The application of TAM for the investigation of students’
attitudes towards ICT, and factors influence students’ ICT use in
learning at KHEIs

By
Alyya H. Meerza

A Doctoral Thesis
Submitted in partial fulfilment of the requirement for the award of Doctor
of Philosophy

Department of Education
Cardiff Metropolitan University
Cardiff
United Kingdom
Abstract

The aim of this study was to investigate the attitudes of students towards, and use of ICT in KHEIs (private- public), as well as identifying the factors that influence students’ attitudes towards using ICT in their daily learning. Technology Acceptance Model (TAM) was used to examine the influence of the factors: type of university, gender, academic discipline, language of learning, students’ ICT experience and ICT support, on the Perceive Ease (PEOU) of Use and Perceive Usefulness (PU), as internal components of attitude. This study employed mixed research methods to achieve its aims and objectives. The study sample consisted of 717 students from the sciences and humanities at both the Public University and the private University in Kuwait. Quantitative and qualitative data were gathered from students by distributing questionnaires and semi-structured interviews. The principal quantitative results of this study were: (1) the overall attitude of public university students towards using ICT in their learning are more positive than the attitudes of students at the private university; (2) the type of university, gender, level of ICT experience and ICT support factors have an influence on students’ attitudes through the PEOU and PU; (3) the factor of academic discipline only influences students in terms of the PEOU and PU, and (4) learning English has a positive influence on students’ attitudes towards ICT. At the same time, the qualitative results show that the use of ICT tools in their English version can improve students’ English language skills. Another qualitative result shows that the social communication between students and the peer learning can positively influence their attitude towards ICT, as well as improving their ICT experience and skills. Recommendations were subsequently made to stakeholders and educators at both universities, based on the findings of the study. Further ideas were then identified for future research.

Keywords: Information and communication technology, Public University, the American University in Kuwait, attitudes, the Technology Acceptance Model, type of university, gender, academic discipline, language of study, ICT experience, ICT support, English language, peer learning, ICT tools used in learning.
Dedication

To my beloved family:

My mother, for her care and love during all these years;

My father, for his support and encouragement,

My lovely daughter, for bearing the separation and wishing me the best.

This work is dedicated to you all with many sincerest gratitude.
Acknowledgments

I would like to thank Prof. Gary Beauchamp for his invaluable support and guidance throughout the research and writing of this thesis. I would also like to thank Dr. Spencer Jordan for his on-going supervision.

Many thanks to everyone who contributed to and facilitated this work, including:

- The Public and the Private university administrative staff who worked hard to support me in my study.
- Tutors at both universities, for their collaboration in the distribution of study questionnaires.
- Professors and tutors from the Arabic Gulf University and Sultan Qaboos University, who contributed to the assessment and piloting of the study questionnaire.
- All of my colleagues in Cardiff Metropolitan University, who shared their experiences with me throughout the preparation of this thesis.
# Table of Contents

Abstract .................................................................................................................................................. i

Dedication ............................................................................................................................................ ii

Acknowledgments ............................................................................................................................... iii

Table of Contents ................................................................................................................................ iv

List of Figures ....................................................................................................................................... x

List of Tables ....................................................................................................................................... xi

List of Appendix .....................................................................................................................................xiv

**Chapter One: Introduction** .............................................................................................................. 1
  1.1 Background .................................................................................................................................... 1
  1.2 Research Aims ............................................................................................................................. 5
  1.3 Research Objectives ..................................................................................................................... 5
  1.4 Research Questions ...................................................................................................................... 6
  1.5 Significance of the Research ........................................................................................................ 6

**Chapter Two: literature review** ....................................................................................................... 8
  Part One: The study background ...................................................................................................... 8
  2.1 Introduction ................................................................................................................................... 8
  2.2 Geography of Kuwait ..................................................................................................................... 8
  2.3 Language in Kuwait ...................................................................................................................... 9
  2.4 Population in Kuwait ................................................................................................................... 9
  2.5 Education in Kuwait .................................................................................................................... 9
  2.6 Educational levels in Kuwait ....................................................................................................... 11
2.7 The Ministry of Education in Kuwait (MoE) .............................................................. 11
2.8 The education system in Kuwait .............................................................................. 12
  2.8.1 Public education ............................................................................................ 12
  2.8.2 Private education .......................................................................................... 12
  2.8.3 Qualitative education ..................................................................................... 12
2.9 Higher Education (HE) .......................................................................................... 13
  2.9.1 The Ministry of Higher Education in Kuwait (MoHE) .................................. 14
  2.9.2 The public university in Kuwait ...................................................................... 15
  2.9.3 The Public Authority for Applied Education and Training (PAAET) ........ 16
  2.9.4 The private university in Kuwait .................................................................... 17
2.10 ICT application in Kuwait education .................................................................... 19
  2.10.1 ICT at the public University in Kuwait ....................................................... 20
  2.10.2 ICT at the Private University in Kuwait ..................................................... 23
Part Two: ICT, literature on attitudes and research framework ................................. 25
  2.11 Introduction ..................................................................................................... 25
  2.12 Information and Communication Technology (ICT) definitions ..................... 25
  2.13 ICT as a learning tool ....................................................................................... 25
    2.13.1 The Internet ............................................................................................... 28
    2.13.2 Virtual Learning Environments (VLEs) .................................................... 30
    2.13.3 Mobile learning (M-Learning) .................................................................. 32
  2.14 Definitions of attitude ......................................................................................... 34
  2.15 Attitude and behaviour ...................................................................................... 35
2.16 The research framework ................................................................. 36
2.17 Attitudes towards ICT ................................................................. 40
2.18 Factors influencing students’ attitudes ........................................ 43
2.19 International ICT research .......................................................... 48
2.20 ICT research in the Gulf region and Kuwait ................................... 52
2.21 The relation between Students’ attitudes and ICT usage ............... 55
2.22 Students’ engagement with ICT tools .......................................... 59
2.23 Summary .................................................................................. 61

Chapter Three: Research Methodology .............................................. 63
3.1 Introduction .............................................................................. 63
3.2 Research Design ....................................................................... 63
3.3 Research method ...................................................................... 64
3.3.1 The quantitative research method ......................................... 65
3.3.2 The qualitative research method ............................................ 67
3.3.3 Mix methods (MM) ............................................................... 68
3.4 Advantages of using MM .......................................................... 69
3.5 Research techniques ................................................................. 70
3.6 Questionnaire ........................................................................... 70
3.6.1 Research questionnaire ....................................................... 73
3.6.2 Validity and reliability of questionnaires ............................... 74
3.6.3 Pilot study ........................................................................... 76
3.7 Interviews ................................................................................ 77
3.8 Data collection ........................................................................................................... 79

3.8.1 Quantitative data (questionnaires) ........................................................................ 80

3.8.2 Qualitative data (interviews) ................................................................................ 82

3.9 Data analysis ............................................................................................................. 83

3.10 Research population and sample ........................................................................... 86

3.11 Sample description ............................................................................................... 87

3.12 Socio-demographic variable analysis ..................................................................... 90

3.12.1 Gender .................................................................................................................. 90

3.12.2 Discipline ............................................................................................................. 91

3.12.3 Year of study ....................................................................................................... 92

3.12.4 Main learning language ....................................................................................... 92

3.12.5 English skills ...................................................................................................... 93

3.12.5.1 Reading skills ................................................................................................. 93

3.12.5.2 Writing skills .................................................................................................. 94

3.12.5.3 Speaking skills .............................................................................................. 94

3.12.6 Experiences in using ICT ................................................................................... 95

3.12.7 Sources of learning experience in using ICT ...................................................... 96

3.12.8 University ICT support ...................................................................................... 97

3.12.9 Sources of support in using ICT ........................................................................ 98

3.13 Ethical considerations ............................................................................................ 99

3.14 Research obstacles ................................................................................................ 100

3.15 Summary ............................................................................................................... 101
Chapter Four: Quantitative and Qualitative Data Analysis .......................................................... 102
4.1 Introduction ................................................................................................................................. 102

4.2 The analysis of question One .................................................................................................... 102
4.2.1 First: Usefulness of ICT ....................................................................................................... 107
4.2.2 Second: ICT ease of use ...................................................................................................... 111

4.3 The analysis of question Two .................................................................................................... 114

4.4 The analysis of question Three .................................................................................................. 146
4.4.1 First: The results relating to responses from the public university students .............. 148
4.4.2 Second: The results relating to responses from the private university students ......... 151

4.5 Summary .................................................................................................................................... 155

Chapter Five: Discussion of Qualitative and Quantitative results ........................................... 157
5.1 Introduction ................................................................................................................................. 157

5.2 Discussing the results of Question One ................................................................................... 158

5.3 Discussion the results of Question two, .................................................................................... 160
5.3.1 The first sub-question ........................................................................................................ 160
5.3.2 The second sub-question .................................................................................................... 164
5.2.3 The third sub-question ........................................................................................................ 166
5.3.4 The fourth sub-question ...................................................................................................... 170
5.3.5 The fifth sub-question ......................................................................................................... 172
5.3.6 The sixth sub-question ......................................................................................................... 175

5.4 Discussing the results of Question Three .................................................................................. 178

Chapter Six: Conclusion and Recommendations ................................................................. 185
6.1 Introduction ................................................................................................................................. 185
6.2 Conclusion ........................................................................................................................................ 185

6.2.1 Question One: What are the attitudes of students towards using ICT in their learning at KHEIs? ........................................................................................................................................ 185

6.2.2 Question Two: What are the factors that influence students’ attitudes towards using ICT in their learning at KHEIs? ........................................................................................................................................ 186

6.2.3 Question Three: What is the relationship between students’ attitudes towards, and their use of ICT in learning at KHEIs? ........................................................................................................................................ 189

6.3 The model suggested for ICT applications in Kuwait ........................................................................ 190

6.4 Recommendations ................................................................................................................................. 192

6.5 Research limitations ................................................................................................................................. 194

6.5 Research limitations ................................................................................................................................. 194

6.6 Further research ....................................................................................................................................... 195

References .................................................................................................................................................... 196

Appendix 1: The study questionnaire in English version ........................................................................ 220

Appendix 2: The study questionnaire in Arabic version ............................................................................. 226

Appendix 3: The Interview questions ........................................................................................................ 232

Appendix 4: Approval from the Computer Science Department in the public university ........................ 233

Appendix 5: Approval from the Computer Engineering Department in the public university. .................. 234

Appendix 6: Approval from the Administration Science Department in the public university. ................. 235
## List of Figures

<table>
<thead>
<tr>
<th>Figure</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure 2.1 Location of Kuwait</td>
<td>8</td>
</tr>
<tr>
<td>Figure 2.2 Map of Kuwait</td>
<td>8</td>
</tr>
<tr>
<td>Figure 2.3 World Internet Usage and Middle East internet usage</td>
<td>29</td>
</tr>
<tr>
<td>Figure 2.4 The original Technology Acceptance Model (TAM)</td>
<td>37</td>
</tr>
<tr>
<td>Figure 4.1 The average response from students in both universities towards ICT</td>
<td>104</td>
</tr>
<tr>
<td>Figure 4.2 Interaction between factors of group and discipline regarding the usefulness of ICT</td>
<td>123</td>
</tr>
<tr>
<td>Figure 4.3 Interaction between factors of group and discipline regarding the ease of using ICT</td>
<td>123</td>
</tr>
<tr>
<td>Figure 4.4 Interaction between factors of group and discipline regarding ‘general attitude’</td>
<td>123</td>
</tr>
<tr>
<td>Figure 4.5 Means of the responses from the two groups regarding the use of ICT</td>
<td>148</td>
</tr>
<tr>
<td>Figure 6.1 The suggested model for ICT use in learning at KHEIs</td>
<td>191</td>
</tr>
</tbody>
</table>
List of Tables

<table>
<thead>
<tr>
<th>Table</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table 2.1</td>
<td>29</td>
</tr>
<tr>
<td>Table 3.1</td>
<td>79</td>
</tr>
<tr>
<td>Table 3.2</td>
<td>82</td>
</tr>
<tr>
<td>Table 3.3</td>
<td>83</td>
</tr>
<tr>
<td>Table 3.4</td>
<td>88</td>
</tr>
<tr>
<td>Table 3.5</td>
<td>89</td>
</tr>
<tr>
<td>Table 3.6</td>
<td>89</td>
</tr>
<tr>
<td>Table 3.7</td>
<td>90</td>
</tr>
<tr>
<td>Table 3.8</td>
<td>91</td>
</tr>
<tr>
<td>Table 3.9</td>
<td>91</td>
</tr>
<tr>
<td>Table 3.10</td>
<td>92</td>
</tr>
<tr>
<td>Table 3.11</td>
<td>93</td>
</tr>
<tr>
<td>Table 3.12</td>
<td>94</td>
</tr>
<tr>
<td>Table 3.13</td>
<td>94</td>
</tr>
<tr>
<td>Table 3.14</td>
<td>95</td>
</tr>
<tr>
<td>Table 3.15</td>
<td>96</td>
</tr>
<tr>
<td>Table 3.16</td>
<td>97</td>
</tr>
<tr>
<td>Table 3.17</td>
<td>98</td>
</tr>
<tr>
<td>Table 3.18</td>
<td>99</td>
</tr>
<tr>
<td>Table 4.1</td>
<td>103</td>
</tr>
<tr>
<td>Table 4.2</td>
<td>103</td>
</tr>
<tr>
<td>Table 4.3</td>
<td>108</td>
</tr>
<tr>
<td>Table 4.4</td>
<td>112</td>
</tr>
</tbody>
</table>
Table 4.5  Means and standard deviations of the participants’ responses towards ICT 115

Table 4.6  Means and standard deviations of participants’ responses in both universities towards using ICT, regarding gender differences 117

Table 4.7  Results of the MANOVA test for the differences between the responses towards the combined contents of attitude, according to the factors of group and gender 118

Table 4.8  T values and significant levels for differences between the means of student responses from the two universities to content of attitude and general attitude 118

Table 4.9  Means and standard deviations of participants’ responses at (Public–Private) universities towards using ICT regarding different disciplines 121

Table 4.10  Results of MANOVA test for the differences between the responses towards combined contents of attitude according to the factors of group and discipline 122

Table 4.11  Means and standard deviations of participants’ responses at the Public and Private universities towards using ICT, regarding differences in the language of study 128

Table 4.12  Results of the MANOVA test for the differences between the responses to the combined contents of attitude, according to the factors of group and language of study 128

Table 4.13  Results of one-way ANOVA for the significance of differences between the mean of students’ responses to content of attitude with regard to differences in the language of study 129

Table 4.14  Means and standard deviations of participants’ responses at the (public–private) university to using ICT, regarding the differences in students’ experience 133

Table 4.15  Results of the MANOVA test for the differences between responses to the combined content of attitude, according to the factors of group and students’ experience 133

Table 4.16  Results of one-way ANOVA for the significance of differences between the mean of students’ responses to the content of attitude, with regard to differences in the level of experience 134
Table 4.17 Results of the LSD test for bi-differences between the mean of participants’ responses to the content of attitude for differences in experience

Table 4.18 Means and standard deviations of participants’ responses at (Private-Public) universities to using ICT, regarding differences in ICT support

Table 4.19 The results of the MANOVA test for the differences between the responses to combined contents of attitude, according to the factors of group and ICT support

Table 4.20 Results of one-way ANOVA for the significance of differences between the mean of students’ responses to the content of attitude, with regard to ICT support

Table 4.21 Results of the LSD test for the bi-differences between the mean of participants’ responses to the content of attitude for differences in ICT support

Table 4.22 The result of the correlation test between students’ attitudes and the use of ICT in the public university (N = 457) and the private university (N = 260)

Table 4.23 Means and standard deviations of all responses to the paragraphs relating to the level of ICT use in the study

Table 4.24 Means, frequencies and percentages for the responses from the public university students to statements relating to the level of ICT tool use in their studies

Table 4.25 Means, frequencies and percentages for responses from the private university students to statements relating to the level of ICT use in the study
## List of Appendix

<table>
<thead>
<tr>
<th>Appendix</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appendix 1</td>
<td>The study questionnaire in English version</td>
<td>220</td>
</tr>
<tr>
<td>Appendix 2</td>
<td>The study questionnaire in Arabic version</td>
<td>226</td>
</tr>
<tr>
<td>Appendix 3</td>
<td>The interview questions</td>
<td>232</td>
</tr>
<tr>
<td>Appendix 4</td>
<td>Approval from the Computer Science Department in the public university</td>
<td>233</td>
</tr>
<tr>
<td>Appendix 5</td>
<td>Approval from the Computer Engineering Department in the public university</td>
<td>234</td>
</tr>
<tr>
<td>Appendix 6</td>
<td>Approval from the Administration Science Department in the public university</td>
<td>235</td>
</tr>
</tbody>
</table>
Chapter One: Introduction

1.1 Background

Technological innovation offers a variety of ways and resources for communication and the exchange of information between people around the world. Currently, the world’s societies are witnessing a growth in information, driven by a strong knowledge of industry and the use of Information and Communication Technology (ICT). This has led to a revolution in science and technology, resulting in many variants and rapid developments following various areas of human activity. Consequently, individuals may encounter many problems in their daily lives where they perhaps avoid or overlook ICT tools. However, the latter have been able to replace aspects of the economy as requirements which are vital for human life and human survival and prosperity.

Hence, both developed and developing human societies are making a significant effort to recruit and apply ICT and allow the opportunity for individuals to benefit from ICT tools, employing them to face their daily practical and scientific problems. In addition, ICT has become a symbol of the scientific and technological progress of this age and has revolutionised modern life, due to its rapid spread and increased use by people for their communication. In fact, ICT has the capacity to solve many societal problems which cannot be addressed using traditional methods. Therefore, there has been an essential need for the growth of ICT in teaching and learning applications at educational institutions and more specifically, Higher Education Institutions (HEIs) in order to enhance traditional teaching and learning and to organise the learning process. This should in turn facilitate the achievement of pedagogic and other educational goals (Al-Tahih, 2004; Al-Hajeri, 2008).
Over the past twenty years, HEIs around the world have invested heavily in ICT in their learning systems. ICT has had a major impact on universities and the management of teaching and learning techniques (Ben Youssef and Dahmani, 2008). Computers are considered as one of the most significant ICT tools used in all HEI departments, whether for educational or administrative purposes. Computers help students to accomplish their daily academic tasks in an easy and flexible way; they facilitate communication between students and between students with their tutors and this can take place at any time of day and from any location. Therefore, it could be said that the role of computers in HEIs is to strengthen and increase the quality of education (Tinio, 2003).

Currently, besides the use of computers in most universities, other ICT tools may be employed for similar reasons. For example the Internet, Virtual Learning Environments (VLEs); such as Black Board and Moodle, e-mails, projectors, interactive boards in classes and other ICT can facilitate communication among students and tutors. The above-mentioned tools become fundamental for both students and tutors because of their features which aid information exchange and enable discussion amongst all parties, whether inside or outside the university campus. Therefore, learning can become easier and more flexible with the minimum of time spent travelling or using more cumbersome communication methods such as post and fax, etc. The use of ICT tools in University education therefore helps to bridge the gap between tutors and students as well as facilitating the completion of student assignments and homework tasks (Al-Tahih, 2004).

The State of Kuwait is considered as the Arab country which pioneered the integration of ICT in education in the Middle Eastern zone. This integration involved introducing Internet services into the one Public University in Kuwait for the use of staff and students in 1992 (United
Just a few years later, E-learning and blended learning were applied to the public university practice in education in order to support traditional systems, and to face the problem of the increasing demand for educational opportunity. Before the Gulf War and specifically before 1991, there was only one university in Kuwait that offered Bachelor’s degrees to students completing their higher education studies, and it is a public university.

The public university in Kuwait is financially sponsored by the government of Kuwait under the supervision of The Ministry of Education (MOE) and the Ministry of Higher Education (MoHE). After the Gulf War ended in 1991, many different nationalities and ethnicities migrated to the state of Kuwait, and this led to increased investment in education with the establishment of private universities to accommodate the increased number of foreign students, as well as the growing numbers of Kuwaiti nationals. The private universities in Kuwait are actually branches of well-known foreign universities. These were founded on cooperation between the mother Universities abroad and private Kuwaiti companies interested in educational investment. Private universities are generally subject to the terms and conditions of MoHE in Kuwait as far as the academic side is concerned, but remain financially and administratively separate (Ministry of Higher Education: Private Universities Council, 2012).

Since the establishment of private universities in Kuwait, they have tried hard to develop their educational and administrative performance in order to attract as many students as possible for their Bachelor’s degree programmes and other campus courses. However, private universities in Kuwait have established a good reputation as private educational institutions to be counted amongst the best HEIs abroad. Therefore, the MoHE in Kuwait noted this academic reputation and achievement and hence started to request a certain number of supported places for Kuwaiti
students who had finished their high school studies and were aiming to continue their higher education within Kuwait instead of travelling abroad for external scholarships (Ministry of Higher Education: Private Universities Council, 2012). As a result, the internal scholarships solved the problem of high numbers of students applying for university places in the only one public university in Kuwait, as well as saving a great deal of money for the Higher Education Financial Plan.

Kuwaiti universities are always in a process of development, specifically in their education systems and curricula. Hence, the integration of ICT in students' daily lives was considered as necessary and to this end, students were encouraged to use ICT tools, such as the Internet, computers, VLEs, and E-learning tools. Hence they were trained to use them in their daily learning as an important part of this process. Consequently, in Kuwaiti universities, the use of the Internet, E-learning, Blackboard and other ICT tools has captured the attention of many researchers in the State of Kuwait, especially with the appearance of ICT in educational institutes, and although a considerable number of published studies have investigated the topics of Internet, E-learning and VLE use at HEIs in Kuwait, for example Al-Ansari (2006), Al-Fadhli (2009), Ghuloum and Ahmed (2011) and Meerza (2008), there is a lack of studies focusing on the attitudes of students towards the general use of ICT in daily learning, as well as to the actual availability of ICT facilities and services offered by universities for learning, rather than entertainment purposes. For example, Buarki (2010) is the only researcher publishing on students’ attitudes towards using ICT in learning, but the latter study is specifically concerned with students using a Library Information System (LIS). Another study by Al-Doub, Goodwin and Hunaiyyan (2008) has investigated the attitudes of students towards using E-learning at HEIs in Kuwait, and so far is the only study that includes students from different HEIs in Kuwait.
However, far too little attention has been paid to students’ attitudes towards, and engagement with, ICT at Kuwaiti Higher Education Institutions (KHEIs), or to the critical factors that influence their attitude towards ICT. Success or failure in ICT use and engagement with it will depend on attitudes to ICT tools. Therefore, the importance of the current study is in how it fills the gap in ICT research in Kuwait, through an investigation of students’ attitudes towards, and engagement with, ICT at KHEIs, and identifies factors that influence the attitudes of students. Thus, this study shall contribute to reinforcing positive factors and modifying negative ones, so as to engender a robust and appropriate attitude towards, and use of ICT amongst students towards using ICT in learning at KHEIs.

