge Falmer, Taylor & Francis Group, e-Library, 2001., London and New York
- 18- Lee, C .B., Teo, T., Chai, C.S., Choy, D., Tan, A. and Seah, J. (2007). *Closing the gap: Pre-service Teachers' Perceptions of an ICT based Student-centred Learning Curriculum*, Proceedings Ascilite Singapore 2007, full paper: Lee, Chai, Chov, Tan and seah
- 19- Loveless, A. and Ellis, V. (2003). *ICT, Pedagogy & the Curriculum Subject to change*, Routledge Falmer, Taylor & Francis Group. London & New York (2003)
- 20- Mackey, A. and Gass, S. M . (2005). *Second Language Research Methodology and Design*, Lawrence Erlbaum Associates Publishers 2005, Mahwah, New Jersey London.
- 21- Marczyk, G., DeMatteo, D. and Festinger, D.(2005). *Essentials of Research Design and Methodology*, published by John Wiley and Sons, Inc, Hoboken, New Jersey. Published simultaneously in Canada.
- 22- Mason, J. (2006). *Six Strategies for Mixing Methods and Linking Data in Social Science Research*, ESRC National Centre for Research Methods, NCRM Working Paper Series, ESRC Economic & Social Research Council.
- 23- Mathers, N., Fox, N., & Hunn, A. (2002). *Trent Focus for Research and Development in Primary Health Care*, Using Interviews in a Research Project, Trent Focus Group (2002), Institute of General Practice Northern General Hospital, Sheffield.
- 24- McKay, S. L.(2008). *Researching second Language classrooms*, ESL and Applied Linguistics Professional Series, Eli Hinkel, Series Editor, Lawrence Erlbaum Associates, Inc.(2006). This edition published in the Taylor & Francis e-Library, 2008.
- 25- Mc Laughlin, B. (2003). *Types of Interviews*, Fundamentals of Research CSS 506, 2003/06.
- 26- Mertens , D. M. (2010). *Research and Evaluation in Education and Psychology*, Integrating Diversity with Quantitative, Qualitative, and Mixed Methods, 3<sup>rd</sup> edition. Gallaudet University, SAGE Publications, Inc. USA.

- 27- Motteram, G.(2013). *Innovations in Learning Technologies for English Language teaching*, Innovation Series, British Council Teaching English. Spring Gardens, London.
- 28- Motteram, G. (2013). *Innovations in learning technologies for English language teaching*, British Council, teaching English.
- 29- Nunan, D.(1992). *Research Methods in Language learning*, Cambridge University Press.
- 30- Oxford Learner's Pocket Dictionary (2005). New edition, Oxford University Press.
- 31- Patru, M. and Khvilon, E.(2002). *Information and Communication Technologies in Teacher Education, a Planning Guide*. Division of Higher Education (2002), UNESCO.
- 32- Patru, M. and Khvilon, E.(2002). *Information and Communication Technology in Education, A Curriculum for Schools and Programme of Teacher Development*, UNESCO, 2002.
- 33- Pelgrum, W. J. and Law, N.(2003). *ICT in education around the world: trends, problems and prospects*. Paris: UNESCO.
- 34- Potter, W. (1996). *An analysis of thinking and research about qualitative methods*. Mahwah: NJ. Lawrence Erlbaum Associates.
- 35- Pritchard, A. (2007). *Effective Teaching with Internet Technologies, Pedagogy and Practice*, (P.C.P ) Paul Chapman Publishing. SAGE Publications Company, London.
- 36- PROGRAMME D'ANGLAIS DEUXIEME LANGUE ETRANGERE (2006), Troisieme Annee Secondaire, 3<sup>e</sup>AS. Filières : Mathématiques/ Techniques Mathématiques/Sciences Experimentales/ Gestion-Economie/Lettres/Philosophie/Langues Etrangères, Ministère De L'éducation Nationale, Direction De L'enseignement Secondaire, Commission Nationale des Programmes.
- 37- Rank, T., Chris, W. and Trevor, M. (2011). *Teaching English Using ICT, A practical guide for secondary school teachers*, Continuum International Publishing Group.
- 38- Rogers, E. M. (2003). *Diffusion of Innovations*, 5<sup>th</sup> edition, Everett M. Rogers, Free Press (FP): New York, London, Toronto, Sydney, Singapore
- 39- Seliger, H.W. and Shohamy E.(2000).*Second Language Research Methods, 5<sup>th</sup> edition*, Oxford University Press.
- 40- Somekh, B. and Davis, N. (2005). *Using Information Technology Effectively in Teaching & Learning*. Studies in pre-service & in-service teacher education. Taylor & Francis e-Library, 2005, Routledge, London & New York.

- 41- Somekh B. and Lewin C. (2005). *Research methods In The Social Sciences*, Sage Publications Ltd, London \_ Thousand Oaks \_ New Delhi
- 42- The Concise Oxford English Dictionary (2012). Eleventh Edition, PC-Cd rom.
- 43- Tomei, L.A. and Edd (2003). *Challenges of Teaching with Technology Across the Curriculum: Issues and Solutions*.
- 44- Tomei, L.A. (2005). *Taxonomy for the Technology Domain*. USA: Information science publishing.
- 45- Tomei, L.A. (2008). *Adapting Information & Communication Technologies for Effective Education*, Robert Morris University, USA. Information Science Reference, Hershey-New York, London, Melbourne, Singapore
- 46- UNESCO (2005). *Information and communication Technologies in schools, A Handbook For Teachers Or How ICT Can Create New, Open Learning Environments*. Division of Higher Education, UNESCO, 2005

#### Articles

- 1- Al Mulhim, E. (2014). *The Barriers to the Use of ICT in Teaching in Saudi Arabia: A Review of Literature*, Universal Journal of Educational Research, Plymouth University, Drake Circus, Plymouth, PL1 3EU, United Kingdom. Horizon Research Publishing.
- 2- Alsied and Pathan (2013), *The Use of Computer Technology in EFL classrooms: Advantages and Implications*. Ij-ELTS: International Journal of English Language & Translation Studies. Vol.1, Issue:1 April-June, 2013, accessed and retrieved on August 2014, from: <http://eltsjournal.org/archive/>
- 3- Balanskat, A. Blamire, R. Kefala, S. (2006). *The ICT Impact Report*, A review of studies on schools in Europe, Education & Culture European Communications, 2006.
- 4- BECTA (2004). *A Review of The Research Literature On Barriers To The Uptake ICT By Teachers*, Becta ICT Research, Version 1. June 2004, Becta 2004, Retrieved on July 07<sup>th</sup>, 2013 from: <http://www.becta.org.uk>
- 5- Bhasin, B. (2012), *Integration of Information and Communication Technologies in Enhancing Teaching and Learning*, Contemporary Educational Technology, 2012. KCS College of Education for Women, Jammu-India.
- 6- Bingimlas, K., A. (2009). *Barriers to the Successful Integration of ICT in Teaching and Learning Environments: A Review of the Literature*, Eurasia Journal of Mathematics, Science & Technology Education, 2009, 5(3), p235-245. EURASIA

- 7-Blurton, C. (1999). *New Directions of ICT-Use in Education*, UNESCO's World Communication and Information Report 1999.
- 8- Bokova, I. (2013). *Algeria Institutionalises ICT in education*, Director General, UNESCO, Retrieved on Apr.28th, 2014 from: <http://www.africatelecomit.com/algeria-institutionalises-ict-in-education>
- 9-Buabeng-Andoh, C. (2012). *Factors Influencing Teachers' Adoption and Integration of Information and Communication Technology into Teaching: A review of the Literature*, Pentecost University College, Ghana. *International Journal of Education and Development using information and Communication Technology (IJEDICT)*, 2012, Vol.8, Issue 1, pp.136-155.
- 10- Chhabra, P. (2012). *Use of E-Learning tools in teaching English*, *International Journal of Computing & Business Research* ISSN (Online): 2229-6166, Proceedings of 'I-Society 2012' at GKU, Talwandi Sabo Bathinda (Punjab)
- 11- Cox, M., Webb, M., Abbott, C., Blakeley, B., Beauchamp, T. and Rhodes V. (2003). *ICT and Pedagogy, A Review of the Research Literature, ICT in School Research and Evaluation Series-N°18*, BECTA report for the Dept. of Education and skills (Dfes) accessed and retrieved on Dec.2013, from: [http://www.becta.org.uk/page\\_documents/research/ict\\_attainment\\_summary.pdf](http://www.becta.org.uk/page_documents/research/ict_attainment_summary.pdf)
- 12- Cukor-Avila, P. (1995). *Observer Paradox*, retrieved on Monday, Dec.6<sup>th</sup> 2014, from: <http://everything2.com/title/observer%2527s+paradox>
- 13- Ebraik Deen, H. E. (2011). *Investigating Libyan Teachers' Attitudes Towards Integrating Technology in Teaching English in Sebha Secondary Schools*. *Academic Research International*. Volume N1 Issue 3 – Nov 2011, accessed on July 15<sup>th</sup>, 2013.
- 14- Gilakjani, A.P., Leong, L.M. and Ismail, H.N. (2013). *Teachers Use of Technology and Constructivism*, *I. J. Modern Education and Computer Science*, 2013, 4, 49-63 in *Mecs* in <http://www.mecs-press.org>.
- 15- Ginsburg, D. (2010). *The Overhead Projector: Don't Overlook It (Part 1)*. Accessed on Sep.3rd, 2013 and retrieved from: [http://blogs.edweek.org/teachers/coach\\_gs\\_teaching\\_tips/2010/11/the\\_overhead\\_projector\\_dont\\_overlook\\_it\\_part\\_1.html](http://blogs.edweek.org/teachers/coach_gs_teaching_tips/2010/11/the_overhead_projector_dont_overlook_it_part_1.html)
- 16- Granger, C. A., et al. (2002). *Factors contributing to teachers' successful implementation of IT*. *Journal of Computer Assisted Learning*, vol. 8, pp. 480- 488.