1.2 Research Aims

1. To critically investigate students’ attitudes towards using ICT in learning, and engagement with, ICT in learning at KHEIs.

2. To identify the important factors that influence undergraduate’ attitudes towards using ICT in their daily learning at KHEIs.

3. To investigate the relation between students attitude and their usage of ICT in supporting their learning.

4. Establish a model for students’ use of ICT at the universities in Kuwait – both private and public.

1.3 Research Objectives

The following objectives have been identified as important for achieving the aims of the research:

- Investigating the attitude of students towards using ICT in learning among KHEIs students.
• Identifying critical factors that influence students’ attitudes towards using ICT in learning at KHEIs.
• Investigating the relationship between students’ attitudes and their ICT use at KHEIs.
• Investigating students’ ICT engagement in learning at KHEIs.

1.4 Research Questions

In order to achieve the aims and objectives of this research, the following questions have been addressed:

1. What are the attitudes of students towards using ICT in their learning at KHEIs?
2. What are the factors that influence students’ attitudes towards using ICT in their learning at KHEIs?

Question Two will be divided into several sub-questions, as follows:

a) Does the type of university influence students’ attitudes towards using ICT at KHEIs?
b) Does the gender influence students’ attitudes towards using ICT at KHEIs?
c) Does the academic discipline influence students’ attitudes towards using ICT at KHEIs?
d) Does the language of learning influence students’ attitudes towards using ICT at KHEIs?
e) Does the ICT experience influence students’ attitudes towards using ICT at KHEIs?
f) Does the ICT support influence students’ attitudes towards using ICT at KHEIs?

3. What is the relationship between students’ attitudes towards, and their use of ICT in learning at KHEIs?

1.5 Significance of the Research

ICT is considered as one of the most important facilities and features in higher education. ICT is presented to support traditional learning approaches in both public and private KHEIs. It is also used by students in their everyday learning activities both inside and outside classes. Hence, this
research is considered to be very important at all levels in both public and private universities. The results of this research will reveal students’ attitudes towards using ICT in KHEIs, as well as identifying the factors that influence such attitudes. Furthermore, this study will also reveal students’ engagement with ICT tools offered in their universities. Moreover, in this context, this research is considered to be the first in-depth study of its kind in Kuwait, since no other studies have investigated students’ attitudes towards and use of ICT for learning in various academic departments at KHEIs, and so a gap in ICT research in Kuwait has been identified, with this study presented as an attempt to fill the gap. Moreover:

- The study will give a clear vision on the situation of ICT in KHEIs.
- The study will identify the factors that influence students’ attitudes towards ICT, and will thus try to develop or amend those factors affecting students’ attitudes towards positively using ICT.
- The study will reveal student engagement with ICT at different HEIs, and will demonstrate engagement with ICT tools in their daily learning.
- The study will support faculties in both private and public universities in their adoption of various ICT tools in education, as well as helping to develop the actual use of ICT in the education system.
- This research is considered as being the first in-depth research within the area of ICT in the state of Kuwait, and will help to fill the gap in ICT research there. Besides, the results of the study will assist future researchers in the ICT domain.
- The results of this research will benefit both administrators and academic staff from different academic departments in KHEIs who are concerned with adding, updating and using ICT as part of their learning process.
Chapter Two: literature review

Part One: The study background

2.1 Introduction

This chapter will be divided into two parts. Part one will present the background to Kuwait’s geography and demography, followed by a detailed profile of Kuwait system of education, especially in relation to the ICT systems in private and public HEIs. Part Two will give a brief overview of the literature of ICT and associated attitudes, followed by a consideration of the framework for the current research.

2.2 Geography of Kuwait

The state of Kuwait is located in the Middle East, namely in the Gulf region (Figure 2.1). Kuwait City borders Iraq in the north and North West, Saudi Arabia in the south and west, and the Persian Gulf in the east. Kuwait City is the capital (Figure 2.2). The weather in Kuwait is very dry and hot during the nine months of summer, and cool in its short, three-month winter (Central Intelligence Agency, the World Fact Book, 2013).

Figure 2.1: location of Kuwait

Figure 2.2 map of Kuwait
2.3 Language in Kuwait

The official Language of Kuwait is Arabic; it is the mother tongue of all Kuwaitis, with English as the second language. Both languages are used in all Kuwaiti ministries and commercial industries, as well as in private organisations. The official religion in Kuwait is Islam (Kuwait Government Online, 2013).

2.4 Population in Kuwait

The population of Kuwait was estimated at 2,695,316 in 2013, includes 1,291,354 non-nationals. But only 45% may be considered as Kuwaitis, with other inhabitants being of different nationality, e.g. 35% other Arab, 9% south Asian, 4% Iranian and 7% other nationalities (Central Intelligence Agency, the World Fact Book 2013).

2.5 Education in Kuwait

Education is considered as one of the most important issues in Kuwait. It is compulsory, beginning with elementary and continuing to secondary school. The main aim of education in Kuwait is to make all Kuwaitis dependable, active citizens in their society. In this context, “Education is a right of all citizens to be provided by the state in accordance with the law and in keeping with the general system and ethics, Education in Kuwait is compulsory and free of charge in the primary stages, according to the law” (United Nations Educational Science and Cultural Organization, 2011, p. 2). Education in Kuwait starts with kindergarten (KG) and continues to higher education level. Education is compulsory for the three basic levels, i.e. KG, elementary, and secondary education. The government of Kuwait is responsible for providing buildings, teaching staff, meals, books and all other educational resources to facilitate success in education for all Kuwaitis.
The earliest form of education in Kuwait was in the Quran schools, where Kuwaitis received Islamic religious instruction and literacy training in the Quran. Rich Kuwaiti families, however, tended to send their sons overseas to be educated (Library of Congress Country Studies, 1993). The first school, Mubarakiah, was built in Kuwait in 1912 and here, Kuwaitis were taught Arabic, English, religion, history and simple mathematics. In 1921, another school was opened with the same curriculum, but with additional daily English lessons. All schools were built for boys and no girls had access to education at that time. In 1937, the first girls’ school was opened, using the same curriculum as was taught to the boys. This development coincided with the discovery of oil and changes in Kuwaiti civilization. It has been a major issue in the national budget from oil exports ever since (Meleis, El-Sanabary and Beeson, 1979).

However, the infrastructure of education in Kuwait was first established in 1936, with four schools for boys and one school for girls purely at primary level. By the year 1945, the government of Kuwait had organized the education system, and opened 12 schools with 3635 students. In 1956, the government approved an educational plan that divided formal education into four stages, with KG for two academic years, primary for four academic years, intermediate for four academic years and secondary for four academic years. By the year 2005, the Ministry Of Education had amended all levels of education, based on the recommendations of the IBE-UNESCO meeting with the Kuwait Ministry of Education, and so the education system in Kuwait was modified to five years for primary education, three years for elementary education and three years for secondary education (Ministry of Education, The History of Education in Kuwait, 2012).
2.6 Educational levels in Kuwait

There are four educational levels in Kuwait, as discussed previously. Secondary school graduates have the right to choose their subject and place of higher education after graduation. They can join the Public Authority for Applied Education and Training (PAAET), Public University or private universities on internal or abroad scholarships. The PAAET consists of four collages, all offering diploma certificates, except for the college of education, which offers graduates a Bachelor’s degree in education. The four colleges comprise: the College of Basic Education, the College of Business Studies, the College of Health Science and the College of Technological Studies. Study at these colleges continues for almost two years, except at the College of Basic Education, which continues for four years, leading to a Bachelor’s certificate, which allows graduates to work as teachers at Kuwaiti state schools. Matters surrounding A and private universities will be discussed later in this chapter.

2.7 The Ministry of Education in Kuwait (MoE)

The MoE in Kuwait was founded in (1936). Now it is one of the largest ministries in Kuwait and consists of 50,000 employers (Ministry of Education, 2012). The Ministry aims to develop educational methods to ensure a good education for all Kuwaiti citizens. All educational institutions, whether private or public, are covered by MoE management and regulations. According to the United Nations Educational Scientific and Cultural Organization, the MoE in Kuwait was, and still is, trying to address the growth of technological development, as well as scientific progress, by pursuing objectives such as the advancement of teaching methods and the curriculum, improving girls’ education, evaluating students’ learning and teachers’ progress, and offering science and ICT training at all of their institutions (United Nations Educational Scientific and Cultural Organization, 2011).
2.8 The education system in Kuwait

Education in Kuwait is split into three groups: public, private and qualitative. The Ministry of Education is responsible for these three groups and manages them in the state of Kuwait.

2.8.1 Public education

Public education consists of all public institutions and schools which are free of fees. It is limited to Kuwaiti citizens as well as the children of non-Kuwaiti teachers who are working for the MOE. Other non-Kuwaiti students must be educated in private schools or universities (Ministry of Education, 2012).

2.8.2 Private education

Private education was initially established to cater for the educational needs of the children of foreigners working in Kuwait. The first private school was established in 1953 and was known as the ‘English School’ (Ministry of Education, 2012). After this, in 1967, the MOE launched the private education system in Kuwait, and so more private schools were established, such as the British, American, Indian and Arabic private schools, private education has increased to include 158 private schools all over the state and although fees for private schools are considered high for Kuwaiti families, wealthy families who can afford them still send their sons to be educated in private schools.

2.8.3 Qualitative education

Qualitative education in the state of Kuwait is divided into four groups: Religious education, professional education, Special needs education and Adult education (Buarki, 2010, p. 77).
2.9 Higher Education (HE)

According to the Kuwaiti low No 29 “Higher Education should have a special budget and that it is responsible for managing its finances” (United Nations Educational Scientific and Cultural Organization, 2011, p. 2), Higher education in Kuwait includes Higher Education Universities and Post-Secondary Education and training. There are two main higher education institutions in Kuwait: Kuwait University (KU) and the Public Authority for Applied Education and Training (PAAET), which was mentioned earlier in this chapter. Additionally, there are private universities and colleges approved by both the Ministry of Education and the Ministry of Higher Education, and which are accredited for the graduation of students with Bachelor’s, diploma and postgraduate degrees. Each university has its own rules, policies and regulations regarding the acceptance of students. The policies in private universities differ from one university to another, depending on the fees paid, the number of years of study and the departments for different disciplines. According to the Ministry of Higher Education; *private universities council* (2013) private universities accredited by the MoHE include the following:

- The American University of Kuwait.
- The Australian collage at Kuwait.
- The Gulf University of Science and Technology.
- The Kuwait Maastricht Business School.
- The Arab Open University, Kuwait.
- American University of Middle East.
- American College of Middle East.
- Box Hill College Kuwait.

The current research is interested in investigating the attitudes of students at KHEIs towards using ICT in their learning. Hence, two universities in Kuwait have been chosen for applying
the research and these comprise: one Public University and one Private University in specific. These were chosen because of the similarity of disciplines they offer and their compatible study systems. Both of universities (public – private) will be discussed in depth in the next part of this chapter.

2.9.1 The Ministry of Higher Education in Kuwait (MoHE)

The Ministry of Higher Education (MoHE) in Kuwait was founded in 1988. The Ministry aims to offer education for secondary graduates, as well as taking care of issues in higher education institutions. Moreover, the Ministry supports studies conducted in Kuwait by researchers, faculties and scientists. Since the MoHE was established, it has considered scholarships for all Kuwaiti secondary school students who have obtained the level required for studying abroad. The Ministry organizes all overseas scholarships through its cultural offices in the United Kingdom, United States, France, Russia, Egypt, Australia, Bahrain, UAE and many other countries around the world. These cultural offices perform a role in the guidance and management of Kuwaiti students in the respective countries (Ministry of Higher Education: students’ scholarships, 2012).

Currently, the MoHE in Kuwait offers numerous places for Kuwaiti students, so they can complete their Bachelor’s degree, as well as they offer to them internal scholarships to continue their university studies in particular private universities, in order to get the best level of education and language (United Nations Educational Scientific and Cultural Organization, 2011), the private university chosen in this study consider one of the universities that accept students scholarships from the MoHE, and state number of seats to students who like to join their education.
2.9.2 The public university in Kuwait

The only public University in Kuwait was founded in 1966, it is a state funded university where students complete high level studies after successfully finishing their secondary school education. The public university main campus is located in the Showikh area, and consists of the College of Law, Social science and administration Sciences. Other colleges are located in different areas in Kuwait, where transportation is needed for moving between the colleges.

Following the establishment of the public university, many important missions have been considered for establishing the best education system possible for all Kuwait higher education students (KHEs), for example the public university mission is to keep and develop the human knowledge as well as the human resource, and this will achieve through strengthening the National, Arabic and Islamic values, and developing human resource, as well as disseminating knowledge addition to utilizing modern technology in education (Kuwait University: Missions, 2012).

The public University of Kuwait is funded by the government of Kuwait and under the supervision and organization of both the MoHE and MoE. Therefore, Kuwaiti students are not asked to pay fees for studying for their Bachelor (BA) or post-graduate (PG) education. However, Kuwaiti students pay a nominal fee when registering at the beginning of each academic year. In general the public university accepts Kuwaiti students only to join their education, but in exceptional circumstances foreigners may gain the entry to the university to continue their study, for example the diplomats sons could apply and be accepted in Kuwait public university education, as well as the public university offers education seats to foreigners students who gained a high General Percentage Average (GPA) of marks in their secondary school education, and would like to apply to continue their Bachelor level of studies.
Acceptance to any degree programmes at the public university in Kuwait varies according to the regulations in each college, (Kuwait University: Admission & transfer Regulations, 2012).

At the public university, there are 14 colleges which offer 72 different educational programs in both the Humanities and Sciences; these programs include Administrative Science, Arts, Dentistry, Education, Engineering, Law, Graduate Studies, Medicine, Medical Science, Pharmacy, Social Sciences, Sciences, and Islamic Studies. There is also a women’s college. Master’s and PhD degrees are available in a limited number of disciplines, such as Education, Science and Medicine. The duration of a Bachelor’s program is generally 4 years, whilst in Science; it extends between 5-7 academic years.

2.9.3 The Public Authority for Applied Education and Training (PAAET)

PAAET was founded in 1982 as the first training institution. The institute guided a national programme for developing expert manpower, in order to meet society’s needs for human resources (Public Authority for Applied Education and Training, 2011) and its main objectives were to provide society with well-trained graduates, in order meet the needs for skilled manpower with a sound knowledge base. Women’s training programmes were also considered for the encouragement of female participation in society. In addition, the skills of PAAET employees were developed and scholarships offered for study abroad in higher education (Al-Ali, 1996).

PAAET consists of five full time educational programmes for secondary posts, as well as nine colleges for technical training. These colleges and institutions are specialized for secondary graduates who do not meet the Kuwait public university admission requirements. PAAET’s colleges and institutes offer programmes in Nursing, Commercial Studies, Mechanical

### 2.9.4 The private university in Kuwait

The private university chosen in this study was established in 2003. The university is located in the Salmiyah area, which is considered as a prime location in the centre of the state of Kuwait. It is a private university between several private universities in Kuwait that organized and instructed by the MoHE (Ministry of Higher Education: *Private Universities Council*, 2013), the university education and system will be mentioned in details in the coming part, since it is one of the private universities chose in this study to apply the research aims and objectives, beside the only one Public University in Kuwait.

The private university campus is extremely modern; classrooms are equipped with the latest technology. Computer, Science and English laboratories are available for use by students to serve their learning needs. Moreover, other facilities may be enjoyed, such as coffee shops, restaurants and gardens, thus creating a pleasant and appropriate educational environment.

The university consists of the College of Arts and Science; this college is divided into four programmes offering the following specializations (American University of Kuwait, Academics, 2013):

- Arts and Humanities, with a Bachelor’s degree in Communications and Media, English, and Graphic design.

- Social Sciences Department, which offers a BA in International Studies and social and Behaviour Science.

- Business and Economics Department, offering a BA in Business Administration of Accounting, Economic, Finance, Management and Marketing.
- Science and Engineering Department which offers a BA in Computer Science, Computer Engineering and Information System.

The English language is considered as the main language for teaching and learning at the private university chosen for this study. Courses are taught in English. Therefore, it is obligatory to have sufficient English language skills when applying to study at this private university and for this, students are requested to show evidence of having successfully undertaken an English language test, with a satisfactory pass mark, in order to gain admission to the college (American University of Kuwait: Admission process and requirements, 2013). Moreover, the university offers an English course as a foundation prior to joining the programme of study. Therefore, what appears is that most applicants to the private university are students who have passed through a private education system, such as English or American secondary schools, with a strong English language background.

The private university mission is to provide students with knowledge and skills needed for their lifelong learning and future jobs; another mission is to enrich students via fostering them towards critical thinking, effective communication and leadership (American University in Kuwait, mission statement, 2013). The university fees are considered equal to international students’ fees paid abroad to universities around the world. Basically, the education system in the private university is linked to the American strategy, including the amounts payable for fees, learning strategies and administration and cultural environments. Overall, education in this specific private university is of a very high quality; students are developed and supported in a tough study programme by the staff and administration.
2.10 ICT application in Kuwait education

The Government of Kuwait has always been interested in bringing ICT into Kuwaiti education. ICT was first brought into secondary school education program in 1986, and in 1994, intermediate schools introduced IT courses into their schools curriculum. By the year 2004, ICT was applied in primary schools, and taught as a subject with basic ICT skills, such as computer operation, Logo, Microsoft office package, etc. (Sulaiman, 2011). In 2006 the MOE developed the ICT courses presented in secondary schools education, and added new courses to develop students skills in ICT, these courses are named; internet advance search, how to prepare a research using internet search, data security and protection, designing webpages using Front Page Programming, Visual BASIC, computer networks and skills, besides the Windows XP and the computer use skills. However, in 2001, the MOE supplied all Kindergarten schools in the state with ICT to improve their basic learning and prepare students from the age of 4-6 to use ICT in their later education (Ministry of Education, about the directing of computer, 2012).

After the expansion of ICT at all basic levels of education in Kuwaiti schools, the MOE signed an agreement with a computer technology company in order to run program for students and teachers for the development of their skills and ICT knowledge (United Nations Educational Scientific and Cultural Organization, 2004). The company’s job was to provide technical consultation and develop tools and ICT in the education system for students and teachers. In addition, the company would cooperate on any future ICT plans at the MOE. Considering ICT as an important tool and major issue in Kuwaiti education, Kuwait government carried out a new 25-year ICT plan, which mainly aimed to update the educational system in Kuwait by setting up the ‘Education Net’ in all public schools and libraries and linking them in one network, as well as exploring the remote learning and distance learning for all level of education (United Nations Economic and Social Commission for Western Asia, date unknown).
According to Ronald (2009), the MoE in Kuwait currently applies its strategic educational project in state schools. This project is destined for 2005-2025 in order to develop the education system with technology, through the use of personal computers, Smart boards and other technologies at 350 schools within 30 classrooms per school. Teachers will also be supplied with notebooks to enhance their teaching. This project has a budget of £1 billion from the Kuwaiti government, with a further cost of £60 million for an E-education project which concentrates on wide ICT training for teachers and educational staff.

### 2.10.1 ICT at the public University in Kuwait

ICT in education is one of the main objectives of education as set by the government... Schools, universities, cultural institutions, and centres of innovation, science and technology should strive continually to adopt their practices to the possibilities of ICT to improve education for all Kuwaitis.


Since the end of the Gulf War in 1990, the MoE and MoHE have been interested in projects that introduce ICT into Kuwaiti higher education institutions, e.g. into the Kuwait public University. In 1992, the Internet was first used at this public university. Therefore, the public university in Kuwait considered as the first educational institution to provide Internet access within the Arab world. Since then and up to the present, the government of Kuwait has allocated a huge budget to fulfil the project’s aims in introducing and developing the use of ICT in the teaching and learning process (United Nations Economic and Social Commission for Western Asia, date unknown; United Nations Economic and Social Commission for Western Asia, 2003).

Currently, ICT is widely used in all departments and colleges at the public university in Kuwait. Most classrooms are supplied with Interactive boards; moreover to the university departments have internet connection through Wi-Fi, in order to enhance the teaching and learning process (Economic and Social Commission for Western Asia, 2007), also Virtual Learning Environment
is available to use via using Blackboard tools for students and tutor at the Kuwait public university (Hamade, 2012). In their article paper Gholoum and Ahmed state that “ICT has also contributed significantly to present new HE Learning Models such as Distance Education, Electronic Learning and Blended Learning” (Ghuloum & Ahmed, 2011, p. 75). Although virtual classes were originally launched in 2004, so far there are no virtual universities in Kuwait (Economic and Social Commission for Western Asia, 2009).

According to Singh, O'Donoghue and Worton (2003) technology is important in education for the improvement of the learning experience. With regard to this point, learning at the public university in Kuwait is now enhanced through the use of ICT. This is thought to improve the learning process and experience. E-learning, blended learning and distance learning in limited method are consequently applied in the Kuwaiti education system at the public university. Virtual learning environments, such as Blackboard, are in use to deliver the literature and to submit assignments, as well as for Online quizzes, and homework submissions, and for to online discussion. These tools have changed the face of learning as well as providing an ideal opportunity to teach anytime and anywhere (Abbot et al., 2011).

Libraries at the public university in Kuwait are considered as one of the facilities used to serve education. Libraries in this university are open till late afternoon in order to serve students and tutor research, since it has access to a large number of databases and electronic texts (Al-Ansari, 2006). This reality was confirmed by Aman and Abdel Motey (2008, p. 40) who state that ‘Academic libraries in Kuwait are making significant and wide advances to connect and provide a range of networked-based services and recourses to their users’.

Additional to the extent of ICT at the public university classes and libraries, there are three large centres fully equipped with modern ICT; those centres are known as the Distance Learning
Centre, the Khwarizmi Training Centre and the Information System Centre. However, the Distance Learning Centre also presents international conferences and classes to students and tutors from various universities and colleges abroad, by using modern ICT tools. It is also known as the centre responsible for E-learning supervision, while the Khwarizmi centre’s mission is to offer technical assistance to the university committee in addition to presenting private courses in basic to high level ICT training (United Nations Economic and Social Commission for Western Asia, 2003). Furthermore, the College of Business Administration in the Public University has more than 7 computer labs, the labs are fully equipped with modern ICT tools to serve students learning and research purpose, beside the labs are available to students at the rate of 10:1, this project of ICT is funded by the Kuwaiti banks and companies such as Burgan Bank and KAMCO, aiming to create a new generation of financial employees and experts, to fill the jobs in Kuwaiti financial markets in Kuwait (The Collage of Business Administration, 2007).

According to the official website of the public university in Kuwait, it has been noted that there is a lack of ICT module being taught to students from most disciplines (Kuwait University, 2012). Consequently, and in spite of Kuwait being the largest information technology (IT) market in Gulf area, after Saudi Arabia and the UAE (United Nations Economic and Social Commission for Western Asia, date unknown), ICT education at the public university is found to be poor, as are undergraduate ICT skills (Al-Dehani, 2011). The public university offers ICT courses in most scientific disciplines, and it is of course obligatory and particularly intensive in the area of Computer Science, Computer Engineering, IT and IT management. Nevertheless, despite the fact that ICT courses are found to be very poor and few in number in the Humanities, they are still considered as compulsory. For example, the disciplines of Humanities, Arts and Education offer only one course relating to ICT, namely, ‘Introduction to Computers’ and this
course is regarded as fundamental, covering basic ICT skills (United Nations Economic and Social Commission for Western Asia, 2003). On the other hand, the public university offers several academic programmes related to ICT. Courses are taught through and about ICT in disciplines such as Computer Science, Computer Engineering, IT and IT Management. What is also remarkable are the numbers of students who intend to enrol in IT sections and specializations. For this reason, ICT courses and disciplines are spreading and increasing in Kuwait, particularly with the establishment of new private universities that offer the same disciplines (United Nations Economic and Social Commission for Western Asia, date unknown).

2.10.2 ICT at the Private University in Kuwait

The private university chosen for this study is classed as a private university in the state of Kuwait; the university was founded in 2003 and is located in the Salmiyah region in the middle of Kuwait City. This private university is a Liberal Arts institution constructed on the American model of higher education, which aims to improve students’ critical thinking, successful communication and respect for multiplicity. The university campus has a modern design and ICT, such as computers, digital technology; high speed Internet, virtual learning and E-learning are all used by both the faculty and students for learning and teaching purposes.

According to the United Nations Economic and Social Commission for Western Asia (2007), remote learning and E-learning are used at a number of private universities and schools. Therefore, the private university in this study is characterized one of the private institution having a high reputation amongst Kuwait universities for using ICT in educational processes, most classrooms in this university are provided with computers and Smart boards to be used by the faculty for introducing the curriculum during lectures. Access to free Internet is available for students on campus. Moreover there is access to a virtual learning environment that connects
students with their tutors through tools such as chat, delivery of undergraduate homework and assignments, as well as enabling tutors and students to view the syllabus and notes. Moreover, the library of the private university is furnished with computers and the Internet which serve both the faculty and students so they can search for information via the World Wide Web and electronic databases. However, ICT education and training are considered to be very important in the private university in Kuwait, as there are obligatory ICT courses taught to students during their first academic years, those courses are taught both about and via ICT to students from all academic disciplines, and then more intensively taught and applied for Science and Engineering students (American University in Kuwait, 2013).

The education system at the private university in Kuwait is actually based partly on the use of ICT and partly on traditional learning methods. Virtual learning environments and E-learning are used to educate students, who are required to go online and register their courses at the beginning of each academic year. The university has its own special virtual learning environment which is designed for use by students for learning purposes, such as when registering for academic courses, paying fees online, using discussion tools with other students and submitting assignments and homework. Therefore, the process of accessing online materials has become more elastic and rapid with fewer hurdles (Concannon, Flynn & Campbell, 2005). Moreover, the university library website is linked to various electronic databases for the purpose of undergraduate research. ICT education and training are considered to be very important in this private university, as there are ICT courses to be undertaken by students during the academic year (American University in Kuwait, 2013).
Part Two: ICT, literature on attitudes and research framework

2.11 Introduction

Information and communication technologies (ICTs) are the most modern tools applied in governments, companies, institutions and homes in order to facilitate the exchange of information by means of modern technology. It enables those who fund projects to save time, effort and money. Recently, ICT tools considered very important, especially for people who need to connect with others some distance away from them, or others around the world. These tools have made our lives easier than we ever expected. Moreover ICTs has become the magical tools that operate things more easily than anything else ever did in the past.

2.12 Information and Communication Technology (ICT) definitions

ICT has been defined by Blurton (2002, p. 1) as a ‘diverse set of technological tools and resources used to communicate, and to create, disseminate, store, and manage information’. However, the definition chosen for this research is ‘Any technological device or tool, including software used to communicate, share and manage information for the purpose of enhancing and supporting learning at Kuwaiti higher education institutions’.

2.13 ICT as a learning tool

Before the innovation of ICT, students used to go to school carrying their traditional learning tools, such as pencils or pens, textbooks, notebooks and other recognized tools for recording the knowledge they had obtained through traditional learning methods. However, after the emergence of ICT and the innovation of digital technologies, computers and laptops took on an important, even essential, role in education. They have nearly replaced many traditional tools and have thus changed the way in which students learn. The use of ICT and computers has become an alternative way of sourcing and storing knowledge (Davis et al., 1997). Moreover,
in education students receive 87% of information from their brains through using their eyes, 9% of information also received by using their ears and 4% of information is received by using other senses, and so learning through using ICT tools attract students attention more than verbal ways of teaching or learning (Kamal, Nadira and Thahira, 2010).

Furthermore, the ICTs consider flexible and logical tools and are perhaps better known than any other tools in education. In fact ICT tools considered as a powerful pedagogical tools (Sutherland and Triggs, 2009), believed to play a major role in learning both within and beyond the curriculum at different levels of education (Gillespie, 2007).

Gillespie (2007) argues that the importance of ICT tools used by students in learning has enabled students to become more independent in their knowledge acquisition in that they can use ICT tools interactively and seek out their own questions and ideas. Moreover, students construct their knowledge by engaging with ICT tools, which helps to transform their education for the better. In the same context Sutherland and Triggs (2009) added that the power of ICT tools lies in making connections between different elements in an activity; they clarified this by indicating how students use ICT in their daily learning, for example, when they are asked to carry out an activity, or complete a homework or assignment. They begin by using a computer or laptop connected to the Internet, and then they search for information on websites such as Google or other helpful links. After this, they need to transfer the knowledge they have gained from these resources into a document, so they use word processor software with a new file. The students then apply their ICT skills in copying, pasting, inserting pictures from other files and printing out copies to organize and complete their Word document, which is then ready to be sent to the tutor via electronic means, i.e. by e-mail. All the procedures outlined above have demonstrated ways in which learners use ICT efficiently and productively.
On the other hand, Sutherland & Triggs (2009) dismiss the importance of ICT tools in learning. Although ICT tools have now become more sophisticated and widespread, the authors suggest that students should choose an appropriate ICT tool to create something possible, only when it is impossible to do so using other method. They consider multimedia and hypertext as an example of these tools. They point out that ICT tools do not have to replace all non-ICT tools, even if they have many creative features. For example, interactive whiteboards are not essentially better to use than ordinary whiteboards as they both serve the same purpose, which is to transfer new knowledge to learners. Moreover, recognizable learning tools, such as books, papers, pencils and dictionaries have their own significance which cannot be completely replaced with ICT tools.

In higher education, the development process of teaching and learning are essential for an institution’s reputation. Therefore, the availability of ICT tools and the utilisation of those tools become very important for the reputation of education institutions. Moreover, ICT tools are frequently used by students at all levels of education, and it can also play an important role in students’ daily learning life (Clarks, 2006; Gillespie, 2007). Besides, ICT tools are easy to acquire, since commercial ICT companies compete to present a suitable price in selling a range of ICT tools of different types, sizes, features and for a variety of uses. An example of these consists of either fixed or portable computers; iPads; Smartphones, Virtual Learning Environments (VLEs); interactive whiteboards; software; social networking applications available for different ICT devices, and indeed, all of these tools are then most useful and valuable with an Internet connection. In HEIs, most ‘universities are now rich in technology resources and technology-based activities’ (Selwyn, 2010, p. 34).
Furthermore, the employment of ICT in education is found to meet different reactions according to the author. However, most of the arguments revolve around proper ways of using ICT in education to support and improve traditional methods. Significant evidence has been found in relation to ICT features and students’ motivation and engagement in learning (Cox, 1997; Kennewell et al., 2008). Moreover, Fu (2013) points to several important benefits of employing ICT in education, indicating that ICT tools support student-centred and self-directed learning, since ICT facilitates the acquisition of concepts. In addition, ICT produces a creative learning environment for students through their engagement with different ICT such as e-books, computers, iPads, VLEs and so on to undertake learning activities. Another benefit of ICT is that it offers more options to develop students’ critical learning and improve teaching and learning quality. The following section will highlight the important ICT to be used in education, in relation to the advantages of ICT in education and from the point of view of authors and researchers in the same area.

2.13.1 The Internet

The Internet is considered as an international ICT innovation; it is ‘a collection of various services and resources’ (Deore, 2012 p. 111). The Internet has become vital to use in almost every house, company, school, organisation, and higher education institution across the world, as well as by individuals. The innovation of the Internet has brought together the world’s news and information into a single space. Communication and information sharing between people has become easier and faster. It could even be said that it has simplified life enough to become irreplaceable. The Internet is now used for purposes such as shopping online, reading and watching the latest news, contacting others in different locations via social network programmes, or sending emails to rapidly and easily exchange information. The use of the Internet has in fact
increased with great speed across the world. According to the World Internet Stat (2014), the Middle East’s use of the Internet constitutes 3.7% of world Internet use (Figure 2.3).

![Figure 2.3: World Internet Usage and Middle East internet usage](image)

According to the World Internet Stat, (2014), the use of the Internet in Kuwait has been rapidly increasing over the past ten years. Table 2.1 shows Internet growth and population statistics for the state of Kuwait, with 74.2% of population in Kuwait using the Internet.

<table>
<thead>
<tr>
<th>Year</th>
<th>Users</th>
<th>Population</th>
<th>% Pop.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>600,000</td>
<td>2,630,775</td>
<td>22.8%</td>
</tr>
<tr>
<td>2008</td>
<td>900,000</td>
<td>2,596,799</td>
<td>34.7%</td>
</tr>
<tr>
<td>2009</td>
<td>1,000,000</td>
<td>2,692,526</td>
<td>37.1%</td>
</tr>
<tr>
<td>2010</td>
<td>1,100,000</td>
<td>2,789,132</td>
<td>39.4%</td>
</tr>
<tr>
<td>2012</td>
<td>1,963,565</td>
<td>2,646,314</td>
<td>74.2%</td>
</tr>
</tbody>
</table>

The emergence of the Internet has even led to the appearance of new ways of learning in educational institutions. E-learning, distance learning and blended learning have helped facilitate students’ learning through their use of computers or other technological devices to communicate with the tutors and students themselves, in order to exchange information, even if they are far away. However, the Internet is like any other innovation, with its own advantages and disadvantages.
The advantages of using the Internet in learning are discussed by Deore (2012) in his latest article. He points that Internet has a huge source of information, as well as considering it as useful for communication between students. Furthermore, searching engines and data bases, for example, help students to complete tasks quickly and more easily. Deore has raised the idea of the role of the Internet in developing students’ critical writing and thinking skills, due to the vast amount of information that students receive and memorise every day from the Internet. This information needs to be organised and sorted to decide what is relevant for the course work. Moreover, Deore described the internet as ‘the most powerful educational tool for teaching and learning’ (Deore, 2012. p 112). The same idea has been proposed by Johnson, Adam and Cummins (2012, p. 5) who state that ‘students already spend much of their time on the internet, learning and exchanging new information’. According to Al-Ansari (2006) the internet considered the main force of changing education in higher education, and the main vehicle of learners’ communication and learning specially with the use of www browser, and the huge amount of information students benefit could benefit from. However, Al-Ansari pointed to that the Internet could become a point of conflict for students in HEIs where it is slow, inaccessible or takes too much time.

2.13.2 Virtual Learning Environments (VLEs)

Virtual Learning Environments (VLEs) are considered as important for ICT in learning at HEIs. VLEs are a collection of integrated options enabling the management of online learning, providing a delivery mechanism, student tracking, assessment and access to resources (JISC infoNet, 2010).

On the other hand, many universities invest in various VLEs in their education systems, in order to support the traditional education process (Al-Hogail and Mirza, 2011). VLEs are used regularly by tutors and students because of their useful functions; for example, they can make
learning more flexible since students can get the information they want with no limits to time or distance (Kennedy, 2009). This fact was assured by Matkin who stated that “[Blackboard, Web CT] even today, are used primarily to support residential or classroom instruction” (Maktin, 2007, p. 3). Moreover, several studies have pointed to the advantages of using VLEs in higher education and students’ learning, for instance, Moosa and Al-Mubarak (2005); Coopman (2009); Yang (2007) and Boumarafi (2009) point to the use of Blackboard to facilitate communication between tutors and students, due to the advantages of synchronous and asynchronous tools that assist students in delivering their assignments and homework tasks, attending online conferences, and following tutors’ notes about courses. Hence, communication between students and tutors becomes easier and faster, since tutors can send huge amounts of information about courses to all their students in just a few seconds. Elsewhere, Yang (2007) points out that VLEs encourage students to work in groups, sharing information and discussing course work using the discussion tool available in Blackboard, and so this can develop learners' skills through facilitating engagement with online activities and communication (Craig, 2007).

Elsewhere, Coopman (2009) and Boumarafi (2010) indicate the advantages of VLEs in increasing students’ motivation towards learning, as well as strengthening their learning engagement, due to the abundance of stimulating materials used by tutors in their online courses. Hence, their engagement can significantly affect their cognitive learning activities (Cox, 1997). On the other hand, one disadvantage of VLEs consists of ‘The difficulties academics encounter when using these technologies for teaching including: a lack of time dissatisfaction with the software available’ (Eynon, 2005). Bleimann (2004) has also clarified that delayed feedback from tutors to their learners can negatively influence their motivation. In the same context, researchers conclude that a poor Internet connection and the absence of technical support can
negatively affect learners' attitudes towards VLEs, because of the absence of support for learners when they are miles away from a university campus (Al-Fadli, 2009; Taha, 2007).

2.13.3 Mobile learning (M-Learning)

A few years ago, a new type of learning appeared in Western countries, called Mobile Learning or M-Learning. El-Hussein and Cronje (2010, p. 20) define M-learning as ‘any type of learning that takes place in learning environments and spaces that take account of the mobility of technology, mobility of learners and mobility of learning’. The development of handheld devices or mobiles, with the innovation of wireless technology, has changed people’s social lives. Now, well known telecommunications companies produce many devices in different forms with advanced technology and features. For example, smartphones, such as iPhone, Galaxy and others with similar functions and features are very popular with the new generation. They have multiple levels of functionality, like those that exist in computers. Moreover, the use of mobiles becomes easier and more available any time since they are portable and increasingly affordable. Therefore, and from this standpoint, educators have found smartphones to have many advantages for education and specifically, for contemporary higher education, where the content and services are provided for students by their university, alongside traditional learning (El-Hussein and Cronje, 2010). University students are a digital populace who have grown up with technology. They are accustomed to an information and knowledge society (McLaren, 2008). Mobile learning has also become known in recent years as an exciting means of curriculum delivery and it is gradually being used more and more in different learning environments. It allows both students and tutors the chance to engage with a variety of technologies, such as podcasting, and social communication, recording and sharing information via the most popular social networking software amongst the new generation of learners (McCombs, 2010; Paine, Schofield, West and Taylor, 2011).
Podcasting is one popular service and feature used in M-learning which was first introduced in 2004, and is an instrument that allows virtually anyone to receive or send text messages or exchange information (Farkas, 2006). Nowadays, students can download different podcasts related to their subjects from their tutors or podcasts from around the world, both in and out the classroom. Students may also podcast lectures by their tutors, and when this is applied, students often find themselves more motivated and creative on their courses and in their learning (Kesim and Agaoglu, 2007). Another different means of communication and exchanging information amongst the new generation is the use of social networking software that exists in smartphones, iPads, and computers. Social networking software such as Facebook, Skype, WhatsApp and others allows individuals to communicate and share information with ease and speed and at no cost. The only condition for such communication is the availability of an Internet connection. Social networking software includes the likes of Facebook, Twitter, WhatsApp, Skype and others used to visibly discuss online. These are being implemented by the new generation for communication and indeed, university students are included in this. Naglar and Ebner (2009) argue in favour of the importance of engaging new social networks in education, stating that:

> These new technologies enhance the traditional face-to-face lecturing and that e-Learning as it had been understood in its early years is changing to new dimensions… the so-called Net Generation exist if we think in terms of basic communication tools like e-mail or instant messaging. Writing an email, participating in different chat rooms or contributing to a discussion forum is a part of a student’s everyday life. (Nagler and Ebner, 2009, p.1, 7).

A study was recently carried out in Kuwait to investigate the types of social network individuals aged between 17 and 25 use for communication in their social lives. A sample selected from two higher education institutions in Kuwait included Kuwait University. This sample participated in completing questionnaires amongst a total of 564 students, both male and female. However, the findings of the study revealed that 62% of young males and 44% of females use Twitter to communicate in their social lives. Another finding in the same study showed that 86% of the sample used smart mobiles and their interactive social networks for social
connections, 42% used computers, whether a PC or laptops for the same purpose, and finally 33.3% used iPads for social communication. The study suggests a need for further investigation of students’ use of this software in their education and recommended that such software should be employed and investigated to serve students and tutors in KHEIs (Alkandari et al., 2012).

Recently, ICT is available in most universities at the developed world (Al-Tahih, 2004). Whilst students are making a limit use of them for learning purposes, a fact which is not often mentioned in discussions on technology and education researches (Selwyn, 2008).

Earlier in this chapter, the availability of ICT at Kuwaiti higher education institutions was mentioned with reference to knowledge acquisition. However, little attention has been paid to ICT research in Kuwait concerning students’ attitudes towards using ICT in their learning at HEIs. Attitudes are strongly shaped by learning environments, which help create the right attitude for students (Clarke, 2006). Therefore, and within this respect, an investigation of students’ attitudes towards using ICT is essentially needed.

2.14 Definitions of attitude

There have always been plenty of definitions of ‘attitude’ as a term. It has mainly been defined in social psychology research (Fleming, 2005). Allport (1953, p. 810) refers to attitude as ‘A mental or neural state of readiness, organized through experience, exerting a directive or dynamic influence upon the individual’s response to all objects and situations with which is related’. Halloran’s definition of attitude states that ‘Attitudes are not innate; they are learned, they are developed and they are organized through experience’ (Halloran, 1970, p. 14). An early definition of attitude by for Hogg and Vaughan (2005, p. 150) describes it as ‘a relatively enduring organisation of beliefs, feelings, and behavioral tendencies towards socially significant objects, groups, events or symbols’. Furthermore, Fishbein and Ajzen (1975, p. 216) define attitude as ‘individuals positive or negative feelings about performing the target behavior’.
According to the above definitions, we could summarize as follows: attitudes towards a subject differ from one person to another. The attitudes of individuals are developed over time and throughout their previous experiences. Therefore, attitude is considered as something which is gained rather than connate. Individuals’ attitudes control their behavior towards a subject; this behavior might take the form of either positive or negative actions. Overall, the reasons for an individual’s attitude comprise an important issue to be discussed and investigated, because the formation of attitudes continually changes over time, depending on what individuals feel or believe about a specific subject.

2.15 Attitude and behaviour

Attitude is a positive or negative assessment of situations, people or objects which influences what we believe or how we behave (Ajzen and Fishbein, 1980). According to Mcleod (2009) attitudes consist of psychological components which are linked together to form individuals’ attitudes, and which control their behaviour towards a subject. There are three components of attitude: affective, behavioural and cognitive. Affective components consider people’s feelings or emotions towards a subject, while behavioural components consider the way that attitudes impact how people act towards a subject. As for the cognitive component, this involves people’s beliefs. Therefore, there is a link between behaviour and attitude and this affects individual action in relation to that subject. Fishbein (1967) argues that individual attitudes are learned rather than innate; once a person has learned an attitude, he or she also learns the appropriate reaction or behaviour to accompany it. As a result, Fishbein suggests that no natural relationship exists between behaviour and attitude, as people may maintain the same attitude towards a subject but they might have learned different responses, which make them act or behave differently.
Since (1970), Fishbein and Ajzen have worked on developing theories of social psychology and attitudes in order to predict and understand changes in human behavioural intention and attitude. They have suggested a relationship between individual attitudes and behavioural intention, and due to this, they have introduced The Theory of Reasoned Action (TRA). The theory of TRA was constructed according to previous research into attitude, and aimed to predict relationships between individual behaviour and other phenomena, through linking specific factors, such as behavioural intention (BI), attitude (A) and subject norms (SN) (Fishbein and Ajzen, 1975). Despite TRA’s attempt to predict individual behaviour and attitudes, it does not take into account external factors, such as personal, demographic or any other factors which might have an impact on an individual’s attitude towards a subject. Ajzen and Fishbein (1980, p. 9) point to this fact, when they state:

> Although we recognize the potential importance of such factors, they do not constitute an integral part of our theory but are instead considered to be external variables. From our point of view, external variables may influence the beliefs a person holds or the relative importance he attaches to attitudinal and normative considerations.