- 17- Guemide, B. and Benachaiba, C. (2012). *Exploiting ICT and e-Learning in Teacher's Professional Development in Algeria: The Case of English Secondary School Teachers*, *Turkish Online Journal of Distance Education-TOJDE* July 2012, Volume: 13 Number: 3 Article 2, accessed on June 2014 and retrieved from :  
[http://tojde.anadolu.edu.tr/tojde48/articles/article\\_2.htm](http://tojde.anadolu.edu.tr/tojde48/articles/article_2.htm)
- 18- Guerza, R.(2015).*ICT in the Algerian EFL Classrooms: An Innovative Means to Enhance Learners' Autonomy*, *International Journal for Infonomics (IJI)*, Volume 8, Issues 1/2, March/June 2015. El Hadj Lakhdar University, Batna, Algeria. Infonomics Society copyright 2015.
- 19- Hamdy, A. (2007). *ICT in Education in Algeria, Survey of ICT and Education in Africa Country Web Report*. Retrieved on June 15th, 2013 from: <http://www.infodev.org>
- 20- Hatlevik, O., E., & Arnseth, H. A. (2012). *ICT, Teaching and Leadership: How do Teachers Experience the Importance of ICT-Supportive School Leaders?*, *Idunno.no, Nordisk tidsskriftdatabase*, Universitetsforlaget, *Nordic Journal of Digital Literacy*, vol 7, 2012, N° 01, pp: 55-69
- 21- Hennessy, S., Ruthven, K. and Brindley, S.(2005). *Teacher Perceptives on Integrating ICT into Subject Teaching: Commitment, Constraints, Caution, and Change*, *Journal of Curriculum Studies*, 2005, Vol.37, N°2, 155-192. Routledge Falmer, Taylor and Francis Group, Ltd in: <http://www.tandf.co.uk/journals>
- 22- Hew, K. F., & Brush, T. (2007). *Integrating Technology in k-12 Teaching and Learning: Current Knowledge Gaps and Recommendations for Future Research*. *Educational Technology Research and Development*, vol.55, pp. 223-253.
- 23- Higgins, S., Xiao, Z. and Katsipataki M.(2012). *The Impact of Digital Technology on Learning, A Summary for the Education Environment Foundation*, full report, school of education, Durham University, Education Endowment Foundation.
- 24- Hooker, M. n.d., *Models and Best Practices in Teacher Professional Development*, Education Specialist, GeSCI. Retrieved on Oct. 10<sup>th</sup> 2013 from:  
[http://www.gesci.org/old/files/docman/Teacher\\_Professional\\_Development\\_Models.pdf](http://www.gesci.org/old/files/docman/Teacher_Professional_Development_Models.pdf)
- 25- Huang, H. M. and Liaw, S. S. (2005). *Exploring users' attitudes and intentions towards the Web as a survey tool*, *Computers in Human Behaviour*, vol. 21, no. 5, pp. 729-743.
- 26- Hussein, A. (2009). *The use of Triangulation in Social Sciences Research: Can qualitative and quantitative methods be combined?*, *Journal of Comparative Social Work* 2009/1, University of Agder, Norway/Mzumbe University, Tanzania.
- 27- InfoDev. (2014). *Knowledge Map: Impact of ICT on Learning and Achievement* Retrieved on January 15<sup>th</sup>, 2014 from: [www.infoDev.org](http://www.infoDev.org)

- 28- Jones, A.(2004). *A review of the research literature on barriers to the uptake of ICT by teachers*, British Educational Communications and Technology Agency, accessed and Retrieved on September 01st, 2013, from:  
[https://www.google.dz/?gws\\_rd=cr&ei=bEhDUrHiKMbWtAbo9YD4CQ#q=Jones%2C+A.\(2004\).+A+review+of+the+research+literature+on+barriers+to+the+uptake+of+ICT+by+teachers](https://www.google.dz/?gws_rd=cr&ei=bEhDUrHiKMbWtAbo9YD4CQ#q=Jones%2C+A.(2004).+A+review+of+the+research+literature+on+barriers+to+the+uptake+of+ICT+by+teachers)
- 9- Kappenthuler, S. & Oettmeier, K. (2014). *Triangulation, Concept, Applications and Limitations*, Research Methodology I, ETH Zurich, University of St.Gallen, Fall 2014. Accessed on dec.5<sup>th</sup>, 2014 and retrieved from:  
[http://webcache.googleusercontent.com/search?q=cache:http://www.tim.ethz.ch/education/courses/Fall\\_Semester\\_2014/DocSem\\_Fall14/15\\_Presentation](http://webcache.googleusercontent.com/search?q=cache:http://www.tim.ethz.ch/education/courses/Fall_Semester_2014/DocSem_Fall14/15_Presentation)
- 30- Korte, W.B. & Husing, T. (2007). *Benchmarking access and use of ICT in European schools 2006: Results from Head Teacher and a Classroom Surveys in 27 European Countries*, e-learning papers, vol. 29, no.10, pp. 1-6.
- 31- Labov, W. (1984). *Guided Conversation*, retrieved on March 18, 2015 from:  
<http://www.nytud.hu/buszi/wp2/node6.html>
- 32- Laforest , J. (2009). *Guide to Organizing Semi-Structured Interviews with key informant*, Charting a course to safe living, Vol. 11, Safety Diagnosis tool kit for local communities, Institut national de santé publique, Québec, Ministère de la sécurité publique, Gouvernement du Québec(2009).
- 33- Lamtara, S. (2014). *Teachers' ICT Practices: A case Study of a Moroccan EFL Teacher*, Arab World English Journal, AWEJ Vol.5 N°5, 2014, accessed on June 2015 and retrieved from: [www.awej.org](http://www.awej.org)
- 34- Lau, B.T. & Sim, C.H. (2008). *Exploring the Extent of ICT Adoption among Secondary School teachers in Malaysia*. International Journal of Computing and ICT Research, vol. 2, no.2, pp. 19-36. Accessed on August 20<sup>th</sup>, 2013, and retrieved from:  
[https://www.google.dz/?gws\\_rd=cr&ei=bEhDUrHiKMbWtAbo9YD4CQ#q=International+Journal+of+Computing+and+ICT+Research%2C+vol.+2%2C+no.2%2C+pp.+19-36](https://www.google.dz/?gws_rd=cr&ei=bEhDUrHiKMbWtAbo9YD4CQ#q=International+Journal+of+Computing+and+ICT+Research%2C+vol.+2%2C+no.2%2C+pp.+19-36).
- 35- Makhoukh, S. (2012). *Using ICT Technology When Teaching A Foreign Language In An Algerian University*, retrieved on Dec.2<sup>nd</sup> of August 2014, from:  
<http://inspiremagazine.anasr.org/opinion-using-ict-technology-when-teaching-a-foreign-language-in-an-algerian-university/>
- 36- Malderez, A. (2003). *Key Concepts in ELT*, Observation, ELT Journal Volume 57/2 April 2003. Oxford University Press.
- 37- Medjahed, F.Z. (2011). *Teaching English in Algerian Secondary Schools: State of the Art*. from: Communication Science and technologie N°9, Janvier 2011 Cost, Department of Languages, ENSET Oran.

- 38- Mehdinezhad, D. (2011). *Teachers' Instructional beliefs about Student-centred Pedagogy*, International Journal on New trends in Education and their Implications. Vol.2, N°2, Article 5. Ijonte 2011, accessed on Oct.2014 and retrieved from: [www.ijonte.org](http://www.ijonte.org)
- 39- Mutlaq Al-zube, F. A. (2013). *The Difference between the Learner-centred Approach and the Teacher-centred Approach in Teaching English as a Foreign Language*, English Language Department, Majmaah University. Educational Research International Vol.2 N°2, Oct.2003, SAVAP International, accessed on sept.2014 and retrieved from: <http://erint.savap.org.pk/vol2n2.html>
- 40- National Center for Education Statistics (NCES).(2000). *Teachers' Tools for the 21st Century*, Statistical Analysis Report, A Report on Teachers' Use of Technology, U.S. Department of Education Office of Educational Research and Improvement, NCES 2000-102
- 41- Ndawi, V.E., Thomas, K .A. and Nyaruwata, T.L.(2013). *Barriers to Effective Integration of Information and Communication Technology in Harare Secondary Schools*, International Journal of Science and Research (IJSR), India Online ISSN: 2319-7064, Volume 2 Issue 9, September 2013.
- 42- Pedersen, S. and Liu, M.(2003). *Teachers' Beliefs about Issues in the Implementation of a Student-Centered Learning Environment*, ETR & D, Vol.51, N°2,2003,pp.57-76. Dept. of Educational Psychology at Texas A& M University, College Station.
- 43- Punie, Y., Ala-Mutka, K . and Redecker, C.(2008). *ICT for Learning, Innovation and Creativity, Policy brief*, JRC Technical Notes, JRC European Commission, Institute for Prospective Technological Studies. Luxembourg: Office for Official Publications of the European Communities.
- 44- Rababah, L. M., Bani Melhem, N. Z., Jdaitawi, B.S. and Rababah, O.M.(2012). *EFL Teachers' Barriers to the Use of ICT in Instruction in Jordan*, First International Conference on Behavioural and Social Science Research (ICBSSR 2012), Universiti Tunku Abdul Rahman, Kampar, Perak, Malaysia, November 2<sup>nd</sup>, 2012.
- 45- Rahimi, M. & Yadollahi, S. (2011). *ICT Use in EFL Classes: A Focus on EFL Teachers' Characteristics*. World Journal of English Language. Vol. 1, No. 2; October 2011. In: [www.sciedu.ca/wjel](http://www.sciedu.ca/wjel). English Department, Faculty of Humanities, Shahid Rajaee Teacher Training University, Lavizan, Tehran, Iran.
- 46- Rangaswamy, A. and Gupta, S. (2000). *Innovation Adoption and Diffusion in the Digital Environment: some research opportunities*.