### 2.16 The research framework

Extending to the Theory of Reason Action (TRA), a model was established in 1986 by Davis in his doctoral studies, namely the Technology Acceptance Model (TAM) (Davis, 1986, p.24). This model was formed due to the appearance of the revolution in technology and the adoption of technology into many disciplines and sectors and it was designed to investigate individual attitudes towards technology, and predict their behaviour (actual use) to its use, conducted within variance specialization. The Model was used in further studies and revealed with significant results, TAM model showed in Figure 2.4.
TAM is held to be a theory that deals with the attitude and the actual use of technology (behaviour) of individuals. The theory was suggested to ‘provide an explanation of the determinants of computer acceptance that is general, capable of explaining user [attitude] and behaviour across a broad range of end-user computing technologies and user populations’ (Davis et al., 1989, p. 985). Therefore, TAM was introduced to reveal users’ acceptance of Information System and technology, as well as to explain the common determinants of computer use. One of TAM’s main objectives is to give attention to the influence of external variables on individuals’ internal beliefs, attitudes and behaviour and this will certainly help researchers to identify why particular ‘systems may be unacceptable [and] to pursue appropriate corrective steps’ (Davis et al., 1989, p. 985).

Basically the TAM model focuses on two important factors which impact individuals’ attitudes and behaviour towards the implementation of technology. It also considers the two main factors in promoting the behaviour associated with the acceptance of technology. Further to both factors are the main essential determinant influencing the attitudes to IT use (AlEnezi et al.,
2010), the essential components of TAM are Perceived Ease of Use (PEOU) and Perceived Usefulness (PU), and both these factors must be defined in this section of the research for an improved understanding of TAM’s essential elements. Consequently, PEOU is defined as ‘the degree to which a user believes using the system to be free of effort’, whilst the PU factor is defined as ‘the degree to which a user believes that using a specific application system will enhance his performance’ (Davis, Bagozzi and Warshaw, 1989, p. 985).

However, although both TAM and TRA reveal individuals’ behaviour and attitude regarding a subject, TAM differs in terms of how individual behavior and use of technology are determined by the attitudes which consist of two important components and they are Ease of Use and Usefulness. TAM also differs from TRA, wherein Subject Norms (SN) do not fit into TAM, due to their psychologically and theoretically insecure position (Davis et al., 1989). However, SNs were added later in TAM2 by Venkatesh and Davis (2000).

In addition to the main TAM factors in predicting individual attitude towards technology acceptance, it was point out that one of the TAM ideas is to introduce a starting point for testing external variables on individuals’ attitude and behaviour. TAM theory also focuses on external factors which influence internal beliefs such as attitudes, so that research ‘can identify why a particular system may be unacceptable, and pursue appropriate corrective steps’ (Davis et al., 1989, p. 985). In conclusion, and according to the TAM theory, all other variables not clearly integrated into the model, are predictable and expected to influence individual attitude, behaviour of technology use, through factors of TAM such as PEOU and PU (Davis et al., 1989). These external variables may include system characteristics (Moore and Benbasat, 1991), support and users’ characteristics (Davis et al., 1989; Ndubisi, 2006).
TAM theory was, and still is, being used as a framework for many studies; it has been widely used to clarify users’ attitudes and intentions to accept the use of technological innovations across different users and within a variety of contexts. For example, word processors (Davis et al., 1989); Blackboard (Ndubisi, 2004); e-mail (Szajna, 1996); web browsers (Morris and Dillon, 1997); mobile internet (Phuangthong and Malisawan, 2005); WebCT (Ngai, Poon and Chan, 2007) internet-based courses (Arbaugh, 2000); E-learning, (Alenezi, Abdul Karim and Vello, 2011); on-line shopping websites (Vijayasarathy, 2004); Moodle use (Sumak et al., 2011) (Edmunds et al., 2012); the Internet (Shih, 2004); and ICT use (Rob et al., 2012). The reputation of TAM is also apparent in the sheer abundance of articles citing the initial TAM papers by (Davis 1989; Davis et al., 1989; Venkatesh and Bala, 2008).

TAM theory has also been widely applied in variance research due to its ability and simplicity in investigating individual behaviour (King and He, 2006). Consequently, TAM is considered as the most generally applied theoretical model in the field of information systems.

Furthermore, there is significant TAM applicability and validity in most experienced research regarding the investigation of students’ attitudes and behaviour towards technology in higher education (Alenezi et al., 2010). The current study is aiming to investigate the attitude of students towards using ICT in KHEIs learning, addition to this study aims to explore the factors such as type of university, gender, academic discipline, language of learning, ICT experience and the ICT support. Those factors were determined to identify its influence on students’ attitudes, and finally the study is also investigating the relation of students’ attitude to their actual engagement with ICT at their universities learning. TAM model will be applied as a basic model to the current study since it fits its aims and objectives, as well as the current study considers that perceive Ease of Use (PEOU) and perceive Usefulness (PU) are the main and essential components of the students’ attitude towards ICT in their university learning.
2.17 Attitudes towards ICT

Attitudes towards ICT have been an important issue in the area of education for many years, specifically in higher education where ICT is mostly used in learning and teaching. A great deal of research has been conducted to investigate students’ or tutors’ attitudes towards using ICT in learning or teaching, as well as various research has been also conducted to examine different factors that impact their attitude, and particularly when new technology is adopted in education, and where the learning process becomes more flexible with fewer geographical barriers (Sivapalan and Cregan, 2005), those research has enriched ICT literature and has attracted the attention of educators interested in further research in this area. In the next part a various research concerning ICT at higher education and students’ attitude will be reviewed.

Preliminary work for TAM was presented by Davis (1986) in his doctoral study. The author then conducted another study at the University of Michigan, where TAM theory was first applied to predict the attitudes of 107 business school students in relation to using computers in their learning. Factors such as usefulness (U) and ease of use (EOU) were examined for the attitudes of students, and so Questionnaires were distributed to students to gather data about their attitude and use of computers. The findings from the study showed that students had high attitudes towards using computers; as well as the U and EOU factors have had a significant influence on students’ attitudes (Davis et al., 1989).

Another study was carried out by Ngai et al. (2007). The authors were interested in investigating students’ attitudes towards using ICT in their learning. Therefore, the TAM theory was used and extended as a basis for investigating their attitude through Usefulness (U) and the Ease of Use of ICT (EOU) on students’ attitudes. The study sample consisted of 836 students from different universities in Hong Kong. Questionnaires were used to collect data regarding
the study aims. Findings from the study revealed a strong attitude of students towards using ICT. Also TAM’s main factors, PU and PEOU confirmed a significant direct effect on students’ attitudes.

Sumak et al. (2011) investigated the attitude of students towards using Moodle as an open source of E-learning. The authors used TAM framework as a basis for their research, and because of this, a sample consisting of a total of 235 students were asked to fill out questionnaires. The two main essential factors of the TAM model, Usefulness and Ease of Use were examined with regard to Moodle. Findings revealed that students’ attitude was high, and both U and EOU factors had a direct impact on students’ attitudes towards using Moodle in their learning, although Usefulness factors had a stronger and more significant impact on students’ attitude. Finally, the author concluded that students like to use ICT if they feel it is useful for their grades and knowledge. In the same context, a study was conducted by Park (2009) at one HEI in Korea. A total of 620 students were surveyed to investigate attitudes towards ICT in learning. The findings showed positive attitudes amongst students towards using ICT in learning, and both TAM factors EOU and U were found to significantly affect students’ attitudes towards ICT. The same findings were found by Teo (2008) and Gill and Dalgarno (2008), who investigated the attitude of pre-service teachers towards using ICT in their learning. The findings of both studies revealed positive attitudes amongst students towards ICT, strongly influenced by the factors of the TAM model.

In the Gulf region, Abdalla (2007) investigated the attitudes of 518 students towards ICT at Emirati HEIs; TAM was utilised as a framework for this purpose. The findings of the study showed a positive attitude amongst students towards using ICT in their learning. Besides, the findings also found that both U and EOU factors influenced students’ attitudes in a positive way. A recent study by Rob et al. (2012) carried out in the UK was applied using TAM to predict
students’ attitudes towards the use of ICT at the Open University. An online survey was used to gather data on students’ attitudes through two main factors: the EOU and U of ICT. Study findings revealed that students have a positive attitude towards ICT. Moreover, another finding showed that EOU and U can significantly affect students’ attitudes. Furthermore, the same was found to be true in a different study carried out at the same year by Edmunds et al. (2012) in the UK, who investigate students’ attitudes towards ICT use; questionnaires were designed and distributed to 421 students in order to examine EOU and U in relation to students’ attitudes towards using Moodle. Findings from the study indicated that the attitude of students was positive, as well as to TAM factors EOU and U were significantly affecting their attitudes in a positive way. Accordingly, the authors of the study concluded that students preferred using ICT and believed in its role in enhancing their learning and knowledge.

Elsewhere, Porter and Donthu (2006) investigated undergraduate attitudes towards using ICT in learning. The study sample consisted of students at a large public university in the United States of America. Questionnaires were distributed to a sample of 614 students, with only 539 responses received. Consequently, the study findings showed that the factors of TAM model have a positive and strong influence on students’ attitude towards using ICT in learning.

In the same context a study carried out by Park (2009) at Korea probed into students’ attitude Towards ICT, The attitude towards using ICT was investigated amongst 628 students in relation to TAM factors the EOU and THE U of ICT in learning. The finding revealed that students have a positive attitude towards ICT, another finding showed that EOU and U were significantly affecting students’ attitude.
2.18 Factors influencing students’ attitudes

despite the many attempts to locate ICT as an essential tenet of university education, beside many private and public universities are employing ICT tools for offering academic programs and to support the traditional way of learning and teaching in their institution (Masrom, 2007). However, students have been found to make only limited academic use of ICT in their learning because of the irregular and unpredictable variables that impact students’ attitude towards use of ICT across different courses and universities (Selwyn, 2003, Marriott and Selwyn, 2004).

Moreover, Selwyn (2008) claimed that students’ academic ICT use is linked mainly with their leisure. She indicates many factors influencing students’ ICT engagement in their Universities, factors such as technical support, gender, subject discipline, educational back ground and individual factors considers to be important when engaging with ICT, as well as needed to be examined with ICT in Higher education, as those factors influences Students perceptions towards using ICT in their learning. Selwyn confirms the significance of the role of several factors in changing Students attitude and perception towards using ICT.

Several international studies have investigated the important factors that affect students’ attitude towards using ICT, but so far no study was conducted in private and public learning institutions. In Kuwait however, only one study have investigated students attitude in both private and public universities and this study was conducted in Kuwait by (Al-Doub, Goodwin, Al-Hunaiyyan, 2008). This could be due to the fact that opportunities are rare outside Western countries, due to fewer available institutions and facilities that considers public and government funded. However, in the Gulf area and particularly in Kuwait, many private universities were found to offer education to students looking to continue their higher education. The MOE is actually providing incentives to Kuwaiti students with internal scholarships to join private universities, in
order to reduce the huge number of students who apply to Kuwait’s state university, with the aim of gaining a good education for better job opportunities.

Another factor to consider in influencing students use of ICT is the language of learning in Kuwait universities, since the international language of education is English. In the Middle East and Gulf region, however, at KHEIs English language consider the main learning and teaching language at the private universities which are listed below the educational system of foreign countries that follows them. But at the public university in Kuwait the first language used for learning and teaching is Arabic. However Arabic and English languages are used for several schools only such the school of science, the school of engineering, the medical school and the school of administrative science. The English language is considered as a key aspect of education, since it is seen as international. Moreover, in the developing countries where the English language is regarded as the second language in learning and teaching, ICT use and engagement represent a serious barrier to students, the reason being that the English language is the main language of the Internet and 80% of internet content is presented in the English language (Tinio, 2002). Lambert (1996) argues that students’ access to ICT not only depends on the ICT infrastructure in learning institutions, but also on students’ knowledge of the English language which could be used to make the best use of ICT in their learning, Lambert states that students’ massive use of ICT is noted in countries where the English language is official in students’ teaching and learning, compared to other countries where the learning and teaching language is not English.

Furthermore, English language knowledge with ICT skills is required for students’ engagement with digital world (New London Group, 1996, cited in Selwyn, 2009, p. 35). In the gulf area and particularly in Kuwait, English language found to be a barrier to the use of ICT from being
adopted in many learning and training process (Ali and Magalhaes, 2008; Alkharang and Ghinea, 2013). Hence, factors such as English language and type of university are very important factors that need to be investigated at HEIs in the Gulf or Arab region and particularly in Kuwait. Therefore in this study both factors will be explored in relation to undergraduate attitudes regarding the use of ICT in learning at KHEI.

As for the gender factor, Kompf (2005) discusses the impact of ICT on students learning, stating that ICT use in education may often be affected by the gender of the learner. Li and Kirkup (2007) pointed to the importance of gender factor in relation to students’ attitude towards ICT, beside they stated that most of gender studies were carried out in western countries, Li and Kirkup considered gender as a social concept and supposed to show differently in other countries with different cultures. Cooper (2006) indicate that male students are more interested and competent in using ICT comparing to female students, he stated that male students are technically more competent than female students, as well as female are socialized differently with ICT tools, and this have impact their performance in using ICT in their learning. Kubiatco (2010) indicated that male students are technically more capable than females’ students. Hence, gender factor consider one of the important factors in ICT research within different discipline and specifically in Education, and therefore needed to be examined in its relation with ICT students’ attitude.

As regard to discipline factor and students attitude towards using ICT at their university learning, Selwyn (2008) stated that academic discipline is one of the most vital factors that should be investigated in HEIs learning, ‘further confirmation is there for required of the role of variables such as subject discipline’ (Selwyn, 2008, p. 14).
As to the ICT experience factor, it has been noted that, since the employment of ICT in education, educators have found students’ ICT experience to be a vital factor in relation to students’ attitudes towards using ICT in learning. Besides, ICT ‘experience was given considerable attention from some authors in addition to two attitudinal factors PU and PEOU’ (Sayel and Rahman, 2003, p. 93). Moreover, Prensky (2007) argues that ICT experience may be considered as a vital aspect to investigate in higher education, since students in this era are making massive use of ICT in different aspects of their life, and so students are referred to as ‘Digital natives living in a digital culture, due to their sophisticated knowledge shaping their positive attitude, However the students’ experience is influenced differently in relation to EOU and PU in ICT for use in learning’ (Taylor and Todd, 1995, cited in Ignatuis and Aafagi, 2005, p. 146). Furthermore, young students who have finished secondary school and joined university life make extensive use of technology in their classes, and this experience is regarded as one of the justifications for a positive attitude towards technology in their future education (Pittard et al., 2003; Bannister and Dunn, 2010; Kubiatko, 2010). However, the experience students have gained from their prior education may vary and change according to the new ICT tools introduced to them in higher education, since they probably did not experience them in their earlier education and they lack of skills and confidence in using them may change their attitude towards ICT.

Another factor considers vital to explore in Higher education because of its influence on students attitude and use of ICT and this is the support that students receive in universities (Selwyn, 2008). According to Alkharang and Ghinea (2013) the lack of IT management awareness and support in Kuwait higher education institutions consider barrier to the utilisation of e-learning in these institutions, ‘the strategy of the management in organisation [universities] was not in line with the intention to build an e-learning culture’ (Alkharang and Ghinea, 2013, p.4). Moreover,
it was revealed that the IT specialists and management will not support the e-learning project unless they become aware of the benefits it offers and the advantages of e-learning. Accordingly it could be argued that the IT support in KHEIs considers one of the main and serious barriers to the application and utilisation of ICT in HEIs in Kuwait, which needs a rapid solution to avoid the failure of ICT application project. Also, Fu (2013) pointed to the importance of external factors that influence students attitude towards, and use of ICT in their learning, Fu argued that technology availability and the ICT support which students get from their universities are important factors to technology integration and use of ICT in higher education learning, he also stated that the higher structure of ICT support and ICT availability, the higher integration of ICT is made by students.

Moreover, there are several aspects of ICT support provided for students in university learning, for example the support students get from their tutors in the form of encouragement for using ICT inside or outside the classroom. According to Concannon, Flynn and Campbell (2005), the tutors’ support and encouragement, as well as support from peers are considered as motivating factors for positive student attitudes towards and use of ICT at HEIs. Besides, supporting students in using ICT tools should be available during their learning courses to offer sense of confident to students in using them, as well as it is the university role to provide greater immediate support for students to assist their constant use of ICT (Kleinman and Entin, 2002). many studies were and still to date conducts in various universities in order to investigate the extent of ICT support students gain at their universities, as well as if ICT support factor found to have an influence on students attitude towards using ICT for learning, for example (Ngai et al., 2007; Alenezi et al., 2011) since the support that university provides to students varies from university to another. Furthermore, most of studies revealed the fact that ICT support considered one of the most vital factors that have a strong influence on students’ attitude towards ICT for
learning. The following section will present research concerning factors that influence students’ attitudes towards ICT, applied in three contexts: firstly, internationally; secondly, in the Middle East; and finally, in Kuwait City.

### 2.19 International ICT research

In the UK, Stephens and Creaser (2002) investigated factors impact the attitude of IT students towards using computers at Loughborough University. A questionnaire was distributed to a sample of 298 students. Gender factor was investigated in relation to students’ attitudes to using computers. The findings of the study indicate a positive attitude towards using computers amongst male participants, compared with the more negative female attitude. On the other hand, Haywood et al. (2004) have aimed to investigate undergraduate attitudes towards using ICT. The authors surveyed 600 students from the University of Edinburgh. The consequent study findings pointed with no significant differences in gender.

Dourb (2004) has also investigated students’ attitudes towards using ICT. A sample of 1159 students from medical schools in Denmark was surveyed. The findings of the study indicate a more positive male attitude towards using ICT, compared with the female participants. In the same context, a study was carried out by Chen, Wu & Chou (2011), the authors aimed to investigate students’ attitude towards ICT and Factors that influence their attitude. The finding of study showed that male students have more positive attitudes than females.

(Teo, 2008) aimed to investigate factors that influence students’ attitudes towards ICT in Singapore. Accordingly, a Likert scale questionnaire was distributed to a sample of 139 students in order to find the influence of ICT experience and academic discipline on students’ attitudes. Findings from the study revealed that ICT experience and academic discipline factors have a
strong influence on students’ attitudes towards ICT. Teo concluded that ICT experience and discipline are considered as a key driver in students’ attitudes and the use of ICT in learning. The study suggested future studies to investigate more factors in relation to student attitude. In the same context, a study was carried out in Pakistan by Mahmood (2009). The study aimed to investigate factors that impact student attitude using ICT in their learning. The sample consisted of a total of 625 students from different disciplines, the findings revealing that academic discipline has a great impact on students’ attitudes towards ICT use. The science students were found to have a more positive attitude, compared to the arts and humanities students.

Furthermore, a study was carried out at the Open University in UK, where authors investigated factors that influence Chinese and British students’ attitudes towards ICT. The findings of the study showed that the English language was considered as an important factor influencing students’ attitudes. The Chinese students mentioned that they did not enjoy using ICT because it contained too many English language materials and their English language skills were too poor to be able to understand these learning materials. Moreover, gender was found to have a big influence on students’ (English-Chinese) attitudes towards ICT. English and Chinese male students were found to have a more positive attitude than did females at the same university (Kirkup and Li, 2007).

In the US Cheng et al. (2011) examined the perceptions of 805 students at a research university concerning ICT tools use in learning. The authors used surveys to gain data from students. Findings from the study revealed that male students had a more positive perception of using the ICT in learning, compared with female students. Another study in the US conducted by Fleming (2005) investigated factors affecting undergraduate attitudes towards the use of technology. For this, questionnaires were distributed to a total of 372 students in their 1st year so as to collect
data relating to the aims of the study. Data was gathered and analysed to reveal that factors such as ICT experience was found to affect students’ attitudes. However, no significant difference was found for gender.

Kubiatko (2010), focused on students’ attitudes towards using ICT at a Czech university. A questionnaire was distributed to a total sample of 316 pre-service teachers from Science disciplines. Findings of the study showed a positive attitude amongst male students comparing to females. Moreover, another finding exposed that students with high level of ICT experience have stronger attitude towards using ICT in learning. However, Kubiatko related this positive attitude to ICT, as students had substantial ICT knowledge and experience, and technically more competent than female. In the same context, the factor of experience was examined in relation to students’ attitudes towards ICT in Brunei. The TAM model was considered as a basic theory for the study. Therefore, a total of 422 students were randomly surveyed and only 266 questionnaires were received. The results of the study revealed that ICT experience is significantly linked to PU, but were not significant for PEOU (Sayel and Rahman, 2003).

Erdogan et al. (2008) conducted a study at Bilgi University in Turkey, with a total of 127 students from several departments who were surveyed to discover the factors influencing their attitude towards ICT. The study revealed that students in the Science disciplines had fewer negative attitudes towards using ICT, compared with those from other disciplines. On the other hand, gender was found to influence undergraduate attitudes towards using ICT in learning, with respect to female students noted as having a higher rate of negativity than their male counterparts. Some parallels to these findings emerged from another study conducted in Pakistan that demonstrated greater negativity in female attitudes to the use of ICT in education, in comparison with male students.
Another study in Hong Kong was carried out by Ngai et al. (2007). The authors were interested in investigating factors that impact students’ attitudes towards using ICT in their learning. Therefore, the TAM theory was used and extended as a basis for investigating technical support as external factor affecting students’ attitude. The finding revealed that technical support was found to strongly affect students’ attitudes towards using ICT, through the two factors of TAM, the EOU and U. Furthermore, Sanchez and Hueros (2010) aimed to investigate the motivational factors that influence students’ acceptance of ICT in learning. The TAM model was considered as the basis of the study. Therefore, a total of 260 students were surveyed to investigate the influence of factors such as PEOU, PU and technical support on their attitude towards ICT. The findings of the study revealed that the technical support factor had a positive influence on the PEOU and PU of ICT. However, insignificant effects were found between the technical support factor and students’ attitudes towards ICT. The same finding was approved in a study carried out in the University of Limerick to investigate the impact of ICT support to students attitude at the university, the qualitative data results showed that students attitude were influenced positively by the support provided by their tutors and peers encouragement, the data was gathered from focused groups of students, who clarified during interviews that the less support they receive the more stress and inconvenient they were, and this feelings impact their attitude in a negative way (Concannon, Flynn & Campbell, 2005).

Cheng (2011) aimed to investigate the ICT experience factor and students attitude in Taiwan University. A total of 296 students were involved in filling in online and paper questionnaires. The findings of this study indicated that the lack of ICT experience have a negative influence on students attitude. In China, Hu and McGrath (2011) explored the implementation of ICT in higher education and perceptions of its use. Their study supported the fact that a lack of ICT experience tended to negatively affect undergraduate perceptions of ICT use.
2.20 ICT research in the Gulf region and Kuwait

According to United Nations Educational Science and Cultural Organization (2011), higher education needs in the Arab states are served by the United Nations Educational Science and Cultural Organization (UNESCO) in order to promote opportunities for better education. Moreover, ICT is to be promoted in education for better learning and teaching. In addition, the UNESCO global network offices continue to priorities the provision of partner countries with higher education ICT policies and activities.

A lack of research in the area of ICT in higher education was revealed in the Gulf region, compared with the international sphere. Moreover, ‘Researchers tend to use different terms when referring to the use of ICT in higher Education’ (Kian-Sam and Songan, 2011, pp. 1282), as well as many research have used different terms for ICT, such as e-learning, educational technologies, digital learning objects, communication technologies, web-based learning and hybrid or blended learning (Kian-Sam and Songan, 2011). The same seems to be found in the Gulf, where the term ICT is rarely used in most of research related to ICT in Education, and This may be due to the fact that ICT considers a new concept in the Arab region, and specifically in Gulf countries, whereas globally, Information Technology (IT), E-learning, blended learning are already widely known and used in research, but the concept of ICT is almost unfamiliar and infrequently used.

On the other hand a fair amount of research is now being conducted in the area of ICT, such as on E-learning and blended learning in basic Kuwaiti education. This is for the purpose of exploring the impact of ICT on student achievement. For example, a number of studies have been completed in KHEIs in the area of ICT (Khulom and Ahmed, 2011). This could be inspired by the lack of specialist awareness in the area of ICT. Consequently, ICT in education seems to
be subject to a slow evolution According to Buarki (2010) the term of ICT have not used in KHEIs, and students were found unfamiliar of the ICT term in their university education. In the coming part a good amount of research’s concerning factors that impact student’s attitude towards using ICT in universities at the gulf and Kuwait will be viewed.

A study carried out by Shehab (2007) at the Arab Open University probed into undergraduate perceptions of blended learning. Hence, factors such as gender and experience in the use of the Internet were investigated amongst 779 students in relation to their attitude. The findings revealed that undergraduate perceptions were positive in terms of the use of blended learning with no gender effect. The use and experience of the Internet was found to positively affect students’ perception. The same finding with respect to gender was presented by Al-Musawi and Abdul-Raheem (2005), who investigated students’ attitudes towards using blended learning at Sultan Qaboos University.

In Saudi Arabia, a study was conducted by Alenezi et al. (2011), the aim of which was to investigate factors that influence students towards using ICT. TAM was used as a framework for this purpose since the study investigated factors which mediated the relationship between attitudes and external factors. However, findings from the study revealed that ICT support was significantly influence students’ attitude and use towards the use of ICT in their learning.

Al-Doub, Goodwen and Al-Henaiyyan (2008) have looked at factors that influence students’ attitudes towards the use of E-learning at Kuwaiti HEIs. A questionnaire was distributed to a total of 231 students from the business sector at both public and private universities. Findings from this study revealed that students at private universities were more positively towards using E-learning than those in government funded institutions. Another finding revealed that female students in both sectors had more negative attitudes towards the application of E-learning,
compared with their male counterparts. Hence, the authors refer this finding to cultural differences between private and state universities.

In focusing on pre-service teachers’ attitudes towards the use of E-learning on their courses, other research demonstrates that variables, such as gender, academic specialisation and experience were investigated in relation to undergraduate attitudes. Therefore, a questionnaire was distributed to a sample consisting of 230 students in order to fulfil the study aims. Findings revealed that the overall attitude of students towards using E-learning was positive with no gender differences. In addition, there were no significant differences in attitude in terms of: gender, academic specialization. However, a significant difference was found in attitudes relating to experience in computer use. Consequently, promoting students’ physical and moral approaches to E-learning was recommended, as well as the broader use of E-learning on their courses (Meerza, 2008).

In KHEIs, the Arab Open University is classed as a private institution. A study by Al-Fadli (2009) investigated factors that influence students towards using ICT at KHEIs. The author distributed a questionnaire to a total of 350 students from different programmes, in order to meet the research aims. Consequently, finding indicated that lack of technical support discovered to negatively influence students’ attitudes towards using ICT. However, no significant relationship was found to exist between gender and students’ attitudes regarding its application. The study recommended providing students with early ICT experience in order to ensure success in their future experience in ICT.

Alkhashab (2007) concentrates specifically on the attitudes of Kuwaiti society at HEIs towards the use of E-learning and factors impact their use in learning. Alkhashab therefore surveyed a total of 276 students from different universities and departments in order to examine their
perceptions. Data from the study revealed with no significant relationship was found between undergraduate attitudes with respect to gender.

Another study in Kuwait has been conducted to investigate the attitudes of students towards using ICT in learning. Buarki (2010) explored the views of students from the department of Library Information System (LIS) within public HEIs. The sample of study consists of 284 students from the 1st and 4th level year. The knowledge of English language factor was investigated in relation to undergraduate attitudes. Accordingly, the author used mixed methodologies, such as surveys, interviews and focused groups to collect data from students. Quantitative Data analyses indicated that undergraduate attitudes towards using ICT were negatively influenced by factors such as English language skills. Qualitative findings collected from interviews with students have supported quantitative results, as one female undergraduate stated: *I think we need to do an advanced computer course as well as an English course and then we might be prepared* (Buarki, 2010, pp. 200-204), and within the same study, another female commented: *English terms should be taught as a compulsory course because if your English is bad you cannot search or even use the computer* (Buarki, 2010: 200-204). A male undergraduate confirmed the lack of English courses and added: *English language should be taught intensively and as a skill* (Buarki, 2010: 200-204).

### 2.2.1 The relation between Students’ attitudes and ICT usage

Engagement with ICT is considered as one of the most important issues to be discussed since the acceleration of innovation in technology, specifically in the area of education, where higher education institutions are regularly provided with a variety of ICT to be used in the daily learning and teaching. But unfortunately, at the same time a lack of investigation of ICT engagement was applied in the area of education comparing to other areas (Ongori and Mburu, 2010). However, the most significant purpose of any educational application of ICT is to
actively engage learners with ICT tools (Kirkwood and Price, 2005) and to achieve the aim of integrating ICT in education. McInnis (2001) confirmed that students’ disengagement and apparent lack of commitment presents itself as a problem on a daily basis, in the academic context. He claims there are new types of engagement and disengagement which are emerging in many institutions, and the environments have not yet adapted to these phenomena. McInnis argues that the nature of student engagement is constantly changing due to the way student motivation, principles and attitude change. McInnis therefore suggests there is a need for parallel and on-going adaptation of knowledge with regard to students ICT engagement, in order to provide appropriate and timely solutions to prevent any risks to students learning.

Concerning HEIs and undergraduate engagement with ICT, research points to the non-engagement of students with the ICT, influenced by their attitude through its usefulness, and ease of use, in combination with their general preconceptions of ICT (Cheng and Huang, 2005; Joiner et al., 2005). In another published paper for Selwyn (2003), the author clarified that despite the many attempts to locate ICT as an essential tenet of university education; students have been found to make only limited academic engagement with ICT in their learning. Furthermore, there is erratic, inconsistent and variable use of ICT across different courses. Hence, the variant for ICT use at different universities is considered to be critical issues that must be properly investigated; an investigation of undergraduate use or engagement with ICT is certainly required at KHEIs in this level.

According to Sutherland et al. (2009), research suggests that young people have a high level of engagement as well as positive attitudes to learning when technologies are available. Authors also highlight attitude as an important element, as it is required when students meet to engage
with ICT in learning. What is more, the authors believe that there is a need to focus on attitudes element which impact student usage of ICT. The same issue was discussed by Selwyn (2009), who stated that students’ engagement with ICT in HE learning is in constant change, and this change depends on students’ attitude towards ICT, which is also strongly effected by various factors and ICT tools available at the HEIs.

Rhema and Miliszewska (2010) and Lenhart, Madden and Hitlin (2005) argued that students’ engagement with learning activities is completely different now from what it used to be before the adoption of ICT in education. Learning activities become more interesting and enjoyable with technology features, for example the sound effects available through ICT as well as various images and electronic learning materials have motivated students’ learning and achievement. Moreover, the authors explain how students used to communicate with their tutors and classmates using traditional means of communication, such as meeting face to face or communicating through their mobiles, which cost them lots of time and effort, but with the adoption of ICT in education, and the utilisation of various tools, such as VLEs, the Internet, emails, etc. Students realised the importance of ICT tools in making learning more flexible and easy.

However, reports show that students’ low engagement with ICT is an evidence of serious problem in HEIs (Sheard, Cabone and Hurst, 2010). Students’ antipathy towards ICT in learning should be considered from the students’ perspective, since students’ ICT usage changes with the appearance of new ICT tools utilised in their institutions. Therefore, if we ignore students’ attitudes and their engagement with ICT in their learning at HEIs, pedagogy will be at risk of not fulfilling the aims of these institutions (McInnis, 2001). Besides, the main aim of any project concerning the application and engagement of ICT in higher education must combine
questions that reveal the classification of ICT engagement amongst students at their learning institutions (Selwyn, 2009).

Hence, understanding the relationship between HE students’ attitudes and their usage level of ICT, as well as the ICT engagement in their learning, is considered as a very important issue to investigate, since very few studies have revealed the relationship between students’ attitudes and engagement with ICT, for example, Ngai, Poon and Chan, 2007; Hueros and Sanchez (2010), and Donthu and Porter (2006). In addition, there are no studies which reveal the relationship between students’ attitudes and ICT use in KHEIs. The following section will present studies on the relationship between students’ attitudes towards ICT, and their ICT usage in HEIs learning, followed by studies regarding students’ ICT usage in learning at HEIs.

Ngai, Poon and Chan (2007) have aimed to investigate students’ attitudes towards ICT and its relationship with students’ engagement. Therefore, a five Likert scale questionnaire was distributed to a total of 1400 students in seven universities in Hong Kong. The data from the findings exposed a weak relationship between students’ attitudes towards ICT and students’ ICT use for learning. Hence, the authors concluded that students’ attitudes towards ICT may not generate an increase in students’ use of ICT, if students were not being encouraged by the tutors to use it. Moreover, Vojt, Littlejohn and Margaryan (2011) conducted their study in the UK, aiming to investigate the extent and nature of university students’ use of digital technologies for learning and socialising. Accordingly, questionnaires and interviews were used to gather data from students. The findings reveal that students’ level of attitude towards using ICT did not correlate with their ICT usage, and students were mostly influenced by tutors teaching approaches, favouring traditional pedagogies with a minor role of ICT for content delivery.
Furthermore, in one study carried out in Spain by Hueros and Sanchez (2010), the relationship between students’ attitudes towards ICT and their ICT usage was investigated. Therefore, a survey was conducted on a total of 226 students at the University of Heulva. Accordingly, the findings exposed a positive and significant relationship between students’ attitudes and their ICT usage in learning. In the same context, Donthu and Porter (2006) conducted a study in the US which aimed to investigate the relationship between students’ attitudes, and ICT usage through the application of TAM as a framework for the study. Accordingly, questionnaires were distributed to a total of 539 students and gathered later. The findings revealed that students’ attitudes to ICT were significantly and positively correlated with their use of ICT in learning. Therefore, TAM was strongly recommended by the authors in further research.

Furthermore, a study conducted by Porter and Donthu (2006) in the US used the TAM framework to investigate the relationship between students’ attitudes and the use of ICT. Therefore, a questionnaire was administered to a convenience sample of students at a US university. The findings revealed that students’ attitudes towards ICT were significantly and positively correlated with their ICT usage in their learning. The same findings applied to a study by Sumak et al. (2011). This study aimed to test several hypotheses and one of them concerned students’ attitudes towards ICT, which referred to a positive effect on students’ actual use of ICT. Hence, the data gathered from a total of 235 students revealed that students’ actual use of ICT was positively affected by students’ attitudes towards ICT.

2.22 Students’ engagement with ICT tools

Mahmood (2009) aimed to investigate the extent of university students’ use of ICT in the University of the Punjab. Therefore, 625 students from different disciplines were surveyed for the purpose of the study. The study findings exposed the fact that 81% of the sample was using
Microsoft Office Word in their daily learning. Microsoft Office Word is considered as one of the top three ICT tools used in students’ learning in the Punjab. The same was found to be true in a study by Link and Marz (2006). This study aimed to examine patterns of ICT usage by medical students at the University of Vienna. Therefore, online questionnaires were distributed to a total of 1232 students and only 1160 were completed. The data analysis showed that 82% of students were using word processors for their learning, and so these were considered as one of the top three most used tools in students’ learning.

Margaryan, Littlejohn and Vojt (2011) aimed to investigate the extent of ICT use by students in Glasgow University in the UK. Therefore, a sample of 260 students from sciences and humanities were surveyed towards this aim. The findings of the study revealed that, despite a variety of ICT tools being offered to students, the most used was the Internet as the main learning tool. Moreover, mobile technology was also used frequently by students to communicate with their peers for learning purposes. However, video conferencing was not used so often in students’ learning. Another study was carried out at Nebraska University in the USA, the aim being to analyse the pattern of ICT usage in student learning. Therefore, a total of 200 questionnaires were distributed and only 164 were returned. The findings of the study revealed that a significant number of students used the Internet daily and mostly for learning purposes. However, a lack of IT support and the slow speed of the Internet was the main problem when using ICT (Ahmad Khan, Bhatti and Ahmad Khan, 2011).

In the same context, a study was conducted by Gunay and Kaya (2011) which planned to determine students’ access to ICT in Karsbuk University in Turkey. 1050 questionnaires were distributed to students from different disciplines, and only 931 were returned. Accordingly, the
findings of the data analyses showed that the Internet was the ICT tool most often used in students’ daily learning.

Furthermore, Nagler and Ebner (2009) conducted a study in Australia. A questionnaire was distributed to a total of 821 students in order to examine their daily use of ICT tools in their university learning. Accordingly, the findings of the study showed that the most used ICT tools in learning were the laptop and mobile technologies. Mobile technology was used because of its social networking applications, which students favoured for learning purposes. The authors concluded that ‘the so-called Net Generation exist if we think in terms of basic communication tools like e-mail or instant messaging. Writing an email, participating in different chat rooms or contributing to a discussion forum is a part of a student’s everyday life’ (Nagler and Ebner, 2009, p. 7).

2.23 Summary

According to the previous literature, a gap was found in the literature of ICT in the state of Kuwait, whereas Western literature on this point was found to be rich and varied. This could be because ICT is considered as a new specialization in Kuwait, and so there is a lack of research in this area, and a consequent need to fill the gap with a new study of critical value.

The current study aims to investigate the attitudes of students towards ICT in learning, as well as the relation between their attitude and ICT usage. Moreover, the study aims to identify the factors that influence students’ attitudes towards the use of ICT at their HEIs. Since looking back at the literature on ICT in KHEIs and students attitudes, many important factors were found to have been excluded and so remained unexplored in HEI in Kuwait such as type of university, gender, academic disciplines, learning language, ICT experience, and ICT support.
The idea behind this investigation is linked to the belief that there is a strong relationship between students’ attitudes and their ICT usage in various institutions; ‘ICT is often seen by students as being a basic, but not ultimately essential tool’ (Selwyn, 2007). This is especially notable following the establishment of several private universities, as opposed to just one public university, both types using ICT in their learning systems. However, there has only been one study (Al-Doub et al., 2008) which has investigated the use of ICT at KHEIs private and public. However, no studies in KHEIs have investigated students ICT usage in learning, although the state of Kuwait considers one of the first Arab countries in employing ICT at their education institutions.

Accordingly, there is a critical need for deep and broad research in this area in the state of Kuwait, to fill the gap in the literature as well as to explore factors that not been investigated in previous literature in Kuwait. Therefore, the current study consider important and critical as it will reveal important findings about students attitude towards, and usage of ICT at KHEIs, as well as exploring the factors that influence their attitude towards using ICT at private and public universities. Accordingly, the current study will concern the MOE and MoHE, as well as the HEIs in reconsidering their ICT plans and strategies and curriculums in ICT. Beside this study will concern educators to follow students’ engagement with ICT. Moreover, this study considered TAM theory the main and basic theory that fit its aims and objectives, ‘the choice of models for any particular piece of research obviously depends on the purpose and degree of granularity of the study’, (McDougall et al., 2010. p. 21).
Chapter Three: Research Methodology

3.1 Introduction

This chapter describes how the research was carried out at KHEIs by discussing the study methodology, as well as the methods and techniques used for collecting realistic and valid data. The methodology used in this research is known as the ‘Mixed Method’ (MM), where more than one method is used for collecting data from the study sample. MM will be defined and explained in the next section of this chapter. Questionnaires and interviews were used as research techniques and so data was gathered in significant quantities from the sample. These mixed techniques helped to obtain reliable and deep data for suitable results. This chapter will present further information about the study sample, the pilot study and research ethics.

3.2 Research Design

The research design refers to the framework suitable for the research, depending on its nature or the problems involved. The research design should support and strengthen the research activities and actions (Walliman, 2006), as well as presenting the structure of the methods of collecting and analysing the research data (Davis and Sutton, 2004), in order to fulfil the study aims. Ultimately, the aims of any research are considered as an essential part of the process, as they attempt to meet the objectives and correspond to the questions posed by the study. The current research aims to investigate the attitudes of students towards ICT, and their engagement, as well as identifying critical factors that influence their attitude towards the use of ICT in their respective universities. Therefore, different methods were used in this case to be able to collect a great deal of data related to the aims of the study. Consequently, the MM approach was used as a framework for the design of this research.
3.3 Research method

The research method is viewed as the overall approach used to collect the data needed, in order to respond to the research questions and thus achieve their aims. Basically, the method used in the research will differ from one study to another, depending on the type of research. For example, science research will introduce scientific experiments to reveal the results which need to be analysed. On the other hand, other methods, such as surveys, case studies, observations, and interviews are also used for scientific or social research. However, when the research involves joining more than one type of method, it is then called MM and this method is widely used today in social research (Teddlie and Tashakkori, 2009; Maxwell and Loomis, 2003). This current research will apply MM for data collection.

Research methods are also classified in terms of the philosophy underpinning the data collection, e.g. whether interpretive or positivist. These methods must be identified by the researcher, who will be able to determine which approach best fits his or her research for the purposes of data collection. Therefore, each research method relies on its epistemological position; epistemology being ‘how we know things and what we regard as acceptable knowledge’ (Walliman, 2006, p.15). Hence, the interpretive approach tends to use qualitative methods for data collection, whereas the positivist relies more on quantitative methods (Beynon-Davies, 2002).

In addition, interpretive approaches focus on the social reality and human aspects of the research, in order to better understand internalised beliefs and generate appropriate facts to explain individual behaviour (Cohen et al., 2000). Alternatively, the positivist approach would suggest looking to ‘society as the focus of research, and through understanding its internal law and establishing relevant facts, we can in turn understand how and why individuals behave as they do’ (Williman, 2006, p. 23). Further to the positivist approach, quantitative methods are
used to collect data from individuals, thus being in a position to draw general conclusions (Saunders, Lewis and Thornhill, 2007).

Both positivism and interpretive refer to appropriate approaches for use in this research, since the current research uses both quantitative and qualitative methods for data collection. Furthermore, Davies (2009) argues that organisations may be considered as being part of the social world, with ICT systems constituting part of the physical world. For this reason, the positivist approach in this research will explain students’ physical world and their engagement with ICT at KHEIs, whilst the interpretive approach will attempt to fathom the social aspect of the respective students’ learning. This is therefore why it was decided to use MM for the current investigation, where both qualitative and quantitative approaches are joined for a blend of data which will help understand the problem, rather than using a single approach (Creswell and Clark Plano, 2011).

3.3.1 The quantitative research method

The quantitative research method is a scientific approach to conducting a study and therefore will contain either experiments or other systematic methods to highlight control samples and calculate measurements of individual actions (Hoy, 2010). Quantitative research typically describes the world using variables, as well as predicting aspects of the world by revealing the relationship between variables. Quantitative research applies quantitative strategies for collecting and analysing collected data. Furthermore, quantitative data are collected with closed questions or statements, which are created to address research questions concerning attitude, behaviour, or performance in human social groups (Gray, 2009).
The data collected using the quantitative method are considered as being reliable and not prone to error, if the instrument is correctly designed, and although quantitative researchers may be concerned with their respondents’ attitudes and performance, they do not get directly involved with them, as this could change the objectivity of the researcher (Bryman, 2004). In quantitative research, the researcher’s goals are put together in the research objectives, looking to see how data collected from respondents fits the theory used in the research. The data gathered will then either support or disprove the theory.

Furthermore, theory in quantitative research is composed of questions that are established on the basis of the research variables. The quantitative researcher in turn tests these questions by using a quantitative method, to reveal if the theory supports or disproves the research and the variables which need to be tested. In quantitative research, the literature review helps to frame the essential research aims and problems, as well as their significance; it is also used to specify research questions which have not been addressed in earlier literature. Consequently, researchers who engage in quantitative research use open-ended questions to gain answers from respondents, by means of questionnaires, and in this case, researchers keep themselves emotionally and physically distant from participants (Gray, 2009).