- 47- Riley, J. (2012). *ICT - What is it?* Accessed on August 21<sup>st</sup>2013;and retrieved from [http://www.tutor2u.net/business/ict/intro\\_what\\_is\\_ict.htm](http://www.tutor2u.net/business/ict/intro_what_is_ict.htm)
- 48- Rozell, E. J. & Gardner, W. L. (1999). *Computer-related success and failure: A Longitudinal Field Study of the Factors Influencing Computer-Related Performance*, *Computer in Human Behaviour*, vol. 15, no. 1, pp. 1-10.
- 49- Russell, M., Bebell, D., O'Dwyer, L. and O'Connor, K. (2003). *Examining Teacher Technology Use: Implication for pre-service and in-service teacher preparation*. *Journal of Teacher Education*, vol. 54, no. 4, pp. 297-310.
- 50- Russell, M., Bebell, D., O'Dwyer, L. M. and Tao, W. (2007). *How teachers' uses of technology vary by tenure and longevity*. *Journal of Educational Computing Research*, vol. 37, no. 4, pp. 393-417.
- 51- Samuel, R.J. and Zaitun, A.B. (2006). *The Utilization and Integration of ICT Tools in Promoting English Language teaching and learning: Reflections from English option teachers in Kuala Langat District, Malaysia*, *International Journal of Education and Development using Information and Communication Technology (IJEDICT)*,2006, Vol 2, Issue 2,pp.4-14.
- 52- Sawahel, W. (2009). *ALGERIA: ICT Innovation Start-up Initiative*, *University World News*, the Global Window on Higher education, Issue N° 00317. Retrieved on April 28<sup>th</sup> 2014 from: <http://www.universityworldnews.com/article.php?story=20091029175141882>
- 53- Singh, K.S. (2012). *Teachers' Attitude Towards Information and Communication Technology (ICT)*, *An Internationally Indexed Refereed Research Journal & A complete Periodical dedicated to Humanities & Social Science Research*. Half yearly Vol-3, Issue-2, 15 Jul-2012.
- 54- Tay, L. Y., Lim, S. K. , Lim, C. P. and Koh, J. H. L. (2012). *Pedagogical Approaches for ICT Integration into Primary School English and Mathematics: A Singapore case study*, *Australasian Journal of Educational Technology*, 28(4), 740-754. National Institute of Education, Nanyang Technological University, Singapore. Accessed on July 2015 and retrieved from: <http://ajet.org.au/index.php/AJET/issue/view/10>
- 55- Tella, A . and Adu, E.O. (2009). *Information Communication Technology (ICT) and Curriculum Development: challenges for education for sustainable development*, *Indian Journal of Science and Technology*, Vol.2 N°3 (Mar.2009). Dept. of Library & Information Studies, Univ. of Botswana, Teacher Education dept., Univ. of Ibadan, Nigeria.
- 56-Ulewicz, M. & Beatty, A.(2001). *The power of Video Technology in International Comparative Research in Education*. National Research Council, National Academy Press, Washington, D.C.

- 57- Van Braak, J., Tondeur, J., & Valcke, M.(2008). *A multidimensional approach to determinants of computer use in primary education: Teacher and School Characteristics*, Journal of Computer Assisted Learning, vol. 24, pp. 494-506.
- 58- Venezky, R.(2004).*Technology in the Classroom: Steps Toward a New Vision in Education*. Communication and Information, 4, (2004): 3-21.
- 59- Warschauer, M. & Meskill, C .(2000). *Technology and Second Language Teaching*, retrieved on Jan. 5th, 2015 from:  
[http://www.gse.uci.edu/person/warschauer\\_m/tslt.html](http://www.gse.uci.edu/person/warschauer_m/tslt.html)
- 60- Wheeler, S. (2001). *Information and Communication Technologies and the Changing Role of the Teacher*, Journal of Educational Media, Vol.26, N°1, 2001.University of Plymouth, UK, Taylor & Francis Ltd.
- 61- Wright P. and Macrow V. A. (2006). *Integrating ICT in Pre-Service Teacher Education, Reframing Teacher Education* (work in progress), Paper presented at the British Educational Research Association annual Conference, University of Warwick.

# Appendices

**Appendix - A Authorization for Administering Teachers' Questionnaire**

To the General Inspector of English  
of the Wilaya of Ain Temouchent  
*Mr. Lakhdar Fridi*

**AUTHORIZATION LETTER:**

*Requesting Questionnaire Administration Approval*

Dear Sir,

I am writing you as I would like to ask for your approval for my research to be conducted in the secondary schools of Ain Temouchent, and mainly to allow the administration of a questionnaire to the Secondary School Teachers of English on the integration of ICT tools as a support in teaching English as a foreign language in the secondary public schools in the town of Ain Temouchent during the seminar which will take place on December 12<sup>th</sup>, 2013.

The gathered information will be used to write a dissertation for a Magister Degree in Didactics from the University of Jilali EL Yabes, Sidi Bel Abbes. Your Authorization is an ethical requirement.

I am also interested in finding out about Algerian Secondary School Teachers views about ICT implementation in ELT lesson planning and teaching practice. I am collecting these pieces of information through the use of face-to-face interview. This study involves one hundred and ten (110) secondary schools teachers from both sexes. The participants will be from almost all schools in the town of Ain Temouchent including those in the outskirts. Private schools are not part of this study.

It is expected that the results of the research will guide future research and will emphasize the importance of ICT integration for teachers, students, parents and decision-makers. It will also contribute to the improvement of classroom English language practice and conducting other research in the future.

Participants' anonymity will be guaranteed and maintained. They will be requested not to insert any personal information or any of their identities in the questionnaire completion. Data will be stored securely and destroyed after the completion of the study. Participants will be informed about the work on completion through a summary of the findings which will be sent to each participant's e-mail.

Thank you for your cooperation.

Best regards

Reply:

*Read and  
approved*

Yours sincerely,

*Abdelkader Touami*

  
مدير التربية والتكوين  
المادة الانجليزية  
لخضر فريدي







### 3.3 Did you get any support when implementing ICT in your class from:

	No Support	Technical Support	Pedagogical Support
-A more experienced / knowledgeable colleague "teacher" ?			
-Other school staff?			
-Experts from outside the school?			
-An ICT online-training website?			

## 4/ ICT Competence

### 4.1. To what extent are you confident while performing the following ICT tasks?

*Tick one box for each row*

	A lot	Somehow	A little	None
-Write a text using Microsoft Word processing programme.				
-Email a file to another teacher or send messages.				
-Create PowerPoint presentation with simple animation of Pictures, video and integrate into the lesson activities.				
-Participate in educational discussions in forums, blogs social networks on the net like Facebook or Twitter.				
-Download and install software in a computer.				

### 4.2. Name one (1) or two (2) websites that you usually visit for educational purposes:

(If you don't remember very well, write the approximate *name of the site only*)

- <http://www.....>

- <http://www.....>

### 4.3. Do you have a professional e-mail address?

Yes

No

## 5/ ICT Integration Frequency:

### 5.1. In which phase of your lesson plan do you use ICT?

**a-** In the pre-lesson phase

**b-** In the lesson phase

**c-** In the post-lesson activity

**d-** In all lesson steps

### 5.2. Describe your teaching aspects and practices:

*Tick one box for each row*

	always	usually	Sometimes	Rarely	Never
- The whole class is involved in the lesson.					
-Pupils are engaged project-based activities					
- Pupils do collaborative work in groups.					
-Pupils discuss ideas with other pupils and their teacher.					
- Pupils take part in assessing their work: self or peer- correction.					
- The ICT material prepared is appropriate to pupils' different learning styles: visual, auditory, tactile...					
- preview ICT content and adapt it before presenting it class.					

**5.3. Web-Based Lessons: How often do you do the following activities when preparing lessons?**

*Tick one box for each row*

	<i>daily</i>	<i>weekly</i>	<i>Several times a month</i>	<i>rarely</i>	<i>Never</i>
-The teacher searches the internet to collect information to prepare lessons.					
-S/he browses the web to collect learning material for classroom practice.					
-S/he browses for material to facilitate teaching difficult concepts and skills.					
-S/he Looks for online professional training opportunities					

**5.4. Can you think of some tips on how to introduce ICTs in an English teaching class?**

First, ..... then, .....

Next ..... After that .....

**P.s.** you can add more tips on a free paper.

**5.5. Think of a successful lesson you have done with your class. Very briefly describe the tools used**

**and what was your role in it**.....

.....

**6/ ICT Challenges and Difficulties**

**To what extent are these obstacles affecting your ICT implementation in teaching?**

*Tick one box for each row*

	<b>Yes, a lot</b>	<b>Partially</b>	<b>A little</b>	<b>No, not at all</b>
-Insufficient number of computers / laptops.				
-School computers out of date and / or needing repair				
-Lack of adequate ICT skills of teachers				
-Insufficient or no technical assistance provided for teachers when a computer freezes or break down in classes				
-Too difficult to integrate ICT use into the curriculum.				
-Lack of ICT-based pedagogical models to follow.				
- School space organization (classroom size and furniture, etc.)				

*Thank you for your cooperation*

## Appendix . C

## Pupils' Questionnaire

Thank you for agreeing to be part of this study. We assure you that all the information you supply will serve research purposes only and you will stay anonymous.

### BACKGROUND INFORMATION

**School Name:** .....

**Level:** .....

**Age:** Tick ( x ) in the box to choose your age

14-16:

17-19:

### ICT IN PUPILS' SOCIAL ENVIRONMENT

**1-Do you have a computer at home?** Yes  No

**2- Do your parents encourage you to use technology tools in learning?**

Yes, always  sometimes  not at all

**3- Does any member of your family or friends use the computer in learning?**

*Tick on the appropriate items below*

Father  mother  brother  sister  friend  others

nobody

### ICT TRAINING AND MANIPULATION

**4- Did you study informatics?** Yes  No

If yes, how long have you been studying it? .....