Quantitative data gathered using quantitative methods are applied statistically via statistical software, which will help the researcher to identify the relationship between variables tested in the study. Researchers in any quantitative research typically find relationships and connections between variables using large scales, and engage their ideas and concepts in the technique being used to gather quantitative data from respondents (Bryman, 2004). In this study, the quantitative method will be applied for data collection, in order to collect data about the relationships between those variables which need to be investigated and thus, address the study questions.
3.3.2 The qualitative research method

Qualitative research is characterised by the collection and analysis of data using words. Qualitative research relies on the data gathered from participants via qualitative methods, such as interviews, observation, case studies and focus groups. In studies which apply qualitative methods, the researcher uses data in the form of words gathered from participants, thus adding more depth, since more detail and explanation can be gained concerning participants’ points of view and behaviour through the direct involvement between the participants and researcher (Bryman, 2004).

Furthermore, qualitative research involves fieldwork where the researcher meets the participants physically after the arrangement and preparation of appointments with individuals. The role of the researcher in the application of qualitative methods is to observe and record interviewees’ words and behaviour, and therefore this type of research is considered as descriptive; the researcher will depend on the process and meanings of the words gathered. Besides, in qualitative research, the researcher himself is considered as the primary instrument of data collection and analysis, since the physical presence of the researcher is necessary for data collection. In addition, the researcher needs to focus on a single phenomenon when interviewing participants, and understand it in depth in order to gain the data required for the research (Creswell and Plano Clark, 2007). Interview questions should be prepared in advance and formed in a way in which participants will feel free to answer and express their feelings about a particular problem (Creswell, 1994). However, some criticism has been levelled at qualitative research in terms of its alleged unscientific and anecdotal nature, based on the researcher’s subjective impressions. Besides, in qualitative research, the researcher may be confined to a specific context that lacks generalisability (Gray, 2009, p. 189).
**3.3.3 Mix methods (MM)**

According to Creswell and Plano Clark (2011) mixed methods (MM) have found their roots over the last 20 years in different research disciplines, but during the past 10 years, major attention has been given to this method, specifically in the area of humanities and social sciences. Creswell and Plano Clark (2007, p. 5) have defined MM, taking into consideration both methods and the slant of the philosophy, stating that:

> Mixed methods research is a research design with philosophical assumptions as well as methods of inquiry. As a methodology, it involves philosophical assumptions that guide the direction of the collection and analysis and the mixture of Qualitative and Quantitative approaches in many phases of the research process. As a method, it focuses on collecting, analysing, and mixing both Quantitative and Qualitative data in a single study or series of studies. Its central premise is that the use of Quantitative and Qualitative approaches, in combination, provides a better understanding of research problems than either approach alone.

Mixed methods have also been defined as a:

> Type of research in which a researcher or team of researchers combines elements of Qualitative and Quantitative research approaches (e.g., use of Qualitative and Quantitative viewpoints, data collection, analysis, inferences techniques) for the purposes of breadth and depth of understanding and corroboration. (Johnson, Onwuegbuzie and Turner, 2007, p. 123)

Referring to previous definitions of MM, it is remarkable that this is a methodology which is even used in research, aiming as it does to collect data using both quantitative and qualitative approaches, for the purpose of collecting as much data as possible for a better understanding of problems or phenomena (Creswell, 2005). According to Teddlie and Tashakkori (2009), throughout the past 20 years, MM research has attracted less attention than qualitative or quantitative research, as it appears to lead in a different direction, since it applies multiple methodological tools to address research questions. The authors further report the fact that MM is considered as the most common methodology implemented by behavioural and social scientists during the 21\textsuperscript{st} century.
Generally speaking, MM is used broadly in research that aims to gain enough data to explain an entire problem or phenomenon. This is because a single method of gaining data may be insufficient. Creswell and Plano Clark (2011) attribute the use of MM in research to the fact that the qualitative method provides the researcher with detailed data for a better understanding of a problem. At the same time, using the quantitative method presents general data for an overall understanding of the problem, and consequently, the data gained from the first method is detailed, but might not explain the problem in general terms. Therefore, using a second method is required to gain a more specific understanding of this general problem, and vice versa. Furthermore, the importance of MM in any research refers to an explanation of the initial results of research. These results may not always be easy to understand and hence, a second source of findings is required to qualify and complement the initial results: ‘Qualitative results require an explanation as to what they mean [and] Quantitative results can net general explanations for the relationships among variables’ (Creswell and Plano Clark, 2011, pp. 8-9).

3.4 Advantages of using MM

”Mixed methods research provides strengths that offset the weaknesses of both Quantitative and Qualitative research” (Creswell and Plano Clark, 2011, p. 12), but if qualitative and quantitative methods are applied singly in any research, disadvantages or weaknesses may emerge (Johnson, Onwuegbuzie and Turner, 2009). For instance, if the quantitative method is used singly in any research, the data gained from respondents could be evaluated as weak and lacking in detail. The reason for this lies in the nature of quantitative methods, which generate figures to be used statistically so that limited answers are produced, rather than listening to participants’ own detailed, verbal explanations and descriptions.
Further to this, in quantitative research, the researcher does not become directly involved with participants, and so their analysis of the problem or phenomenon under investigation could be discussed in more general terms. In this situation, the importance of using the qualitative method is strongly recommended to build a picture from the participants’ words, for example, as a result of face-to-face interviews, where facial expressions can be observed and where detailed speeches can be analysed for a deeper understand of the views expressed. Therefore, in MM research, the researcher feels free to combine more than one method of data collection, which will consequently define this type of research as practical (Creswell and Plano Clark, 2011).

3.5 Research techniques

Research techniques are the means used by researchers to collect, analyse and represent research data. Questionnaires and interview methods are applied here to collect data from the sample and this combination of different techniques will help build a clearer picture of the phenomenon or problem under investigation, as well as providing the researcher with a more meaningful and less superficial result, and inspiring greater confidence in the findings. Since this research aims to achieve specific aims and objectives, both quantitative and qualitative methods are used, involving questionnaires and interview techniques to collect data from the sample (Davies, 2002).

3.6 Questionnaire

Questionnaires are a means of collecting quantitative data from the study sample. The questionnaire is considered as a quick and easy method, which can help the researcher obtain a better collection of data. They may be delivered electronically or by e-mail, or else handed out by the researcher and collected when completed by participants; this is generally what is meant by self-completed questionnaires (Bryman, 2004). Moreover, the questionnaire has been defined
by Acharya (2010, p. 2) as ‘A document containing questions and other types of items designed to solicit information appropriate to analysis’. In a questionnaire, the members of a chosen sample may be asked some questions about their daily lives so that their answers can form a conclusion in order to help draw out the main results of any research. Moreover, the questionnaire must be constructed on the study variables, with the researchers having to determine the main objectives of their research in order to create an appropriate and precise questionnaire, as well as obtaining accurate answers. It is worth mentioning that the research can benefit from previous questionnaires relating to the same topic (Acharya, 2010).

However, there are two main types of questionnaire; namely, structured and unstructured questionnaires. Structured questionnaires can be defined as questionnaires which include pre-coded questions with well-known patterns that are used to pursue successive questions. This type of questionnaire is widely used in social science research for many reasons. Firstly, it is considered as an easy way to collect accurate data. Additionally, it contains fewer differences in its questions than other questionnaires. Finally, the data received from structured questionnaires are easier to manage (Eiselen and Tina, 2005). Unstructured questionnaires, however, are open-ended in their statements. This type of questionnaire gives respondents freedom to answer and write their thoughts once they have understood the question. Participants will therefore express themselves and write spontaneously, and this may be used to consider a bias for testing a new hypothesis. On the other hand, the answers to this type of questionnaire can be difficult to analyse (Oppenheim, 2000, p. 113).

There are many advantages that motivate researchers to adopt questionnaires within their research. It has been mentioned that this use of questionnaires provides more accuracy and certainty than interviews, because the answers are collected in a standardised way. Furthermore,
the questionnaire is considered as an easy tool which can be used to collect data within a short period of time because it is easy to construct. Moreover, this tool can be used to collect data from a large sample, in order to obtain more accurate data. However, the most distinctive feature of this tool is that it can provide results in a numeric form. This means that it provides more accurate and numeric results that are easy to analyse using certain specialised programmes or software, such as the Statistical Package for Social Sciences (SPSS) that will facilitate the subsequent process of data analysis and present it in numeric form (Milne, 1996).

However, there are many advantages that can be gained from using the questionnaire method, but there are also many disadvantages which become evident when using this tool; questionnaires are completed and returned after the events have occurred and so the participants could forget some details of the information they provide. What is more, open-ended questions in questionnaires can open the door to a huge amount of information that requires a long time to analyse. Finally, the answers have a tendency to be superficial, especially when the questions require time to be answered (Milne, 1996).

In this study, a structured questionnaire was used to obtain quantitative data, in order to permit statistical analysis. This form for the results facilitates the process of providing a deeper understanding of the data obtained. These statistical data are also important in order to be able to compare the study variables. Thus, this tool was used for the respective study in order to obtain valuable and sensitive data from the participants. Moreover, this study applied the questionnaire method because it is easy to construct, distribute and collect. This means that this tool helped the researcher to effectively manage the time and effort needed to collect data. Not least, this tool facilitates the process of collecting data, especially when the sample is very large,
as is the case in this study - estimated at 717 students from two universities, one is the Public university in Kuwait, and the second is a Private university in Kuwait.

3.6.1 Research questionnaire

In order to achieve the goals of this study, the questionnaire used was constructed on the basis of previous ICT literature within the field of education. For example, this study benefited from Davis’s study (1986), while constructing the research proposal, to measure students’ attitudes towards using ICT tools within their learning process and this was achieved by reconstructing certain sentences so that they were suitable for the study aims. In addition, this study benefited from Edmunds, Thorp and Conole’s (2012) study by adapting some of their questions to fit the study objectives. Additionally, this study looked to Ipsos MORI (2008) for the design of the questions relating to students’ engagement with ICT tools within the learning process in higher education. Furthermore, the questions in the Ipsos MORI (2008) study were edited to adapt to the aims of the current study.

The questionnaire was constructed in three main parts: the first relating to demographic variables, namely gender; type of university; academic discipline; year of study; main language of learning; level of English skill; experience in using ICT; sources of learning ICT, such as previous education; ICT modules at university; private lessons; self-directed learning; university ICT support, and the final factor, consisting of sources of support in using ICT, such as tutors, IT department, or family and friends.

The second part was constructed on the basis of TAM variables and the attitudes of students towards using ICT. This part consisted of 20 paragraphs divided into the following two components: The ‘Usefulness of ICT’, and ‘ICT Ease of Use’. The Usefulness of ICT
component consisted of 11 paragraphs that evaluated participants’ perspectives of the usefulness of utilising such ICT tools in their learning process, and were dimensioned from 1-11. On the other hand, the Ease of Use component consisted of 9 statements designed to collect participants’ perspectives of the ease of using ICT tools within their learning process. These were dimensioned from statements 12-20. Therefore, the attitude variable would be evaluated using a 5-point Likert scale, which would give students the choice to provide one answer for each statement from the following alternatives: Strongly Agree, Agree, Neutral, Disagree, and Strongly Disagree (Newbuy, 2010).

The third part of the questionnaire was related to Question Three of the study and considered the relationship between students’ attitudes towards ICT and their engagement with ICT tools in their daily learning. This section consisted of 15 statements to measure students’ engagement with ICT tools used within their learning process. The 15 statements discussed the frequency with which participants in both universities used ICT tools, and they were dimensioned from statements 21-35. In this part, each statement was designed to produce just one response, to be selected from the following alternatives: Every Day, Once a week, Once a Month, Once a term, and Never.

3.6.2 Validity and reliability of questionnaires

According to Fraenkle and Wallen (2006, p. 151) ‘In recent years, validity has been defined as referring to the appropriateness, correctness, meaningfulness and usefulness of the specific inferences researchers make based on the data they collect’. In this study, the validity of the questionnaire was investigated by presenting the questionnaire to professors specialising in Education, Distance learning and Training and Educational Technology, from the Arabian Gulf University in Bahrain and from the Sultan Qaboos University. This procedure was carried out
after the questionnaire was translated from English to Arabic, to determine the suitability of each sentence in the questionnaire to its main component, as well as to check the accuracy of the Arabic language following the translation of the questionnaire. Moreover, the questionnaire in this study was presented to the direct supervisor to be assessed after it was translated into English. This procedure was carried out to assess the validity of the questionnaire involved, since investigating the validity of the instrument used in any research is considered as being very important for gaining the information and data that serve the study aims (Oppenheim, 2000). Furthermore, it is an important step in ensuring that the instrument developed for this thesis to measure a particular concept will indeed accurately measuring the variable (Sekaran, 2003).

On the other hand, reliability is considered as a measurement tool that can support the accuracy of the data analysed; this means that reliability can minimise the level of error in results by repeating the process of data analysis more than once, thus ensuring there are no errors, since the same scores are repeated every time (Golafshani, 2003). According to Vehkalahti (2000, p. 21), reliability is ‘The ratio of the true variance to the total variance is an important property of measurement’. Moreover, Drost (2010) argues that:

Reliability is the extent to which measurements are repeatable when different persons perform the measurements, on different occasions, under different conditions, and with supposedly alternative instruments which measure the same thing. In sum, reliability is consistency of measurement or stability of measurement over a variety of conditions in which basically the same results should be obtained (Drost, 2010, p. 106)

It is important to ensure that the instrument developed in this thesis for the purpose of measuring a particular concept, does indeed accurately measure the variable. The recommended minimum acceptable limit of reliability (alpha) for a questionnaire measure is 0.70 (Nunnally, 1967).
3.6.3 Pilot study

Before the actual study, a pilot study was applied in the public university in Kuwait, where a sample consisting of 26 students received questionnaires which were collected the same day. The data collected from the questionnaire was analysed using SPSS software to inspect Cronbach’s Alpha, which measured the internal consistency of the construct. According to Table (3.1) the results obtained from the students’ questionnaires were divided depending on the study’s variables as follows:

- Usefulness: this variable covered items 1-11, and the Cronbach’s Alpha was 0.901 for this variable. This result revealed that this variable was reliable.
- Ease of Use: this variable covered items 12-20, and the Cronbach’s Alpha was 0.909 for this variable. This result means that this variable was reliable.
- Attitudes towards ICT tools: this variable covered items 1-20, and the Cronbach’s Alpha was 0.941 for this variable. This result revealed that this variable was reliable.
- Engagement with ICT: this variable covered items 21-35, and the Cronbach’s Alpha was 0.839 for this variable. This result revealed that this variable was reliable.

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Number of items</th>
<th>Cronbach’s Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Usefulness</td>
<td>1-11</td>
<td>0.901</td>
</tr>
<tr>
<td>Ease of Use</td>
<td>12-20</td>
<td>0.909</td>
</tr>
<tr>
<td>Attitudes towards ICT tools</td>
<td>1-20</td>
<td>0.941</td>
</tr>
<tr>
<td>Engagement with ICT</td>
<td>21-35</td>
<td>0.839</td>
</tr>
<tr>
<td>All Variables</td>
<td>1-35</td>
<td>0.911</td>
</tr>
</tbody>
</table>

The result obtained from the above students’ questionnaires showed a value of 0.911 for all the items included, which was reasonable, indicating that the tool was consistent for use in the study. This result indicated that all the results of this study were reliable enough to depend on for generating findings, and the final questionnaire was ready to be distributed in public and private
universities (see appendix 1,2), since the recommended minimum acceptable limit of reliability (Alpha) for a questionnaire measure is 0.70 (Nunnally, 1967). Furthermore, the interview was translated from English to Arabic and was piloted on three international students at Cardiff Metropolitan University, whose first language was Arabic. However, the interview in its English version was also piloted on the same students to ensure the transmission and understanding of the language.

3.7 Interviews

Interview methods are considered as qualitative methods to be used to obtain narrative data. Additionally, this type of method permits researchers to obtain the data they require directly from the participants. By using this method, researchers can also ask participants a large number of questions, and then record their answers simply by hand (Phellas, Bloch and Seale, 2011). Moreover, the interview method can be defined as a qualitative method through which the researchers may seek to obtain more description of a certain phenomenon from the respondents. This means that the researchers will ask the respondents some questions that are related to the topic of their research. Next, the respondents will answer these questions from their own perspective, depending on their previous experience and daily activities (Roulston, DeMarrais, and Lewis, 2003).

It is worth mentioning here that there are, by their very nature, many types of interview. For instance, there are face-to-face interviews and telephone interviews and there are even different types of face-to-face interviews, such as semi-structured interviews, in-depth interviews and collective interviews (Nuwbuy, 2010). Face-to-face interviews are considered as a direct means of collecting data that offer many advantages for both researchers and respondents, and these are therefore commonly used for collecting information from people (Kumar, 2011). In all
interviews, the presence of the researcher and their concentration is important for both the
interviewee and the researcher, since researchers will then have the opportunity to explain
complex questions to interviewees. Moreover, researchers benefit from this method because it
gives them the opportunity to manage the time and place of the interview and they can be more
sure that their questions will be answered. As a result, they must arrange appropriate settings in
order to obtain more accurate and detailed answers (Phellas, Bloch and Seale, 2011).

In this study, semi-structured interviews are used to obtain more detailed answers from
participants. A semi-structured interview is an interview that fits in somewhere between the
questionnaire and the developing interview, and it is structured in terms of addressing all the
interview topics. Besides, the semi-structured interview has the characteristic of being able to
control the interviewee’s answers, by adding starter questions and prompting and guiding the
interviewee with follow-up questions. At the beginning of the interview, the researcher asks his
interviewee starter questions and obtains the answers required, but sometimes the interviewee’s
answers provide deep clarification which might stray beyond the brief. The role of the
researcher in such a situation will then be to ask follow-up questions to prompt interviewee

In this study, interviews were used as a means of obtaining more accurate and sensitive data
from the participants. 17 students from the private and the public universities accepted to do the
interview and these students revealed their contact details in the questionnaires, indicating a wish
to be interviewed. Accordingly, and after the questionnaires were collected, the researcher
contacted the students to make interview appointments and to determine the time and location of
the interview. Hence, appointments were organised at the respective university campuses and
during break times, according to the participants’ requests.
The interview questions consisted of 6 main questions, these being prepared and reviewed in advance by the researcher to obtain detailed data relating to the use of ICT in higher education, and to support the results obtained from an analysis of quantitative data. The interviews gave students enough time to illustrate their answers and provide honest answers. In fact, the data obtained from the interview questions supported what had already been obtained from the questionnaires and in turn, produced responses to the study questions, thus helping to achieve its aims. The responses from these interviews were arranged according to theme, based on the study variables (see appendix 3). For this procedure, NVivo software was used to arrange and categorise the data into these themes, in order to calculate and define descriptive and detailed results pertaining to the application of ICT tools within the learning process.

3.8 Data collection

The process of data collection is considered as a major step in performing any social research. This process stands for the procedure by which researchers gather data for specific objectives using various tools and strategies. As a matter of fact, the data collection in this study was conducted in phases. Phase One started in October, 2012 and ended in February, 2013. Phase Two began in February and was completed in March, 2013. Furthermore, the first phase of data collection involved collecting quantitative data from distributed questionnaires, and the second phase consisted of the collection of qualitative data from interviews. Therefore, through these two processes, two main types of data were collected: primary and secondary. However, both sets of data were analysed during the time frame, and the combination of two different types of data helped the researcher to gain more and deeper information with which to address the study questions.
As mentioned earlier, mixed approaches to data collection are widely adopted in social science research. The combination of two main data types (qualitative and quantitative) and the attempt to make them work with each other assist the researcher in obtaining more accurate and detailed results. Furthermore, the integration between qualitative and quantitative data in a study will mostly achieve a deeper understanding and clearer picture of a certain phenomenon. Lastly, there will inevitably be more confidence in the conclusion because the results will have been evidenced using multiple methods (Johnson, Onwuegbuzie and Turner, 2007).

3.8.1 Quantitative data (questionnaires)

The questionnaire method is described as a set of questions and this is a tool which is often used in social science research to gather numeric answers from participants. These answers could be used to describe a certain phenomenon that the participants are able to provide information on. However, there are many other advantages afforded by questionnaires. For example, they can facilitate the data-collection process, especially when the sample is large. They will, nevertheless, yield accurate and detailed records of the data obtained from the participants. It must be emphasised, however, that the questions put to the participants must be consistent with the study hypothesis and questions, in order to obtain the desired results (Malhotra, 2007).

Before the data collection procedure, the researcher obtained an ethical approval and permission letter from Cardiff Metropolitan University in order to be able to implement the questionnaire amongst students at the public and the private university in Kuwait. Later, in September, 2012, the researcher introduced the permission letter to both universities in order to gain their approval for the distribution of the questionnaire and for conducting interviews with students. After a week, the letter was signed and approved by the three faculties in the public university (see appendix 4, 5, 6), while the private university approval was received by the researcher in an e-
mail, 3 weeks later. Following approval from both universities, the researcher undertook the following procedures:

1. Visited the admission and registration departments at both universities to obtain statistics for the number of students, according to discipline, level of study, and lecture times and locations.

2. Visited tutors at the public university and gained permission to distribute questionnaires to students. On the other hand, permission from the tutors at the private university was received via telephone calls from the secretaries of each department.

3. Arranged a visit schedule to the public university classes for questionnaire distribution. However, several tutors at the university asked to be permitted to distribute the questionnaires to students themselves at the end of the lectures, and to contact the researcher when this was done. On the other hand, the private university asked the researcher to deliver the questionnaires to them in sealed envelopes.

4. Began distributing questionnaires to students at the public university on 3 different campuses (Science, Engineering and Administration Sciences were involved), and the procedure for questionnaire distribution and collection in the public university was sustained for approximately 3 months, whilst in the private university questionnaires were received after 6 weeks.