**5- How well do you manipulate a computer?**

Very well  a little  Not at all

**6-Tick (x) the Computer, Mobile or Tablet applications that you can perform:**

Microsoft Word	<input type="checkbox"/>	Playing Games	<input type="checkbox"/>	Sending and receiving emails	<input type="checkbox"/>
Microsoft Excel	<input type="checkbox"/>	Microsoft Power point	<input type="checkbox"/>	Chatting with Facebook or Skype	<input type="checkbox"/>
Listening to music	<input type="checkbox"/>	Downloading lessons	<input type="checkbox"/>	Drawing pictures or cards.	<input type="checkbox"/>
Google search	<input type="checkbox"/>	Texting in English (SMS)	<input type="checkbox"/>	Taking photos and videos	<input type="checkbox"/>

### ICT IN CLASSROOM LEARNING

**7-How often does your English teacher use ICT with you in class?**

Regularly  Sometimes  Rarely  Never

**8-How useful are these technology applications for your English language learning?**

Application of Technology Used in Class	Useless	Somehow Useful	Very Useful	Undecided
-Using PowerPoint presentation in class				
-Using MS Office (word, excel, applications) to write English.				
-Connect to Internet to get information to make team projects				
-Using CD's / DVD 's for lesson practices				
-Using email to send your homework to the teacher.				
- Using email to exchange learning material with your Classmates				
-storing lessons in Flash-disk or memory cards				

*Tick (x) in each column according to the degree of usefulness.*

**9-The use of ICT has improved my ability in:** *Tick (x) the skills improved.*

Listening	Speaking	Reading	Writing

**10-Does ICT help you to:** *Tick one answer in each line in the table*

Statements	A lot	Somehow	Never	Don't know
- Store and retrieve information easily?				
- Check information at any time at home?				
- Review exercises and practice more at home?				
-Work collaboratively in classroom on groups projects.				
-Learn more?				
-Achieve better marks?				
-Think critically about your learning?				
-Learn independently?				
-Solve problems related to English learning?				
-To cope with real life situations?				

*DIFFICULTIES IN USING ICT IN SCHOOL*

**11-What difficulties do you face in class while using ICT with your English teacher?**

*Tick one answer for each statement in the table*

Difficulties	Yes	No	Not sure
-No computer available			
-Most school computers are out of use (damaged)			
-There is no technician in school to repair the damaged computers or help teachers			
-The teacher does not manipulate the computer very well.			
Others: .....			

*THE LEARNER 'S OPINION*

**12-Do you think that integrating Information and Communication Technologies as part of your permanent class learning is:**

Necessary                       Unnecessary                       Don't know

Explain: .....

*Thank you very much for your cooperation*

استبيان للتلاميذ

نشكركم على قبولكم المشاركة في هذا البحث العلمي، و نعلمكم أن كل المعلومات التي ستدلي بها ستستعمل في البحث لا أكثر و ستبقى هويتكم مجهولة.

معلومات أساسية

اسم الثانوية: .....

المستوى : .....

السن :

ضع علامة (x) في الخانة المناسبة لاختيار سنك

16 - 14

19 - 17

تكنولوجيا المعلومات والاتصال في البيئة الاجتماعية للتلاميذ

1- هل تملك جهاز كمبيوتر في المنزل؟  نعم:  لا:

2- هل يحثك والداك على استعمال وسائل التكنولوجيا في التعلم؟

نعم، باستمرار  أحيانا  أبدا

3- هل يستعمل أي من أفراد عائلتك أو أصدقائك الكمبيوتر للتعلم؟

اختر الإجابات المناسبة

الأب  الأم  الأخ  الأخت  الصديق  شخص آخر   
لا أحد

التدريب و قدرة التحكم في تكنولوجيا المعلومات والاتصال

4- هل درست المعلوماتية و الكمبيوتر؟  نعم:  لا:

إذا كان جوابك نعم، حدد مدة الدراسة؟ .....

5- حدد قدراتك في التحكم باستعمال الكمبيوتر.

جيدة  ضعيفة  منعدمة

6- ضع علامة (x) على التطبيقات التي يمكنك القيام بها على الكمبيوتر، الهاتف النقال أو اللوحة الإلكترونية من بين:

<input type="checkbox"/>	ميكروسوفت وورد	<input type="checkbox"/>	الألعاب الإلكترونية	<input type="checkbox"/>	إرسال و تلقي البريد الإلكتروني
<input type="checkbox"/>	ميكروسوفت اكسل	<input type="checkbox"/>	ميكروسوفت باوربوينت	<input type="checkbox"/>	الدرشة على الفايبروك أو سكايب
<input type="checkbox"/>	الاستماع إلى الموسيقى	<input type="checkbox"/>	تحميل الدروس	<input type="checkbox"/>	رسم صور أو بطاقات
<input type="checkbox"/>	البحث في غوغل	<input type="checkbox"/>	بعث الرسائل النصية بالإنجليزية	<input type="checkbox"/>	أخذ الصور و الفيديوهات

تكنولوجيا المعلومات والاتصال للتعلم في القسم

7- هل يستعمل أستاذ اللغة الإنجليزية وسائل التكنولوجيا للإعلام و الاتصال في القسم؟

نعم، باستمرار  أحيانا  ناذرا  لا، أبدا

8- مل هي فوائد التطبيقات التكنولوجية التالية في تعلمك للغة الإنجليزية؟  
رتب إجاباتك في كل سطر حسب درجة الإفادة

غير متأكد	مفيدة جدا	مفيدة نوعا ما	غير مفيدة كليا	التطبيقات التكنولوجية المستعملة في القسم
				استعمال عروض الباوربوينت في القسم
				استعمال مايكروسوفت (وورد، اكسل، تطبيقات) للكتابة بالإنجليزية
				استعمال الانترنت للبحث عن معلومات للقيام بعروض جماعية
				استعمال الأقراص المضغوطة للدروس و التمارين
				استعمال البريد الالكتروني لإرسال الواجب المنزلي للأستاذ
				استعمال البريد الالكتروني لتبادل المعلومات مع زملائك
				تخزين الدروس على الفلاش ديسك أو بطاقات الذاكرة

9- لقد طوّرت وسائل التكنولوجيا للإعلام و الاتصال قدراتي في:  
ضع علامة (x) أمام القدرات المطوّرة.

الاستماع	التكلم و المحادثة	القراءة	الكتابة

10- هل تحفزك وسائل التكنولوجيا للإعلام و الاتصال على:  
اختر إجابة واحدة في كل سطر و ضع علامة (x)

لا أدري	لا أبدا	نوعا ما	نعم كثيرا	بيانات و تطبيقات
				تخزين و استرجاع المعلومات بسهولة أكثر؟
				تتأكد من معلوماتك في أي وقت بالمنزل؟
				إعادة النظر في التمارين و القيام بتطبيقات أكثر في المنزل؟
				التعاون في القسم للقيام بالواجبات الجماعية
				التعلم أكثر؟
				الحصول على علامات أو نقاط أحسن؟
				التفكير بطريقة نقدية حول تعلمك؟
				التعلم بصفة ذاتية و مستقلة؟
				التغلب على الصعوبات المتعلقة بتعلم الإنجليزية؟
				التعامل مع متطلبات الحياة اليومية؟

### صعوبات استعمال تكنولوجيا المعلومات والاتصال في المدارس

11- ما هي الصعوبات التي تواجهك في القسم عند استعمال وسائل التكنولوجيا للإعلام و الاتصال مع أستاذ اللغة الإنجليزية؟  
اختر إجابة واحدة في كل سطر و ضع علامة (x)

لست متأكدا	لا	نعم	الصعوبات
			عدم وجود كمبيوتر
			معظم أجهزة الكمبيوتر في المؤسسة معطلة
			لا يوجد تقني للإعلام الآلي في المؤسسة لإصلاح أجهزة الكمبيوتر المعطلة أو مساعدة الأستاذ
			الأستاذ لا يتقن استعمال الكمبيوتر
			صعوبات أخرى أذكرها.....

### رأي المتعلم

12- برأيك هل إدماج وسائل التكنولوجيا للإعلام و الاتصال بصفة دائمة في تعلم اللغة الإنجليزية بالقسم:  
 ضروري  غير ضروري  لا أدري

اشرح:

شكرا جزيلاً على تعاونكم

## Appendix- E

## ICT-based Lesson Observation Form

### Bio-data information

School Name: .....

The Observed Teacher: Male / Female

Level: .....

Age: .....

Stream: .....

Teaching Experience: .....

Timing (optional): .....

N° of pupils: .....

### Lesson Observation

UNIT: .....

What Type of Discourse is the lesson: *Circle the right item below:*

- a) Descriptive      b) Argumentative      c) Prescriptive      d) Expository

1- Lesson Presented: *choose among items below:*

- a) Listening & Speaking      b) Reading & Writing      c) Write it Up  
d) Pronunciation & spelling      e) Grammar      *Other:.....*

2 - Classroom Grouping: a) Class Work   b) Group Work   c) Individual Work   d) Pair Work

3 - What is the task given to pupils? .....

4 -Which ICT tools are integrated in the lesson?

- a) Laptop with data show   b) a projector      c) an audio device      d) a Video display  
e) a mobile phone      f) a tablet.      *Others: .....*

5 -In which lesson step is ICT integrated? :      a- The Pre-Lesson Phase  
b- During the Lesson Phase      c- Post the Lesson Phase

6 -The type of teaching the teacher is adopting is:

- a- Teacher Centered      b- Learner Centered

7-Is the lesson content presented through ICT authentic?

Yes       No

What is it? .....

8- Does the content presented through ICT appeal to students' needs and abilities?

Yes       No       Somehow

9- Does ICT lesson planning reflect the official curriculum requirements?

Yes       No       a Little bit

10 -Did the use of technology serve the lesson objectives?

Yes       Somehow       Not at all

*Other Specify:* .....

11- Did the teacher achieve his lesson objectives?

Yes       No       Somehow

If No, why? .....

12- Did the teacher face any difficulties when using ICT?

Yes, He/She did       No, not at all

If yes, what were they? .....

How did he manage to solve the problem?  
.....



## Appendix- F                      Samples of Lesson Observations

**Unit: 4 -Consumer and Safety**

**Lesson Plan: 1**

**Level: 3<sup>rd</sup> Year**

**Date:** Jan. 29th, 2014

**Time:** 8 to 9 a.m.

### **Pre-reading (video-viewing)**

**Aim:** Anticipating the topic of the lesson.

What is the topic of the video?

**Keys:** It represents the increasing obesity rates among young people.

**While reading:** *Read the text then do the activities*

### **Activity1:**

**Objective:** Skimming for a gist.

The text is about:

- a. The importance of food for health.
- b. The strong link between fast food and obesity.
- c. How to cure obesity.

**Keys:** b. The strong link between fast food and obesity.

### **Activity2:**

**Aim:** Reading for specific information.

Are these statements true or false?

- a. USA is the last country being affected by the problem of obesity.
- b. Fast food is the major cause of obesity.
- c. It is absolutely impossible to decrease the quality of consumed fast food.
- d. Food containing hydrogenated oils is healthy.

**Keys:** a. False   b. True   c. False   d. False

### **Activity3:**

**Aim:** Reading for more details and comprehension of the text.

Answer the following questions according to the text

- a. What health troubles are caused by obesity?
- b. What is the main reason for the increasing obesity rates?
- c. What do people need to decrease the amount of fast food consumption?
- d. What is meant by portion control?

**Keys:** a. Diabetes, Cancer, Cardiovascular diseases.

b. Fast food industry.

c. People need to consume more fruits and vegetables, and replace hydrogenated oils with canola and olive oil.

d. It is the measurements and tools to measure how much we eat.

**Activity 4:****Aim:** Identifying the new vocabulary related to the topic.

Match words with their synonyms

Words	Synonyms
a. Teenagers	1. Reduce
b. Obese	2. Effect
c. Impact	3. Adolescents
d. Decrease	4. Overweight

**Keys:** a. 3 b. 4 c. 2 d. 1**Post-reading****Aim:** Writing a list of instructions and recommendations preventing obesity.

-Write the list of instructions and recommendations for the obese adolescents of your age to make them lose weight.

**Keys:**

- Eat vegetables and fruits
- Walking and jogging are beneficial for your health
- Avoid eating fat, sugary, pastry...

**Written Expression****Aim:** Writing a letter of complaint.

-Write a letter of complaint to the mayor of Ain Temouchent asking him to remove the fast food outlets far from your school. State in your letter the bad consequences of fast food on adolescents.

**Lesson Observation**

The lesson was presented by a teacher 36. She is teaches in Idriss Affifi secondary school in Ain Temouchent. She is teaching a third (3<sup>rd</sup>) year scientific stream class of twenty-six (36) pupils.

The lesson presented was a Reading and Writing session in a form of individual work. The teacher introduced the topic with a video viewing followed about questions on its content: obesity. After discussing the viewed documentary in the warming up stage, the video script was handed to pupils to be read. The content understanding was facilitated by the video which targeted obesity problems in the developed countries, mainly in the USA. The rest of the work was a succession of text-based activities through which she reached her lesson objectives by drawing her pupils' attention to the bad effects of junk food on the consumer's health; and introduced key vocabulary items. Finally, she moved to the writing step in post-reading by eliciting recommendations against obesity and she further requested her pupils to write a letter of complaint to warn adolescents of the bad effects on health. It was noticed ICT is not exploited in most lesson step especially in writing. The video served just the reading step and although it helped this teacher clarifying the theme, her type of teaching was still teacher-centered. It is a form of initial ICT integration at the stage of familiarization(Hooper & Rieber,1995).



## Speaking Step

### Your Turn: Pair Work

*Objective: to use the verb idiom “had/'d better/'d better not” in giving advice*

- To learn how to ask for an advice using; *what should I do when ....*
- To learn how to give/make an advice using; *you had better or you had better not ...*

**Task 3:** With your partner ask for or give advice about what to do *before, during* and *after* an earthquake using the verb idiom *had/'d better/'d better not*.

### Sample Role Play:

-Before an earthquake

*You:* What should I do before an earthquake?

*Your partner:* You'd better know how to turn off gas, water and electricity.

-After an earthquake

*You:* What should I do after an earthquake?

*Your partner:* You'd better check for injuries and provide first aid.

### The Video Transcript:

You know a natural disaster can be a pretty scary event when they occur. Hi, I'm Captain Joe Bruni, and what I want to talk about and discuss is what actions can be taken when an earthquake happens to strike as a natural disaster.

If you're inside of a building, find a sturdy area, like under a table, or something sturdy to get over your head, like a doorway. Get in the opening, duck and cover and cover your head and neck with your arms. By placing your hands and arms up over the head. If you are in a high rise building move towards an interior wall and duck and cover taking the same type of measure of placing the hands and arms up over the head. If you are in an open area, stay in an open area moving away from trees, signs, power lines or anything in the open area that could come down or collapse or fall when an earthquake strikes. If you're inside of a building, stay away from shelving or any type of stock or material that's located or mounted near a wall that can topple and fall over. Do not try to run for the door to get outside for an open area. It may take too much time and you may not make it before a collapse occurs. Duck and cover in as secure area as possible. Preferably in a doorway where there's cover. And cover the head and the neck with the arms and the hands. If you are driving in a vehicle alongside the road, pull over and stay in your vehicle away from power lines and signs as possible until the shaking subsides. Stay safe. I'm Captain Joe Bruni and we'll see you next time.

## **Lesson Observation**

We observed a female trainee teacher of 24 presenting a Listening and Speaking lesson in Ahmed Belhadj secondary school in Chaabat EL-Ham where she has been teaching for more than one year. The group taught is second year scientific stream.

The theme of the unit is Safety and Disasters. The technology tool integrated is the video projected through a data-show. The teacher incorporated it in the pre-listening phase as a warm up. The type of teaching is teacher centered in a form of a class work in which the teacher guides the pupils through the different activities.

In the warm up, pupils were asked to look at a set of pictures and identify the theme of the lesson, which was “Natural Disasters”. After that, he animated a short class discussion around the topic which led to the introduction of video viewing in the listening phase.

During the video viewing of the first view, pupils were required to watch the video and complete the sentences as a multiple choice question (MCQ) so as to have a general understanding of what has been viewed. In the second activity, the pupils viewed the video again in order to do a gap filling activity. Since they were put into an authentic situation related to real life catastrophes, pupils were asked to sort out items, measures to follow during an earthquake.

In the speaking step (in Your Turn), the teacher asked his pupils to act short dialogues in a pair work activity where they exchange roles in asking for and giving advice before, during and after an earthquake. However, at this step ICT is not used. The teacher could have brought some video about disaster survivors and exploited it.

Nonetheless, the teacher reached her lesson objectives and she seemed to master the use of technology tools, at least the tools that she used. ICT is used in most activities and we can presume this integration is in the utilization stage according to the constructivist model of Hooper & Rieber(1995) since complete integration require all lesson parts.

## **Appendix- G            Teachers' Interview Protocol**

Female /Male: .....

School Name: .....

Age range: .....

Duration: .....

Hello Mr. /Miss/ Mrs. (interviewee's name) thank you for accepting to be interviewed. This study that you are taking part in concerns the use of Information Communication Technologies (ICT) in teaching English to Algerian pupils in Ain Temouchent secondary schools.

**1-** For how long have you been teaching English in the secondary school?

**2-** Are you familiar with the use of modern technology tools like computer manipulation, data-show, smart phone, tablets, digital cameras etc....?

**3-** Have you ever been trained to use ICT for pedagogical purposes like teaching English?

(If so, for how long? Do you have any degree in computer science?)

**4-** Do you plan your lessons taking into account the use of ICTs?

(If so, how long have you been using it with your pupils, and in which teaching skills?)

(If No, what were the difficulties that you faced? how do you manage to use ICT in class?)

**5-** Do you prepare your lessons and teaching material on a computer?

**6-** If so, do you update your teaching material on the computer, as well?

**7-** Incorporating ICT in class cannot be done at random and for sure it is not the last minute preparation.

According to you, what are the steps needed for the preparation of an ICT-based lesson?

**8-** ICTs can also be used to assess pupils' work. Do you use Microsoft Excel for calculating

Marks and analyzing results? (Summative assessment)

(if yes, do you assess your pupils orally or in writing by using technology? How?)

**9-** What problems do you encounter when using technological tools in your classroom?

**10-** How do you solve these problems?

**11-** Have you ever attended any lesson where technology tools like computer and data-show were used?

(if so, What were your remarks on the lesson atmosphere, teacher's and pupils' roles, type of teaching, lessons objectives, any differences from the usual lessons without ICTs ?)

**12-** Pupils seem to be familiar with technology tools nowadays:

- Does the use of ICT motivate your learners?
- Does ICT use enable teachers to make their pupils autonomous learners?
- Does the use of ICT enable pupils to solve learning problems more easily?

(If so, please give us some examples from lessons.)

(if no, do you think it is almost the same result like the traditional type of teaching)

**13-** Do you give your pupils any homework to be done through ICTs? (If so, provide examples)

**14-** Did your pupils present any group work in class using data-show or any other technological tool?

**15-** Has ICT inspired you to change your way of teaching? (If so, in what ways?)

**16-** Do you think it is always necessary to use ICTs in your lessons?

**17-** Is ICT already integrated in the secondary school curriculum?

**18-** Will you be able to implement ICTs in every day lesson?

p.s. The interview ends with thanking participants for answering the questions and accepting to be part of this study

## Appendix- H

## A Sample Interview Script

Second Participant

**Female /Male:** Male

**Age range:** 50 - 60 years

**Place of the Interview:** Maghni Sandid Med secondary school, Ain Temouchent

**Time of the Interview:** 13.30-14.35 p.m.

### Audio script:

**Interviewer:** Hello Mr. B., welcome

**Participant:** *Hello*

**I:** Thank you for accepting to be interviewed. This study that you are taking part in concerns the use of Information Communication Technologies (ICT) in teaching English to Algerian pupils in public education in secondary schools.

**P:** *You are welcome Mr. Touami.*

**I:** My first question to you is about your teaching experience so, for how long have you been teaching English in the secondary school?

**P:** *well, I'll be completing my 29<sup>th</sup> year this June. I have quite a long experience.*

**I:** I see, so are you familiar with the use of modern technology tools like computer manipulation, data-show, smart phone, tablets, digital cameras etc...?