5. On-going data entry process using SPSS software on a daily basis to save time and effort.

Questionnaires were distributed to 1000 students, selected according to their discipline (Administration Sciences, Computer Science and Computer Engineering), and their year of study (second year and final year). The sample was selected due to its range, which made access to each participant difficult. Therefore, the sample was ultimately selected by determining which classes consisted of second-year students (sophomores) and which consisted of final-year
students (seniors). Subsequently, the questionnaires were distributed by hand or through the professors at the public university, to be collected directly from the students, or to be collected later from the tutors. Whilst in the private university, questionnaires were put in closed envelopes, as per student in the specified classes, and these envelopes were distributed and then collected by the secretary of the Administration Sciences department, as well as at the Computer Engineering and Computer Science departments. Students studying Computer Engineering and Computer Science were easily accessed, because of their small numbers at both the (public-private) university, despite many students being absent or failing to respond by filling out the questionnaire they were presented with during distribution. Table 3.2 shows the number of questionnaires distributed and returned by public and private university students.

<table>
<thead>
<tr>
<th>University</th>
<th>Sample population</th>
<th>No. of questionnaires distributed</th>
<th>Questionnaires received</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public</td>
<td>1644</td>
<td>600</td>
<td>457</td>
</tr>
<tr>
<td>Private</td>
<td>724</td>
<td>400</td>
<td>260</td>
</tr>
</tbody>
</table>

3.8.2 Qualitative data (interviews)

The second phase of data collection involved gathering qualitative data by interviewing students from both universities. The interviews were carried out during March, 2013 and this procedure was started after the first phase was completed. Semi-structured interviews were conducted on different campuses in the (public-private) university, with the public university interviews being arranged in the library and computer laboratories. Whilst at the private university, interviews were conducted in meeting rooms. The interviews were carried out with students using the Arabic version on student request, with the duration of the interviews being 30-45 minutes. The process was applied according in the following sequence:
1. The researcher introduced herself to the interviewee and clarified to them the aims of the research. The interviewee was informed of ethical issues, such as confidentiality and the anonymity of the information provided.

2. The researcher reminded the interviewee of the definition of ICT which is mentioned on the first page of the questionnaire, followed by a brief overview of ICT tools.

3. The researcher asked the interviewees’ permission to tape-record the interview, and all the interviewees accepted.

4. The researcher started to ask questions and gave the interviewee enough time to illustrate their answers, while notes were also written on the interview form which had been prepared earlier.

The interviews were conducted on a sample of 17 students from the public university and the private university. Table 3.3 shows a number of interviews conducted at both public and private universities.

<table>
<thead>
<tr>
<th>University</th>
<th>No. of interviews</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Public University</td>
<td>11</td>
</tr>
<tr>
<td>The Private University</td>
<td>6</td>
</tr>
</tbody>
</table>

**3.9 Data analysis**

Data analysis can be described as the process by which the data obtained from participants is explored in order to figure out the main results of a study on a specific phenomenon (Kumar, 2011). It is worth mentioning that there are two main ways of analysing collected data, based on the nature of these data. Qualitative data may be analysed in a thematic or descriptive way, while quantitative data may be analysed in a statistical or numerical form. In this study, the quantitative and qualitative approaches, or the ‘mixed approach’, were used in order to gain
more confident results and thus contribute to the achievement of the study objectives. Moreover, quantitative and qualitative data were analysed separately at different stages. Next, both sets of data were incorporated to reach the research conclusions and give rise to the recommendations in the final chapter. The data analysis stages are shown below:

**The first stage:** In the first stage, the study analyses the quantitative data collected from participating students using the SPSS software, version 19. The statistical data analysis could be considered as the process of summarising the results in a statistical form, such as providing the mean and range for the data collected. In fact, the process of analysing data relies heavily on the process of collecting data from participating students. Therefore, these collected data are analysed in specific and specialised programmes, because they are designed to identify the variables which should be present in the columns of the analysis. Working with the variables and columns of the analysis depends on analysing data collected using the quantitative approach, because this approach requires statistical results which are provided in a numerical form (Woodley, 2004).

SPSS is considered as statistical software which analyses collected data much faster and more accurately, due to the huge benefits it can provide for both beginners and experienced users. In this research, SPSS was used to identify participants’ responses so as to be able to answer the study questions. The data were therefore coded and imported into the SPSS software so that its many functions could be applied, used in analysing quantitative data, as follows:

- **Means:** This function was used to calculate the final statistics and the average of the responses in every case, when they were divided into groups.
Multivariate Analysis of Variance (MANOVA) explored the significance of differences between the average scores of students’ responses towards the components of attitude, depending on the factors of the study.

The independent –sample T-test compared the means of the two samples.

The one-way analysis of variance (ANOVA) was used to determine whether there were any significant differences between the means of three or more independent (unrelated) groups.

The Fisher ‘least significant differences’ (LSD) test, was used to further explore and compare the mean of one group with another.

The frequency was used to indicate the regularity of occurrence of each variable. This feature can be used in a statistical summary to analyse the extension of observations and distinctive value.

The Cronbach Alpha coefficient was used for calculating the stability concept of internal consistency.

The Pearson Correlation Coefficient: a measurement of the linear correlation (dependence) between two variables, \( X \) and \( Y \).

Percentage: The percentage function can be used to calculate the percentage of participants with the same responses from 100%.

Standard Deviation: this function was used to compute the diffusion of the participants’ answers.

Flow Charts: This function was used to describe and view the numbers in a more attractive way, for deeper understanding of the numeric results.
The second stage: After collecting and analysing the questionnaire data, the 17 recorded interviews obtained were transcribed and translated into English. The interviews were imported into NVivo software version 9 to be coded and analysed. NVivo is:

Software that helps you easily organise and analyse unstructured information, so that you can ultimately make better decisions. Whatever your materials, whatever your field, whatever your approach, NVivo provides a workspace to help you at every stage of your project from organising your material, through to analysis, and then sharing and reporting (Timberlake Consultants Limited, 2013)

‘Nodes’ are amongst those NVivo features that help facilitate qualitative data analysis. ‘Nodes’ are used for storing the data needed in separate folders and naming them according to the study factors. This process enables the researcher to easily retrieve and access the required coded themes by their Node names.

3.10 Research population and sample

Population’ refers to all the subjects in a unit; this means all the events, objects, and individuals who form one unit, such as churches, schools, universities, or hospitals. In fact, the population is considered as a very large institute which can make it difficult to describe a specific phenomenon. Therefore, a number of samples may be derived from a whole population, where the sampling can be defined as the process of choosing a set from the entire population that can efficiently represent it (Yount, 2006).

Furthermore, there are two possible methods for the sampling process: probability sampling methods and non-probability sampling methods. Probability sampling methods relate to identifying the entire population and then randomly selecting a sample. On the other hand, non-probability sampling methods are related to identifying the entire population and then selecting specific samples based on certain conditions; for example, selecting the sample from the population using non-probability sampling methods, which can be conducted on the basis of
each employee who has taken a certain course. In addition to the above, each sampling method involves many different types. For example, the probability sampling method types are: random sampling stratified random sampling, and cluster sampling, while the non-probability sampling method types are: purposive sampling, systematic sampling and convenience sampling (Fraenkel and Norman, 2006).

One of the best known non-probability methods is the ‘Convenience sampling method’. A convenience sample is ‘a group of individuals who (conveniently) are available for study’ (Fraenkel and Wallen, 2006, p. 100). This sampling method is mostly used when the researcher finds that obtaining the study sample is considered to be difficult or impossible. In the convenience sampling method, the researcher meets a group of available individuals and collects the required data from all of them by distributing questionnaires or interviewing them. He will then meet another group of individuals and repeat the same procedure with the available participants and so on, until he finishes up with the required number of data or number of samples required (Fraenkel and Wallen, 2006). The current study sample is considered to be a convenience sample, since it was very difficult, even impossible, to reach the huge number of students at the only public university in Kuwait, and the private university chosen, and so the sample was selected according to its availability in university classes. Permission was therefore obtained from tutors to distribute questionnaires to students at the end of each lecture, or to collect them the same day. Alternatively, they were distributed by the tutors and later collected from them.

3.11 Sample description

The population in this study comprised the students studying at two different universities in Kuwait; one is a Public University in Kuwait and the second is a Private university. A number
of questionnaires were distributed to 1000 students, who were selected using convenience sampling methods according to their academic discipline, namely Administration Sciences, Computer Science, and Computer Engineering. The sample was also selected on the basis of its range, which made access to all potential participants difficult; therefore, the sample was selected by determining the classes attended by second-year (sophomore) students and final-year (senior) students. On the other hand, a number of interviews were conducted with 17 students who were selected using convenience sampling methods, according to their preferences, by writing their e-mails or mobile numbers in the last page of the questionnaire, where students were asked if they wished to participate in an interview at a later date. The majority of the students did not display an interest in being interviewed due to their exams and the times of the lectures, since the students were under pressure. Moreover, many students left their e-mail addresses and contact numbers but then refused to contribute in interviews later. This was because of limited time and exams. The participants in the quantitative method numbered 457 students studying at the public university in Kuwait, and 260 students studying in the private university; see Table 3.4 below.

<table>
<thead>
<tr>
<th>University</th>
<th>Sample population</th>
<th>No. of questionnaires distributed</th>
<th>Questionnaires Received</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public</td>
<td>1644</td>
<td>600</td>
<td>457</td>
</tr>
<tr>
<td>Private</td>
<td>724</td>
<td>400</td>
<td>260</td>
</tr>
</tbody>
</table>

These participating students were selected for participation in the quantitative approach by distributing a number of questionnaires in both universities. In the public university, 600 questionnaires were distributed, but only 457 were accepted for analysis in this chapter. In the private university, 400 questionnaires were distributed, but only 260 were accepted for analysis in this chapter. On the other hand, the participants who were interviewed in this study amounted to 17 students, divided as shown in Table 3.5.
Table 3.5: The sample size in the qualitative method

<table>
<thead>
<tr>
<th>University</th>
<th>Sample Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public</td>
<td>11</td>
</tr>
<tr>
<td>Private</td>
<td>6</td>
</tr>
</tbody>
</table>

These interviews were held as a result of students expressing a desire to meet the researcher and discuss responses to the study questions. Therefore, they provided their mobile numbers or e-mails after they had completed the questionnaires. It can be seen from Table 3.6 that the participating students could be divided according to the university they were studying at. The participating students at public university consisted of 11 with a percentage of 64.7%. On the other hand, the participating students at the private university numbered 6, thus comprising a percentage of 35.3%.

Table 3.6: The qualitative sample description

<table>
<thead>
<tr>
<th>University</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public University</td>
<td>11</td>
<td>64.7</td>
</tr>
<tr>
<td>Private University</td>
<td>6</td>
<td>35.3</td>
</tr>
<tr>
<td>Total</td>
<td>17</td>
<td>100.0</td>
</tr>
</tbody>
</table>

The sample was demographically different due to the variables of gender, discipline, type of university and level of study. According to Table 3.7, the participating members in both universities were distributed on the basis of their gender, discipline and year of study. Starting with gender, the participants were divided into male and female groups; in the Public University, the male students numbered 4, and the female, 7. On the other hand, in the Private University in Kuwait, the male students numbered 4, but the female students numbered 2.

Turning to the subject of academic discipline, the participants were divided into Humanities (Administration Sciences) and Sciences (Computer Science and Computer Engineering). 5 students out of 11 were studying Humanities in the public university, where 6 students were
studying Sciences. In contrast, 4 students were studying Humanities at the private university, where only 2 students were studying Sciences. Finally, the participants in both universities were divided according to their year of study: sophomore or senior. In public university, 6 students were sophomores and only 5 were seniors. However, in the private, 3 students were sophomores and 3 were seniors.

Table 3.7: The demographic variables of the study's interview participants

<table>
<thead>
<tr>
<th>Variable</th>
<th>Gender</th>
<th>Discipline</th>
<th>Year of study</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pubic</td>
<td>Private</td>
<td>Pubic</td>
</tr>
<tr>
<td>Frequencies</td>
<td>Male</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>11</td>
<td>6</td>
</tr>
</tbody>
</table>

3.12 Socio-demographic variable analysis

The following will discuss the frequencies and percentages of an analysis of participants’ demographic variables: gender; type of university; academic discipline; year of study; main language of study; English language skills; experience in using ICT; sources of learning to use ICT; ICT support, and sources of ICT support, obtained from the questionnaires in the form of results compared between the two universities involved in this study, public and private.

3.12.1 Gender

It can be seen from Table 3.8 that the public university in Kuwait has a higher percentage of female students, with female students from this university numbering 65.2%; hence, 298 female students out of 457 participants. Moreover, 159 male students out of 457 participants were from the public university, which came to 65.2% of the sample participating in this study. On the other hand, the private university had a higher percentage of female students, with 51.9%,
meaning 125 female students out of 260 participants. Furthermore, there were 135 male students out of 260 participants from the private university, meaning 48.1% of male students participating in this study.

**Table 3.8:** Frequency and percentage of participants’ gender from the (Public-Private) university

| Gender | Public | | | Private | |
|--------|--------|--------|--------|--------|
|        | Frequency | Percentage (%) | Frequency | Percentage (%) |
| Male   | 159     | 34.8   | 125     | 48.1   |
| Female | 298     | 65.2   | 135     | 51.9   |
| Total  | 457     | 100%   | 260     | 100%   |

3.12.2 Discipline

It can be seen from Table 3.9 that the public university provided a higher percentage of Humanities students, since the percentage reached 61.1%, with 279 Humanities students out of 457 participants. In addition, there were 178 Sciences students out of 457 participants from the public university, amounting to a percentage of 38.9%. On the other hand, the private university had a higher percentage of Sciences students, at 51.9%, totalling 135 Sciences students out of 260 participants. What is more, there were 68 Humanities students out of 260 participants from the private university, and therefore 48.1% of the study sample.

**Table 3.9:** Frequency and percentages of participants’ disciplines from the (Public-Private) university

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Pubic university</th>
<th>Private university</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Percentage (%)</td>
</tr>
<tr>
<td>Science Departments (Computer Engineering/Computer Science)</td>
<td>178</td>
<td>38.9</td>
</tr>
<tr>
<td>Humanities Departments (Administration Sciences)</td>
<td>279</td>
<td>61.1</td>
</tr>
<tr>
<td>Total</td>
<td>457</td>
<td>100%</td>
</tr>
</tbody>
</table>
3.12.3 Year of study

It can be seen from Table 3.10 that the public university has a higher percentage of sophomore students, since this percentage reached 54.3% from the public university, with 248 sophomores out of 457 participants. Moreover, there were 209 senior students out of 457 participants from the public university, thus a percentage of 45.7% of senior students participating in this study. On the other hand, the private university had a higher percentage of sophomore students, compared to seniors, since the sophomores totalled 51.2%, with 133 sophomores out of 260 participants. On the other hand, seniors in the private university constituted 127 out of 260 participants, and came to a percentage of 48.8%.

Table 3.10: Frequency and percentages of participants’ year of study from (Public- Private) university

| Year of Study | Public | | | Private | |
|---------------|--------|-----------------|--------|--------|
|               | Frequency | Percentage (%)  | Frequency | Percentage (%)  |
| Sophomore     | 248     | 54.3            | 133     | 51.2 |
| Senior        | 209     | 45.7            | 127     | 48.8 |
| Total         | 457     | 100%            | 260     | 100% |

3.12.4 Main learning language

It can be seen from Table 3.11 that the public university had a higher percentage of students studying in both English and Arabic, since the percentage of such students came to 50.8%, with 232 out of 457 participants. Furthermore, 212 students out of 457 participants responded that they studied through the medium of the English language in the public university, to a total of 46.4% of the students participating in this study. Moreover, 2.8% of participants from the public university stated that their main learning language was Arabic, with just 13 out of 457 participants. On the other hand, the private university had a higher percentage of students learning English, since the percentage of these students amounted to 84.2%, with 219 out of 260 participants. Furthermore, 37 students out of 260 responded that they were studying in both
Arabic and English, producing a percentage of 14.2% of participants from the private university, while just 1.5% of the participants revealed that their main learning language was Arabic, which meant 4 participants out of 260.

<table>
<thead>
<tr>
<th>Main Learning Language</th>
<th>Public</th>
<th>Private</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Percentage (%)</td>
</tr>
<tr>
<td>Arabic</td>
<td>13</td>
<td>2.8</td>
</tr>
<tr>
<td>English</td>
<td>212</td>
<td>46.4</td>
</tr>
<tr>
<td>Both</td>
<td>232</td>
<td>50.8</td>
</tr>
<tr>
<td>Total</td>
<td>457</td>
<td>100%</td>
</tr>
</tbody>
</table>

**Table 3.11:** Frequency and percentages of participants’ main study language from the (Public-Private) university

### 3.12.5 English skills

Reading, writing, and speaking skills were analysed in order to identify the level of each skill possessed by students in both public and private. The aim of showing the level of English knowledge amongst students in both universities was to compare the level of such knowledge between public and private universities, where the whole approach to teaching and the languages involved, differs.

#### 3.12.5.1 Reading skills

According to Table 3.12, it appears that both public and private universities participants had high mean values for their English reading skills, but the private exceeded the public university in this domain since their mean value appeared to be 4.29, while the mean value of the public university appeared to be 3.98. However, ensuring that this dimension had positive responses in a specific university could be achieved by measuring the mean value and ensuring that it was the mean of the scale, and therefore a mean value of 3 on this scale. The two mean values exceeded 3 and so it could be determined that participants at both the public university and the private university gave positive responses in this domain.
Table 3.12: Frequency, percentages, means, and standard deviations of participants’ English reading skills from the (Public-Private) university

<table>
<thead>
<tr>
<th>English Reading Skills</th>
<th>Public</th>
<th></th>
<th>Private</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Percentage (%)</td>
<td>Mean ± SD</td>
<td>Frequency</td>
</tr>
<tr>
<td>Poor</td>
<td>2</td>
<td>0.4</td>
<td>3.98 ± 0.835</td>
<td>1</td>
</tr>
<tr>
<td>Fair</td>
<td>16</td>
<td>3.5</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Good</td>
<td>103</td>
<td>22.5</td>
<td></td>
<td>37</td>
</tr>
<tr>
<td>Very Good</td>
<td>203</td>
<td>44.4</td>
<td></td>
<td>94</td>
</tr>
<tr>
<td>Excellent</td>
<td>133</td>
<td>29.1</td>
<td></td>
<td>124</td>
</tr>
<tr>
<td>Total</td>
<td>457</td>
<td>100%</td>
<td></td>
<td>260</td>
</tr>
</tbody>
</table>

3.12.5.2 Writing skills

According to Table 3.13, it appears that both the public and the private participants had high mean values for their English writing skills. However, the private exceeded the public university in this domain, since their mean value of private university was 4.07, while the mean value for the public university was 3.70. Participants at both public and private universities therefore had positive responses in this dimension.

Table 3.13: Frequency, percentages, means, and standard deviations of participants’ English writing skills from the (Public-Private) university

<table>
<thead>
<tr>
<th>English Writing Skills</th>
<th>Public</th>
<th></th>
<th>Private</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Percentage (%)</td>
<td>Mean ± SD</td>
<td>Frequency</td>
</tr>
<tr>
<td>Poor</td>
<td>7</td>
<td>1.5</td>
<td>3.70 ± 0.962</td>
<td>1</td>
</tr>
<tr>
<td>Fair</td>
<td>35</td>
<td>7.7</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Good</td>
<td>139</td>
<td>30.4</td>
<td></td>
<td>55</td>
</tr>
<tr>
<td>Very Good</td>
<td>185</td>
<td>40.5</td>
<td></td>
<td>111</td>
</tr>
<tr>
<td>Excellent</td>
<td>91</td>
<td>19.9</td>
<td></td>
<td>87</td>
</tr>
<tr>
<td>Total</td>
<td>457</td>
<td>100%</td>
<td></td>
<td>260</td>
</tr>
</tbody>
</table>

3.12.5.3 Speaking skills

According to Table 3.14, it appears that both the public and the private universities participants had high mean values in their English speaking skills. Nevertheless, the private exceeded the public university in this dimension, since the mean value at the private university was 4.08, while the mean value at the public university was 3.61. What is more, it is clear that 41.9% of
the private university students claimed their English speaking skills were excellent, but only 20.1% from the public expressed this about themselves. However, both mean values exceeded 3 and therefore, the participants at both the public and the private universities gave positive responses in this dimension.

Table 3.14: Frequency, percentages, means, and standard deviations of participants’ English speaking skills from the (Public-Private) university

<table>
<thead>
<tr>
<th>English Speaking Skills</th>
<th>Public</th>
<th>Private</th>
<th>Mean ± SD</th>
<th>Mean ± SD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Percentage (%)</td>
<td>Frequency</td>
<td>Percentage</td>
</tr>
<tr>
<td>Poor</td>
<td>13</td>
<td>2.8</td>
<td>5</td>
<td>1.9</td>
</tr>
<tr>
<td>Fair</td>
<td>43</td>
<td>9.4</td>
<td>11</td>
<td>4.2</td>
</tr>
<tr>
<td>Good</td>
<td>143</td>
<td>31.3</td>
<td>50</td>
<td>19.2</td>
</tr>
<tr>
<td>Very Good</td>
<td>166</td>
<td>36.3</td>
<td>85</td>
<td>32.7</td>
</tr>
<tr>
<td>Excellent</td>
<td>92</td>
<td>20.1</td>
<td>109</td>
<td>41.9</td>
</tr>
<tr>
<td>Total</td>
<td>457</td>
<td>100%</td>
<td>260</td>
<td>100%</td>
</tr>
</tbody>
</table>

3.12.6 Experiences in using ICT

According to Table 3.15, it appears that both public and private students had high mean values for their experience of using ICT, but the public exceeded the private university in this domain, since the mean value at the public university proved to be 4.02, and the mean value at the private came to 3.95. It is clear from the answers that most students in both universities had ‘Very Good’ experience, since students’ responses were ‘Very Good’, with 45.3% at the public, while the private university students’ responses amounted to 53.8% for the same question.

On the other hand, students found to have ‘Fair’ and ‘Poor’ experience were few in number, with only 9 out of 457 responding with ‘Fair’ at the public university, and 26 out of 260 responding likewise at the private university. However, in order to ensure that there were positive responses in this domain at a specific university, the mean value was measured to ensure that it was above
the mean of the scale, i.e. a mean value of 3 on this scale. The two mean values exceeded 3 and so participants at both the public and private had positive responses for this variable.