**P:** *yes, but modestly*

**I:** Have you ever been trained to use ICT for pedagogical purposes like teaching English?

**P:** *to say to be trained...well, the training was not very sufficient since it was taken in charge by a not very proficient teacher who was most of the time absent. So, I don't take that training into consideration. But I have had my own training by using my own laptop computer and using some guidelines and advice from the part of my colleague teachers and friends also.*

**I:** Did you have any degree in computing from a private school?

**P:** *No, not at all*

**I:** Do you plan your lessons taking into account the use of ICTs?

**P:** *Yes, it happens to me, yes when it is possible. It is something challenging the teacher. It is not always easy or simple to use though it is a very good tool to use in class.*



**I:** can you tell us how long have you been using it with your pupils?

**P:** *well, since the implementation of the CBA. It's about six or seven years ago.*

**I:** so, do you prepare your lessons and teaching material on your personal computer?

**P:** *Yes, yes, of course*

**I:** do you update this teaching material on the computer, too?

**P:** *Yes, eh, well from time to time. From year to year I use the computer to update everything. Well, I left the pen now, I'm using just the keyboard.*

**I:** Incorporating ICT in class cannot be done at random and for sure it is not the last minute preparation. According to you, what are the steps needed for the preparation of an ICT-based lesson?

**P:** *Well, it is sure that ICT cannot be used for its own sake. It should be carefully planned. It should be used for a purpose. If not, it won't be beneficial neither for the teacher nor for the pupil. So, the steps that a teacher should undertake in the preparation of an ICT base lesson...well, I think that first of all teachers should find the material from the internet. He should google and finds some pictures; some videos from [youtube.com](http://youtube.com) or another website then tries to adapt this material to suit the objectives of the lesson and at the same time suit the level of his class, the tastes, and the needs of his pupils. So, and then tries to make some changes and some adaptations in terms of format. If the video needs to be adapted to the level of the pupils, he can use the Movie-maker windows tool to trim or adds some audios in it etc... so and then he can rehears it at home before giving it to the pupils in the classroom.*

**I:** That's a great deal of work; the teacher must be prepared to it.

**P:** *Yes, of course. That's not easy!*

**I:** does ICT need more preparation?

**P:** *Yes, it needs a lot of preparation.*

**I:** That is about teaching what about assessing pupils' work with technology tools?

**P:** *Yes, it is also useful in assessing the same as it is for teaching because teaching and assessing are interrelated. Assessing is, if we can say, the backbone of teaching. We cannot teach without assessing. ICT is also useful in assessing for example eh...we can ask pupils to search on the internet to find out certain information. You can ask them to check the pronunciation of certain words we have seen in class or to find out the meaning of certain words we have seen in class in [www.dictionary.com](http://www.dictionary.com) . We can also ask them to prepare projects using internet and then also*

*when they present in the classroom, they use also the computer and the data-show. All these are parts of assessment. Then, we can also ask pupils to send their homework by e-mails to the teacher. These e-mails could have the forms of letters or the form of written activities which should be done at home by the pupils and sent back to the teacher to be corrected.*

**I:** When coming to the classroom with a certain lesson preparation to be done with the pupils through the use of ICT, the teacher might sometimes encounter difficulties or problems when using these technological tools in class. Can you tell me about the type of problems you face when you try to present your lesson to the pupils?

**P:** *Yes, eh...the major problem is that in most secondary schools the classrooms are not well fit to use ICT because sometimes you don't find the electrical wire or socket to plug your computer etc... or sometimes there is no electricity in the room or there is a power failure especially in winter ehh...sometimes the classroom is so overcrowded with pupils. This way, so it is difficult to manage such a class using ICT.. you see!*

**I:** So, how do you overcome these difficulties and solve these problems?

**P:** *Eh, yes so, well the teacher should always be prepared to the unexpected. So, he should Always prepare an alternative as he prepares the lesson.*

**I:** a plan "B".

**P:** *Yes, he should always be ready to any unexpected situation. So, in case there is no power, the teacher has to have a plan "B" , you see!*

**I:** Have you ever attended any lesson where technology tools like computer and data-show were used?

**P:** *Yes, many times*

**I:** What remarks did you make on the lesson?

**P:** *Well, most of the times, the major remarks we can make is that some, we can some if not many teachers use ICTs just for the sake of using them. We can say just as an "accessoire". So, this is the problem. They use it without any particular objective. They use it just because they think they are required to use it or just to impress, may be, their audience.*

**I:** so, that lesson or all the lessons you attended were all unsuccessful?

**P:** *The majority of them. But we don't blame the teachers because the teacher himself/herself has not received adequate or successful training.*

**I:** What about the somehow successful lessons that you have attended? What are your remarks about the teacher's and pupils' roles?

**P:** *Yes, the lesson when the teacher has made good choice of the material and has used it efficiently, because using ICT is a two edged-sword: it can be very useful for both the teacher and the pupils and at the same time, if it is not well implemented in the classroom, it would have disastrous effects. So, it could, may be, confuse the pupils or it could bore them, you see. So, I think that a good teacher should be careful with this.*

**I:** Well, I see that you are drawing a general conclusion on some of the lessons that you attended without focusing on a lesson in particular. We want to know, please, your remarks about how things went on a particular lesson you attended.

**P:** *Yes, I remember one lesson where the teacher used an interview, a video interview. The topic was natural disasters. The pupils were very fascinated by the way the person who in the interview was undertaken the questions they were asked and the activity which followed did not suit or go with what the pupils have seen. It was not congruent. It was really a pity because the teacher could have exploited the interview by asking pupils for example to ...eh by giving them activity that exploit that interview on how to ask questions like wh-question or yes-no questions especially about the topic of natural disasters.*

**I:** okay, so the role of the teacher here was still the same as in the teacher-centred type of teaching?

**P:** *I think that with the use of ICT ....*

**I:** are you still taking about the particular lesson?

**P:** *Yes.*

**I:** Did the teacher remain at the centre of the teaching practice or did he allow for .....

**P:** *At the particular lesson, the teacher did not intervene much in the beginning while pupils were viewing the video but she/he intervened later on, after viewing. So, it gave time to pupils to listen and be interested in what was going on in the video. It was an opportunity for the teacher to be silent a little bit he he he... (a laughter) because most of the time he is talkative.*

**I:** what about the objectives of that lesson?

**P:** *In the pre-reading, it was to introduce a text about solidarity in time of disaster.*

**I:** were the objectives reached by the end of the lesson?

**P:** *In the end of ... well, the lesson was not finished because the bell rang before the end of the lesson so, we cannot say that the objectives were reached. But by seeing the activities that the teacher has planned, the objectives could be reached to some extent.*

**I:** Pupils seem to be familiar with technology tools nowadays; does the use of ICT motivate Your learners?

**P:** *Yes, of course it motivates. It is always an incentive for pupils to make them learn especially English as a foreign language. It is also a plus. It enables the teacher to shackle off routine and bring changes into the classroom atmosphere and is something that the pupils like in class.*

**I:** Does ICT use enable teachers to make their pupils autonomous learners?

**P:** *Yes, I think so. In fact, it is not using ICT which makes them autonomous; it is rather the strategy which the teacher uses that makes them autonomous. If the teacher limits his interference in the classroom, if he talks less, lets his pupils think, he lets his pupils speak and express themselves and exchange ideas, I think they would be more autonomous.*

**I:** Does the use of ICT enable pupils to solve learning problems more easily? If so, please give us some examples from lessons

**P:** *Yes, of course. ICT facilitates learning since it provides pupils with pictures, with visuals and as the proverb says: “ A picture is worth one thousand words”. So, instead of too much talking, you can just show them a picture, show them a video and let them interact...*

**I:** As a teacher, Mr. Benrabe, do you give your pupils any homework to be done through ICTs? if so, like what?

**P:** *Well, it happens but not very often because pupils have a lot of work to do. And it is not possible to give forty five (45) pupils your e-mail and ask them to e-mail you especially if you have six classes. So, you need time to read all the e-mails.*

**I:** A homework is only done and sent by e-mail?

**P:** *Well, you can give them homework in other forms like searching for certain information using internet, you can ask to find the pronunciation of certain words or prepare a project using internet as well.*

**I:** Do you encourage your pupils to present their group work using data-show or any other technological tool?

**P:** *Yes, yes*

**I:** they do!!

**P:** *Yes, they do it. Many pupils are very proficient in doing it and I dare say that sometimes are more proficient than the teacher himself.*

**I:** Has ICT inspired you to change your way of teaching? If so, in what ways?

**P:** *Yes, it has always brought change in my teaching and it is something innovative. It makes the teacher innovates, find new ways, find efficient ways to reach his objectives.*

**I:** Any example about that, please?

**P:** *Yes, for example instead of just interacting with pupils, you can bring a song to introduce a theme or a topic. You can bring a video to start your class with it. It can bring change: you start with laughter and introduce them you want to as the same time. It is very important to use ICT in the classroom.*

**I:** do you think it is always necessary to use ICTs in your lessons?

**P:** *It depends on how you use it, as I said before, ICT is a double edged-sword: if you use it efficiently, it will help the teacher reach the lesson objectives within a very short time but if used in the wrong way (other way), it will be a catastrophe, it will be a disaster. It will be a waste of time, boring and you see....*

**I:** Is ICT already integrated in the Secondary School curriculum?

**P:** *Yes, of course it is*

**I:** But we don't see much implementation in the daily lessons in classrooms. Would it be more appropriate if it was implemented in every day lesson practice?

**P:** *The problem is not in the text because it is already integrated in the official curriculum copy of 2008-2011. But in the field, in practice, it is not well implemented. There is an ICT implementation but it is not well implemented because of the problems we have already mentioned such as the infrastructure, the lack of proficiency of the teachers. They have lack of training and also most of the time the classrooms don't help much because of the small size of the rooms. If we use ICT, we have to use it in kind of small classes with small numbers of twenty to twenty five (20-25) groups but we cannot work it out. It is difficult to manage.*

**I:** Well, Mr. B....., taking into consideration all what has been said about the use of ICT in secondary schools, do you think that it will be implemented on a daily basis in Algerian secondary school soon?

**P:** *Well, it will be if there is a will on the part of the government because what is needed is the training. The teachers should be trained to use ICT in the classroom and the second thing is that we should get rid of the bureaucracy which around the use problem of ICT in the school. Because most of the schools have the material but it is not well managed by the stuff or well-kept as most of the material get lost or damaged within a very short time.*

**I:** okay, thank you very much for answering these questions and accepting to be part of this study.

**P:** *you are welcome*

**I:** good bye


**P:** *Thank you*

## Appendix - I Taxonomy of Technology Domain (Tomei, 2003)

The taxonomy for the technology domain includes a progressive level of complexity from simple to complex, first to last, general to specific. The six interconnected levels of literacy, collaboration, decision making, instruction, integration, and societal considerations offer a new way to think about technology-based student learning.

Taxonomy Classification	Action Verbs that Represent Intellectual Activity on this Level
<p><i>Literacy</i> Understand technology and its components</p>	<ul style="list-style-type: none"> <li>• <b>Understand</b> computer terms in oral and written communication</li> <li>• <b>Demonstrate</b> keyboard and mouse (click and drag) operations</li> <li>• <b>Use</b> basic computer software applications.</li> <li>• <b>Operate</b> computer input and output devices</li> </ul>
<p><i>Collaboration</i> Share ideas, work collaboratively, form relationships using technology</p>	<ul style="list-style-type: none"> <li>• <b>Make use of</b> communications tools for individual writing and interpersonal collaborations</li> <li>• <b>Share information</b> electronically among students</li> <li>• <b>Communicate</b> interpersonally using electronic mail</li> </ul>
<p><i>Decision Making</i> Use technology in new and concrete situations</p>	<ul style="list-style-type: none"> <li>• <b>Apply</b> electronic tools for problem solving</li> <li>• <b>Design</b> effective solutions to practical real-world problems</li> <li>• <b>Develop</b> new strategies and ideas using brainstorming software</li> <li>• <b>Prepare</b> an electronic spreadsheet</li> <li>• <b>Create</b> calendars, address books, and class schedules</li> </ul>
<p><i>Discrimination</i> Select technology-based instructional materials appropriate for individual students</p>	<ul style="list-style-type: none"> <li>• <b>Appraise</b> educational software and determine its effectiveness with respect to individual student learning styles</li> <li>• <b>Discriminate</b> multimedia resources appropriate to student development, age, gender, culture, etc.</li> <li>• <b>Assess</b> various Internet environments for their strengths as possible student learning tools</li> <li>• <b>Employ</b> electronic media to construct new research and investigate lesson content</li> </ul>
<p><i>Integration</i> Create new instructional materials using various technology-based resources</p>	<ul style="list-style-type: none"> <li>• <b>Design, construct, and implement</b> teacher-made Internet-based materials for learning subject content</li> <li>• <b>Design, construct, and implement</b> teacher-made text-based materials for learning subject content</li> <li>• <b>Design, construct, and implement</b> teacher-made visual-based classroom presentations for learning subject content</li> <li>• <b>Consider the uses</b> of technology to address the strengths and avoid the weaknesses inherent in multiple intelligences</li> <li>• <b>Focus</b> student learning using integrated instructional materials</li> </ul>
<p><i>Tech-ology</i> The study of technology and its value to society</p>	<ul style="list-style-type: none"> <li>• <b>Defend</b> copyright and fair use laws for using technology</li> <li>• <b>Debate</b> the issues surrounding legal and ethical behavior when using technology</li> <li>• <b>Consider the consequences</b> of inappropriate uses of technology</li> </ul>
<p><i>Note.</i> From <i>Using a taxonomy for the technology domain</i>, L.A. Tomei, 2001, Penn Association of Colleges and Teacher Educators. (Tomei, 2003)</p>	

ملاحظة عامة : يتعين على المديرين إضافة تعليق مكتوب يصحب الاجابة في الخانة التي لا تشمل على كل الحالات الخاصة الموجودة في المؤسسة

التعليم الثانوي العام والتكنولوجي Enseignement Secondaire Général et Technologique				الجمهورية الجزائرية الديمقراطية الشعبية وزارة التربية الوطنية مديرية الهياكل والتجهيزات	
<b>الإستقصاء المدرسي</b> لشهر أكتوبر					
رقم التعريف الوطني: 46015		الرقم التسلسلي البلدي: 4603		I - تحديد وتشخيص الثانوية	
رقم حساب الخزينة: 186		أحمد بلحاج سعيد		1.1 - تسمية الثانوية	
شعبة اللحم		الولاية: عين تموشنت		2.1 - تحديد الموقع	
المالحي		الدائرة: عين تموشنت		3.1 - عنوان الثانوية	
البلدية		الهاتف: هي محمد بوضياف - شعبة اللحم		البريد الإلكتروني (إيميل): lyceeahmedbelhadjsaid@yahoo.fr	
الفاكس		البريد الإلكتروني (إيميل): lyceeahmedbelhadjsaid@yahoo.fr		4.1 - الوسيط (ضع 1 في الخانة المناسبة)	
<input type="checkbox"/> ريفي		<input type="checkbox"/> شبه حضري		<input checked="" type="checkbox"/> حضري 1	
<input type="checkbox"/> 840		<input type="checkbox"/> 800		<input type="checkbox"/> 720	
<input type="checkbox"/> طاقة غير نمطية		<input type="checkbox"/> غير نمطية		<input type="checkbox"/> 1300	
<input type="checkbox"/> داخلي		<input checked="" type="checkbox"/> نصف داخلي 1		<input type="checkbox"/> خارجي	
<input type="checkbox"/> جاهز		<input type="checkbox"/> نصف صلب		<input type="checkbox"/> صلب 1	
<input type="checkbox"/> 2004		سنة الإنشاء: 2003		5.1 - النمط (ضع 1 في الخانة المناسبة)	
<input type="checkbox"/> 600		<input type="checkbox"/> 1000		طاققتها النظرية: 600	
<input type="checkbox"/> 600		<input type="checkbox"/> 1000		6.1 - النظام (حسب قرار الإنشاء) ضع 1 في الخانة المناسبة	
<input type="checkbox"/> 2004		<input type="checkbox"/> 2003		7.1 - نوع البناء (ضع عدد الأقسام حسب نوع البناء)	
<input type="checkbox"/> 2004		<input type="checkbox"/> 2003		8.1 - سنة البناء	
<input type="checkbox"/> 5907,00 م <sup>2</sup>		<input type="checkbox"/> 16717,00 م <sup>2</sup>		9.1 - مساحة الثانوية الكلية	
<input type="checkbox"/> 2004		<input type="checkbox"/> 2003		2 - القاعات الدرس العادية الموجودة	
<input type="checkbox"/> 0		<input type="checkbox"/> 18		1.2 - قاعات الدرس العادية المستعملة حاليا لـ:	
<input type="checkbox"/> منها التي اعدت فتحها		<input type="checkbox"/> منها التي اعدت فتحها		<input type="checkbox"/> أغراض إدارية	
<input type="checkbox"/> التي تم تقسيمها		<input type="checkbox"/> التعليم الثانوي		<input type="checkbox"/> نقص التلاميذ	
<input type="checkbox"/> التعليم المتوسط		<input type="checkbox"/> أغراض إدارية		<input type="checkbox"/> المخابرة	
<input type="checkbox"/> 0		<input type="checkbox"/> 0		2.2 - قاعات الدرس المغلقة حاليا بسبب:	
<input type="checkbox"/> أسباب أخرى		<input type="checkbox"/> عدم صلاحيتها		3.2 - قاعات الدرس المتخصصة	
<input type="checkbox"/> الممرج		<input type="checkbox"/> الورشات		4.2 - القاعات المتعددة الاختصاصات المستعملة	
<input type="checkbox"/> 1		<input type="checkbox"/> 4		للمنشطات الفنية	
<input type="checkbox"/> 1		<input type="checkbox"/> 1		كمخابر الإعلام الآلي	
<input type="checkbox"/> 15		<input type="checkbox"/> 1		منها: المتصلة بالانترنت	
<input type="checkbox"/> عدد الاجهزة		<input type="checkbox"/> 1		عدد الاجهزة المركزية	
<input type="checkbox"/> عدد الاجهزة للتبويض		<input type="checkbox"/> عدد الاجهزة العادية		<input type="checkbox"/> عدد الاجهزة المركزية	
<input type="checkbox"/> 0		<input type="checkbox"/> 1		3 - معلومات حول الهياكل القاعدية	
<input type="checkbox"/> 0		<input type="checkbox"/> 1		هل تتوفر الثانوية على:	
<input type="checkbox"/> 0		<input type="checkbox"/> 1		1.3 - ساحة	
<input type="checkbox"/> 0		<input type="checkbox"/> 1		2.3 - الربط بشبكة الماء	
<input type="checkbox"/> 0		<input type="checkbox"/> 1		أجهزة تبريد المياه	
<input type="checkbox"/> 0		<input type="checkbox"/> 1		عدد المراحيض الصالحة للإستعمال	
<input type="checkbox"/> 0		<input type="checkbox"/> 1		3.3 - الربط بشبكة الكهرباء	
<input type="checkbox"/> 0		<input type="checkbox"/> 1		مكيفات هوائية	
<input type="checkbox"/> 0		<input type="checkbox"/> 1		4.3 - الربط بشبكة الغاز	
<input type="checkbox"/> 0		<input type="checkbox"/> 1		5.3 - تدفئة شغالة	
<input type="checkbox"/> 0		<input type="checkbox"/> 1		عدد الاجهزة الموجودة	
<input type="checkbox"/> 0		<input type="checkbox"/> 1		6.3 - نصف داخلية	
<input type="checkbox"/> 0		<input type="checkbox"/> 1		هل هي: مغلقة	
<input type="checkbox"/> 0		<input type="checkbox"/> 1		سنة إنشائها: 2004	
<input type="checkbox"/> 0		<input type="checkbox"/> 1		الطاقة النظرية: 2004	
<input type="checkbox"/> 0		<input type="checkbox"/> 1		منهم بنات	
<input type="checkbox"/> 0		<input type="checkbox"/> 1		منهم بنات	
<input type="checkbox"/> 0		<input type="checkbox"/> 1		عدد المستفيدين	
<input type="checkbox"/> 0		<input type="checkbox"/> 1		منهم بنات	
<input type="checkbox"/> 0		<input type="checkbox"/> 1		عدد المستفيدين (النصف الداخليين فقط)	
<input type="checkbox"/> 0		<input type="checkbox"/> 1		طاقة قاعة إتمام الداخلية	
<input type="checkbox"/> 0		<input type="checkbox"/> 1		8.3 - مكتبة	
<input type="checkbox"/> 0		<input type="checkbox"/> 1		9.3 - قاعة رياضية	
<input type="checkbox"/> 0		<input type="checkbox"/> 1		10.3 - النقل المدرسي	
<input type="checkbox"/> 0		<input type="checkbox"/> 1		11.3 - وحدة الكشف موجودة	
<input type="checkbox"/> 0		<input type="checkbox"/> 1		هل هي: مغلقة	
<input type="checkbox"/> 0		<input type="checkbox"/> 1		سنة الإنشاء	
<input type="checkbox"/> 0		<input type="checkbox"/> 1		عدد المستفيدين	
<input type="checkbox"/> 0		<input type="checkbox"/> 1		منهم بنات	
<input type="checkbox"/> 0		<input type="checkbox"/> 1		عدد المستفيدين من مؤسسات أخرى	
<input type="checkbox"/> 0		<input type="checkbox"/> 1		عدد المؤلفات	
<input type="checkbox"/> 0		<input type="checkbox"/> 1		10 - بعد الثانوية عن الطريق	
<input type="checkbox"/> 0		<input type="checkbox"/> 1		عدد الحافلات المستعملة	
<input type="checkbox"/> 0		<input type="checkbox"/> 1		نادي صحي منضوب	
<input type="checkbox"/> 0		<input type="checkbox"/> 1		وحدة الكشف نمطية	

## Glossary

**Accreditation:** to say that something is good enough to be given official approval or the granting of power to perform various acts or duties (according to merriam-webster.com/thesaurus).

**Active Learning:** a process of engaging with the learning task at both the cognitive and the affective level.

**Ain Temouchent:** Ain Temouchent is located 72 km south-west of Oran, a city with which it is closely associated, and 63 km west of Sidi Bel Abbes. Known as "la Florissante", it has an area of 78.93 km<sup>2</sup> and about 75,558.00 inhabitants live there, according to the statistics of 2010. There are 22 secondary schools in this town in which nearly 110 English language teachers work.

**Bias:** in case study design bias concerns the subjectivity of the researcher and the informant. It a threat to validity in all research designs. The researcher can be criticized in the lack of definition of the construct.

**Case study:** an intensive study of persons or situations singly or in small numbers.

**CD-ROM:** abbreviation of **Compact Disc Read Only Memory**. It is a compact disc that contains data accessible by a computer. While the compact disc format was originally designed for music storage and playback, the format was later adapted to hold any form of data.

**Competency Based Approach:** It is an approach aiming at establishing *a link between the learning* acquired at school and the context of use *outside the* classroom. This approach enables the learner to learn how: to learn, to share, to exchange and to cooperate with others.

A competency is a "know –how" which integrates and mobilizes a number of abilities and knowledge to be efficiently used in problem solving situations that have never been met before.

The student must be able to use the functional language acquired, demonstrate his understanding in class as well through text, verbal and nonverbal means( adequate visual and linguistic support) to come into contact with his schoolmates , his teacher and outside the classroom.

**Descriptive research:** a term that is sometimes used in place of the term survey research (Gay & Arasian, 2000). This research is a means of measuring variables of concern (attitudes, beliefs, grading practices) through questionnaires, interviews, or systematic observation, or a combination of these practices. From the result you may formulate specific hypotheses about the variables relationship.

**E-Portfolio:** a systematic and organized collection of a student work that exhibits to others the direct evidence of his efforts, achievements and progress over a period of time. It is the basis of learner's evaluation of his performance and it includes a variety of documents in different forms



which are stored in modern technology instruments like videos, CD-ROMs, Memory Cards, laptops etc...

**Generalizability:** the reproducibility of research results across contexts, settings, and learners.

**Google search:** The mostly used search engine in the world which allows internet users access to billions of web pages/ addresses instantly.

**Hypothesis:** a prediction about how the variables in a question are related to one another.

**Likert scale:** is a valuable and important part of survey research, which is commonly used in educational research. It is named after its inventor, the US organizational-behavior psychologist Dr. Rensis Likert (1903-1981), the Likert Scale is a prearranged scale from which respondents select one option that best expresses their opinion or judgment. Likert scales frequently have five possible choices (strongly agree, agree, neutral, disagree, strongly disagree) but sometimes go up to ten or more. The final average score is taken as an overall level of accomplishment or attitude toward the studied subject.

**Mean:** It is the arithmetic average of the scores. The "mean" is the "average" you're used to, where you add up all the numbers and then divide by the number of numbers. It identifies the central location of the data, sometimes referred to in English as the average. Example: **13, 18, 13, 14, 13, 16, 14, 21, 13**. The mean is the usual average, so:  $(13 + 18 + 13 + 14 + 13 + 16 + 14 + 21 + 13) \div 9 = 15$ . Note that the mean isn't a value from the original list. This is a common result. You should not assume that your mean will be one of your original numbers.

**Median:** The "median" is the "middle" value in the list of numbers. To find the median, your numbers have to be listed in numerical order, so you may have to rewrite your list first, and the middle one will be the median. Example:  $(9 + 1) \div 2 = 10 \div 2 = 5$ th number is the median = 14.  
13, 13, 13, 13, 14, 14, 16, 18, 21

**Randomization:** a process to help insure experimental generalizability by giving large numbers of individuals an equal opportunity to be included in a study in either the experimental or the control group.

**Software:** computer software is a general term used to describe a collection of computer programs, procedures and documentations that perform some task on a computer system.

**Stakeholder:** A person, group or entity that has a role and interest or concern in the goals or objectives and implementation of a programme. Stakeholders can affect or be affected by the organization's actions, objectives and policies. Some examples of key stakeholders are creditors,

directors, employees, government (and its agencies), owners (shareholders), suppliers, unions, and the community from which the business draws its resources.( businessdictionary.com)

**Technology integration:** Technology integration is the use of technology resources: computers, mobile devices like smartphones and tablets, digital cameras, social media platforms and networks, software applications, the Internet, etc. -- in daily classroom practices, and in the management of a school. Successful technology integration is achieved when the use of technology is:

- Routine and transparent
- Accessible and readily available for the task at hand
- Supporting the curricular goals, and helping the students to effectively reach their goals

When technology integration is at its best, a child or a teacher doesn't stop to think that he or she is using a technology tool -- it is second nature. And students are often more actively engaged in projects when technology tools are a seamless part of the learning process. Willingness to embrace change is also a major requirement for successful technology integration. Technology is continuously, and rapidly, evolving. It is an ongoing process and demands continual learning.(from: edutopia.org/technology-integration)

**Triangulation:** gathering two or more aspects of something in which one is interested. In most research designs, triangulation refers to multiple forms of data collection (more than on kind) or collection of data over time (on more than one occasion). Triangulation is attempted mainly for validating and strengthening the interpretation. The rationale is that multiple occasions of data are more likely to reveal underlying structures and involves less bias than single occasions. Triangulation applies to all sorts of designs, but is especially popular in case study design.

**Web Blog:** a composite website and online diary (or journal) organized either chronologically or thematically.

## ملخص

إن مضمون الإبداع في هذه الدراسة هو التمكن من استعمال تكنولوجيا المعلومات والاتصال لتغيير نمط التعليم وتحسين الأداء التربوي.

أظهرت وسائل البحث من استجواب و استبيان، وملاحظات الأقسام أن أغلبية المشاركين من أساتذة اللغة الانجليزية في الطور الثانوي تدرك التأثير الايجابي لوسائل التكنولوجيا في تحسين طرق التدريس ونوعيته، و أن الخبرة المهنية للأستاذ ودرايته بتكنولوجيا المعلومات و الاتصال هما عاملين هامين و إيجابيين، لإدماج وسائل التكنولوجيا في الأقسام التربوية لغرض التجديد و الإبداع لكن وتيرة استعمالها بطيئة و غير منتظمة عند المشاركين.

ومن العوائق التي تحول دون استعمال تكنولوجيا المعلومات و الاتصال : انعدام استراتيجية واضحة لإدماج وسائل التكنولوجيا الحديثة في التدريس بالجزائر بالإضافة الى قلة الأجهزة و نقص التمرن على الوسائل التكنولوجية من قبل أغلبية الأساتذة.

---

## Résumé

Le concept de créativité dans cette étude est la capacité d'utiliser les TICE pour changer et améliorer la qualité de l'enseignement de l'Anglais.

Selon les méthodes de recherche : le questionnaire, l'interview et l'observation des classes, la majorité des enseignants de la langue anglaise au cycle du secondaire croit aux effets positifs des TICE sur l'amélioration de la qualité de l'enseignement. L'expérience professionnelle de l'enseignant et sa maîtrise des TICE sont deux facteurs positifs qui facilitent l'intégration de la technologie dans les classes afin d'innover, mais la cadence de l'utilisation est lente et irrégulière chez les participants.

Parmi les obstacles de l'utilisation des TICE : L'absence d'une stratégie de l'intégration des TICE dans l'enseignement en Algérie, et le manque du matériel et l'entraînement à utiliser les outils technologiques chez la majorité des enseignants.

---

## Summary

Innovation in the context of this study is the ability to use ICT tools to change and improve the quality of English language teaching practice.

According to the teachers' questionnaire, interview protocol and the classroom observations, most of secondary school English teachers had good beliefs about ICT's positive influence on improving the methodology and the quality of EFL teaching. Teaching experience and ICT experience are two positive factors that influence the integration of technology to innovate classroom teaching; but teachers' frequency of ICT integration is slow and irregular.

Among the major barriers that prevent ICT use: the absence of a clear ICT policy to integrate modern technologies in education in Algeria in addition to insufficient equipment and lack of training for most of the teachers.