**Table 3.15:** Frequency, percentages, means, and standard deviations of participants’ experience in using ICT from the (Public-Private) university

| Experience in Using ICT | Public | | | Private | | |
|---|---|---|---|---|---|
| | Frequency | Percentage (%) | Mean ± SD | Frequency | Percentage (%) | Mean ± SD |
| Poor | 1 | 0.2 | 4.02±0.79 | 1 | 0.4 | |
| Fair | 9 | 2.0 | | 26 | 10.0 | |
| Good | 105 | 23.0 | | 26 | 10.0 | |
| Very Good | 207 | 45.3 | 3.95 ± 0.89 | 140 | 53.8 | |
| Excellent | 135 | 29.5 | | 67 | 25.8 | |
| Total | 457 | 100% | | 260 | 100% | |

**3.12.7 Sources of learning experience in using ICT**

According to Table 3.16, it appears that most of the students in both universities selected previous education and self-learning at a high frequency, since a frequency of 277 participants from the public university and 147 participants from the private university was noted for those who stated they gained their ICT experience from previous education. In the public university, a percentage of 71.3% responded that their own experience was the most significant learning resource for using ICT, whilst at the private university, only 49.2% answered that they had gained their experience on their own. It appeared that the percentage of participants attending ICT courses to learn ICT was very low at both universities, with 28.9% of participants from the public and 24.6% from the private university revealing as such. Moreover, 3.5% of the public university participants and 4.6% the private university participants responded that they had attended private lessons.

On the other hand, self-learning seemed to be the first option for the public university students in relation to learning how to use ICT, where 71.3% of participants replied ‘Yes’ to the self-
learning option. Moreover, 60.6% of the public university participants confirmed that previous education had been the second most significant source of their ICT experience. The results also showed that the private university students had gained ICT experience from their previous education as a primary option, where 56.5% said ‘Yes’ to previous education, while the second most important learning source for them was self-learning, where they answered positively with regard to this option. However, the results revealed near similarity regarding ICT courses and private lessons attended, except for the two options: self-learning and previous education, since such responses were found to be varied between the both universities participants.

<table>
<thead>
<tr>
<th>Learning Resource</th>
<th>Public</th>
<th></th>
<th>Private</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Percentage (%)</td>
<td>Frequency</td>
<td>Percentage (%)</td>
</tr>
<tr>
<td>Previous education</td>
<td>277</td>
<td>60.6</td>
<td>147</td>
<td>56.5</td>
</tr>
<tr>
<td>ICT courses</td>
<td>132</td>
<td>28.9</td>
<td>64</td>
<td>24.6</td>
</tr>
<tr>
<td>Private lessons</td>
<td>16</td>
<td>3.5</td>
<td>12</td>
<td>4.6</td>
</tr>
<tr>
<td>Self-learning</td>
<td>326</td>
<td>71.3</td>
<td>128</td>
<td>49.2</td>
</tr>
</tbody>
</table>

**Table 3.16:** Frequency and percentages for place of learning the use of ICT tool from the (Public-Private) university

3.12.8 University ICT support

This factor was analysed to find out if university ICT support had any influence on students’ attitudes towards using ICT in learning. The answers given for this question depended on the Likert Scale and therefore, the answers were divided into 5 different levels of expression, respectively, as follows: Strongly Agree, Agree, Neutral, Disagree, and Strongly Disagree, with each expression being coded respectively, as 5, 4, 3, 2, and 1 (Fraenkel and Wallen, 2006).

According to Table 3.17, it appears that most of the students in both universities revealed that their universities supported the use of ICT tools within the learning process, since they counted 266 students in the public university with a percentage of 58.2%, and 143 students from the
private university, with a percentage of 55.0%. In addition, a small percentage of students revealed that their universities did not support the use of ICT tools, and this was true of both universities. For example, at the public university, there were only 9 occurrences of this, with a percentage of 2.0% who revealed that they did not receive any support from their university to use ICT tools. Conversely, there were only 5 occurrences at the private university, with a percentage of 1.9%, who claimed that their university did not support the use of ICT tools within their learning process.

Table 3.17: Frequency and percentages of university support in using ICT

| University Support in Using ICT | Public | | | Private | | |
|-----------------------------|------|------|------|--------|------|
|                             | Frequency | Percentage (%) | Frequency | Percentage (%) |
| Strongly Disagree           | 9     | 2.0   | 5     | 1.9    |
| Disagree                    | 61    | 13.3  | 8     | 3.1    |
| Neutral                     | 57    | 12.5  | 62    | 23.8   |
| Agree                       | 266   | 58.2  | 143   | 55.0   |
| Strongly Agree              | 64    | 14.0  | 42    | 16.2   |
| Total                       | 457   | 100%  | 260   | 100%   |

3.12.9 Sources of support in using ICT

The participants of this study were asked to give one or more answers to a single question. Therefore, the frequency and percentages of responses were calculated according to the frequency of either selecting or not selecting the option for the question. According to Table 3.18, it appears that 70.5% of the public university students answered ‘Yes’ to tutors being the main source of support for using ICT. Family and friends were considered as the second source of support, with 68.1% revealing they had received support from their family and friends, whilst the least common source of support for the public university students was the IT department, where 25.6% of students revealed they had received support from the IT department at the public university.
Alternatively, in the private university in Kuwait 62.7% of students revealed that family and friends were the main source of support in using ICT in their learning. Additionally, 43.8% revealed that they had received support from their tutors, and so tutors were considered as the second most important source of support for students at the private university. Moreover, it was indicated that only 40% of students receive their support from the ICT department. Hence, the ICT department at the private university was also considered as the third commonest source of support.

Table 3.18: Frequency and percentages of sources of support for ICT

<table>
<thead>
<tr>
<th>Support</th>
<th>Public Frequency</th>
<th>Public Percentage (%)</th>
<th>Private Frequency</th>
<th>Private Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tutors</td>
<td>322</td>
<td>70.5</td>
<td>114</td>
<td>43.8</td>
</tr>
<tr>
<td>ICT department</td>
<td>117</td>
<td>25.6</td>
<td>104</td>
<td>40.0</td>
</tr>
<tr>
<td>Family and friends</td>
<td>311</td>
<td>68.1</td>
<td>163</td>
<td>62.7</td>
</tr>
</tbody>
</table>

3.13 Ethical considerations

In this study, the research followed the steps for ethical consideration. According to the British Educational Research Association (BERA, 2011, p. 5):

Researchers should operate within an ethic of respect for any person involved in the research they are undertaking. Individuals should be treated fairly, sensitively, with dignity, and with an ethic of respect and freedom from prejudice regardless of age, gender, sexuality, race, ethnicity, class, nationality, cultural identity, partnership status, faith, disability, political belief or any other significant differences.

The following procedures were undertaken before conducting the study in the state of Kuwait:

1. Before starting the study, an ethics form was completed and presented to the School of Education’s Research Ethics Committee at Cardiff Metropolitan University (CMU). The researcher then gained the necessary approval. The researcher gained a letter of permission from the School of Education for implementing this study.
2. The permission letter was presented to the administration and departments at both the public and the private universities in Kuwait, and their approval subsequently obtained.

3. The study was conducted at both the public and the private universities with ethical consideration of the participating members. The researcher explained to the participating members the main aim of the research and its contribution to the real world, and that all of the participants would participate voluntarily without any pressure. Besides, participants would be treated as humans rather than objects, since this research respected their privacy and self-respect. This was ensured by inserting a special section in the questionnaire that related to participants’ attitudes to consenting to answer questions in the questionnaires. As well as this, the questionnaire clarified that they had the right to withdraw at any time without being asked to present an excuse. In addition to the above, this study concentrated on the security and confidentiality of participants, using codes instead of real names.

3.14 Research obstacles

The questionnaires were distributed by hand to those students studying at the Public University. The period of time needed to distribute the questionnaires in the public university was over 3 months because of the students and tutors preoccupations and unresponsiveness with the study researcher, as well as the fact that many of the tutors refused to cooperate. This cost the researcher more time meeting other tutors to seek permission for distributing the questionnaires in their classes. However, getting the administrative approval required to distribute the questionnaires was easier and smoother at the public university than it was at the private, where the researcher only obtained acceptance to perform the study after three weeks and longer. Great effort was made by the researcher in distributing the questionnaires at the public university, due to the number of students and the distance and difficulty of movement between colleges, while
distributing questionnaires was easier at the private university because its colleges are located in just one campus.

3.15 Summary

This chapter has presented in detail the methodological approach followed and the research procedure for this study. It has also shown the techniques used for different types of data collection from the study sample. Moreover, the chapter presented a brief about the pilot study and the validity and reliability of the questionnaire. Furthermore, it describes how data was collected and analysed at different stages. It then provides an analysis of the selected sample according to demographic variables. Finally, at the end of the chapter, the ethical issue was mentioned, followed by the obstacles to the study. The next chapter will analyse the both the quantitative and qualitative data collected from the sample in combination, in order to provide answers to the main study questions.
Chapter Four: Quantitative and Qualitative Data Analysis

4.1 Introduction

This chapter will present an analysis of the collected data. The previous chapter (Chapter 3) described the methodology used throughout this thesis and the procedures for data collection. This chapter will analyse the collected data in minute detail in order to reveal and discuss the results by finding answers to the study question. This study will use the Statistical Package for Social Sciences (SPSS), Version 19 for the analysis of the collected quantitative data, as well as NVivo software to organise the qualitative data obtained from students’ interviews. Moreover, the narrative data analysis for the interview questions will be used to analyse the qualitative data. It is worth noting here, that the quantitative data analysis will be supported by the qualitative data analysis gathered from the interviewees.

4.2 The analysis of question One

Q1: What are the attitudes of students towards using ICT in their learning at KHEIs?

In order to answer the first question, a standard scale for attitude was calculated and considered for the data analysis of the questionnaire; the scale consists of 5 levels to describe student attitude. The scale consists of 5 levels and is derived from the following equation:

\[
\text{Highest value of scale - lowest value of scale} = \frac{5 - 1}{5} = 0.8
\]

The mean levels of attitude in this chapter will therefore be explained, based on the following levels:

- 1- 1.8 = strongly negative attitude
- 1.81- 2.61 = negative attitude
• 2.62- 3.42 = neutral attitude
• 3.43- 4.23= positive attitude
• 4.24- 5.04= strongly positive attitude

Table 4.1 explains the standards for judging attitudes towards the use of ICT tools.

<table>
<thead>
<tr>
<th>Standards for judging attitudes towards the use ICT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-1.8</td>
</tr>
<tr>
<td>Strongly negative</td>
</tr>
</tbody>
</table>

In order to analyse university students’ attitudes towards using ICT, both means and standard deviations were calculated for the students of the Public University and the Private University in Kuwait in terms of their responses to content relating to the use of ICT. In addition to this, attitudes were measured based on the standards for judging attitudes towards ICT ‘usefulness’ (U) and ‘ease of use’ (EOU), as shown in Table 4.2.

Table 4.2: Means, standard deviations, and attitude towards ICT ‘usefulness’ and ‘ease of use’

<table>
<thead>
<tr>
<th>Contents of the attitude</th>
<th>Public (n = 457)</th>
<th>Private (n = 260)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean Std. Attitude</td>
<td>Mean Std. Attitude</td>
</tr>
<tr>
<td>Ease of use</td>
<td>4.37 0.51 Strongly Positive</td>
<td>4.25 0.56 Strongly Positive</td>
</tr>
<tr>
<td>Usefulness</td>
<td>4.31 0.55 Strongly Positive</td>
<td>4.16 0.65 Positive</td>
</tr>
<tr>
<td>General attitude</td>
<td><strong>4.34</strong> 0.49 <strong>Strongly Positive</strong></td>
<td><strong>4.21</strong> 0.57 <strong>Positive</strong></td>
</tr>
</tbody>
</table>

According to Table 4.2, the general attitude of students from both public and private universities towards using ICT tools is positive. The results also confirm that the mean of the public university students’ responses is higher than the mean of the private university students’ responses, and so the public university students have a strong positive attitude comparing to the private students whom general attitudes are positive. To explain further, the graph in Figure 4.1
shows the percentage responses of students in both universities towards using ICT tools; the percentage of the public responses is higher than the percentage of the private university responses.

Figure 4.1: the average response from students in both

As for the qualitative data obtained from interviews with students in both universities, which aimed to more deeply and accurately identify students’ attitudes towards the use of ICT in their learning, the results of the interviews analysed confirmed that students in the public university have strongly positive attitude towards using ICT in their learning, comparing to private university students who have a positive attitude only. Since all the interviewees cited examples which indicated the importance of ICT tools for students in their learning during this era, especially since they save time and effort through useful features that make learning at university simpler and easier. This positive attitude was supported in the interviewee comments, such as: “ICT has become a part of my learning life”; “ICT tools are important for our learning”; “ICT saved our time and effort”, and “ICT has eased our communication with tutors and classmates”. The following presents examples of student responses:

/Public university ICT tools should be considered as part of the education system in our university, so all tutors should use them in their teaching process (Interview 4)
As we can see from the results in the table above, the private university students have a less positive attitude towards using ICT, when compared with the public university students. This result was also revealed in one of the private university interview responses. The student stated that as much as ICT tools are important, even vital, for her learning, since they make her learning easy and flexible, she would rather learn and study from books for her exams. This student returned to continue her higher education after years of working in the IT department of
one of the Kuwaiti Ministries. She therefore had a different experience and opinion of using ICT for her learning. The following is her response when asked about the importance of ICT in her higher education:

Sometimes I stay away from using them because I prefer to study and learn from books, and highlight important points between sentences with my pencil (Interview 13)

On the other hand, the private university interviews revealed that the university appeared unconcerned about maintaining or upgrading ICT tools for student learning, such as the printers, computers and the Internet. The students were also dissatisfied with the lack of paper provided in the computer laboratories, which had an negative influence on their behaviour towards ICT. Besides, they stated that the Internet was always slow and needed to be upgraded. Accordingly, these negatives could lie at the root of their low range of positive attitude and behaviour towards using ICT in their learning. Here are some examples of the private university student responses:

The printers in the computer labs are sometimes out of service and lack paper. This makes me feel frustrated, especially when I need to print important papers and articles for my homework or assignments… Internet speed is very slow at the university campus, compared with the Internet in my home, since the number of students here is increasing yearly, and the Internet needs to be upgraded to accommodate the Internet downloading and use by students (Interview 17)

I am very happy about what the university provides us in terms of ICT tools and their use in education, although there is a lack of ICT courses provided in the university curriculum, which I believe would be necessary for our learning in our first year of college. We can’t depend on our earlier ICT experience, because in the university, we are introduced to new ICT tools that we should learn how to use…One of the obstructions is that I can’t access the files I save on the university computers when I am learning at home, so this delays me in finishing my coursework or assignments (Interview 14)

Most of the time, I find the printers are out of order, or programmed as a default to another printer outside the room, and this delays my learning and makes me feel dissatisfied with the ICT service I receive. We don’t get any support from the IT team, but it is their job to keep the printers repaired for assisting students’ learning (Interview 13)
I don’t have access to the files which I save on the university computers when I am studying at home, and this delays my learning and wastes my time and effort, since I have to go to the university in the afternoon to complete my coursework there. Besides, I feel dissatisfied with the lack of support I receive when I face technical problems when printing my papers or lectures slides (Interview 15)

However, students’ responses from the public and the private universities interviews reveal that their overall attitudes towards using ICT are positive, and this indicates the importance of ICT tools in their university learning in general, as well as the ability of these tools to save them time and effort, especially in this fast-paced era. Moreover, their positive attitude could be due to various factors in their university, and this will be discussed later in this chapter. In order to analyse the responses of students in the content of their attitude towards using ICT, the means and standard deviations for students in both public and private universites were calculated, and the attitudes of these students were measured for each paragraph relating to the content of attitude, by using the questionnaire.

4.2.1 First: Usefulness of ICT

In order to understand the attitudes of students in both universities the (public and private) , based on the statements relating to the usefulness of ICT tools, the mean and standard deviations for the study sample’s responses towards the statements of the usefulness variable were calculated. Moreover, the ranks of the responses were measured in order to judge the attitude of the participants as shown in Table 4.3:
According to the above table, the means of participants’ responses from the public university for the statements of usefulness variable lie within the range 4.15 – 4.59 and the standard deviations are between 0.65 and 0.89. Based on the standards applied in judging attitude, it appears that all the statements on the usefulness of ICT variable reflect positive responses from the public university students towards it. It also appears that the means of participants from the public university are higher than the means of participant responses from the private university regarding statements 3. Furthermore, the results indicate that the responses from private university participants towards the usefulness variable lie within the range 4.11 – 4.39 and the standard deviations fall between 0.69 and 0.84. Based on the standards applied in judging
attitude, it appears that all the statements on the usefulness of ICT tools variable reflect positive responses from the private university students towards it. However the means of the responses from private university show lower values regarding statements 3.

According to the above table, it appears that there is compatibility in the responses of both universities for a number of statements for the usefulness variable, such as 1, 2, 4, 5, 6 and 9 and these statements are; “ICT makes learning easier”; “ICT makes communication with others easy”; “ICT makes students effective learners”; “using ICT enables students to accomplish more activities and assignments more quickly”, and “ICT enhances students’ knowledge”. This compatibility in students’ responses with regard to these paragraphs indicates that the usefulness of ICT in learning has a significant effect on students’ general attitudes towards using ICT at both universities (public and private), and this effect is regarded as positive, according to the responses supported in the interviews. The following examples show interviewee participant responses from both universities:

(Public university student) the main vital ICT tools I use for my learning are the Internet and my laptop; those are the tools I use most often, whether I am in class or outside class... Most information I receive on my courses is gained through searching the Internet; this has increased my knowledge and information for my courses, and has helped me to become more confident and interactive in discussing coursework with others in the classroom... ICT tools, such as social networking applications and Blackboard have assisted me in communicating with my classmates and tutors at all times of day and very easily, without even being on the university campus... My laptop contains various software which I use for my learning; this software is also useful as it makes my learning much easier and faster, compared with other learning tools (Interview 1)

(Public university student) Microsoft Office is easy to use in my learning as well as helping me to finish a great deal of coursework in less time and with less effort (Interview 2)

(Public university student) As far as I’m concerned, I use computers and laptops frequently for my university learning since they include useful software that helps me to finish a great deal of homework and assignments in less time. This software is very helpful and easy to use (Interview 4)
ICT tools also bridge the gap between my tutors and classmates and myself since we can exchange and share information at any time and from anywhere… I use a laptop because it is portable and easy to carry; my laptop assists my learning by making it more flexible since I can communicate with my classmates and lecturers and share information with them without time or distance limitations (Interview 6)

I believe that ICT has become an essential part of our learning since it eases our communication with others in the university, as well as saving time and effort and making learning easier and more flexible for us. For example, I can share information or any images about my course with my classmates while I am off the university campus (Interview 8)

The Internet helps me to complete my homework and assignments in a fast and easy way, since I don’t have to spend a lot effort and time searching for the information I need, compared to the traditional ways of searching for information in books and journals at the library, which takes a long time and demands more effort from me (Interview 12)

ICT has eased my learning at the university and saved a lot of time and effort (Interview 15)

In my learning, I use two ICT tools. These tools are my laptop and iPad, and I use them frequently to check my emails from tutors or classmates when I am away from home or off the university campus. I also depend on them when finishing my coursework, homework or assignments, because they assist me in doing my assignments in an easy and fast way, compared to other learning tools. For example, I always use my laptop and iPad to search for specific information about my courses from different search engines. This takes me directly to the information I need with no wasted time or effort… I prefer to use the laptop and iPad since they are very easy to use for me and in my learning, as well as being easy to carry everywhere I go (Interview 17)

[ICT] helps me to complete my homework or assignments quickly and easily. This makes learning much easier for me compared to searching for information through reading books (Interview 12)

For example, sometimes I need to get further information about the course, because of the limited information that I have gained during the lecture, so I use the Internet directly, since it is the main information source for me. On the Internet, I can find plenty of information about any course and this search process helps increase my knowledge, and the knowledge I receive assists me in becoming active and confident in discussing any coursework with others in the classroom (Interview 12)
The interview responses to other statements on the usefulness of ICT were also found to be positive, and were supported by the interview responses. These statements are as follows: ‘Using ICT allows me to accomplish more than when using traditional tools’ and ‘ICT is a useful tool for my learning’. Here are examples of such responses:

(Public university) ICT tools are useful for my university learning, with no doubt (Interview 1)

(Private university) The university has also provided us with Moodle that has multiple useful tools and functions for use in our learning and communication with tutors and classmates (Interview 17)

(Private university) I find ICT tools are very useful for my learning; in addition, these tools make my learning easier and more flexible compared to traditional tools for learning (Interview 13)

Student responses in relation to the usefulness of ICT were found to be positive. This indicates a strong belief in the usefulness of ICT within university education, since all the interview responses pointed to the fact that ICT saves time and effort in learning, and makes learning much easier and more flexible, compared with traditional learning tools. There is also the belief that ICT eases communication with tutors and classmates.

4.2.2 Second: ICT ease of use

In order to understand the attitudes of students at both universities (public and private), based on statements related to ‘ease of use’ of ICT tools, the means and standard deviations for the study sample’s responses to the statements on the ease of use variable were calculated. Furthermore, the rankings of the responses were measured in order to judge the attitude of the participants, as shown in Table 4.4.
Table 4.4: Means and standard deviations of participants’ responses towards the ‘ease of use’ of ICT

<table>
<thead>
<tr>
<th>Dimension</th>
<th>No</th>
<th>Statements</th>
<th>Public university</th>
<th>Private university</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mean  SD  R  Attitude</td>
<td>Mean  SD  R  Attitude</td>
</tr>
<tr>
<td>Ease of use</td>
<td>12</td>
<td>ICT is generally easy to use on my course</td>
<td>4.30  0.72  5 Strongly Positive</td>
<td>4.15  0.85  5 Positive</td>
</tr>
<tr>
<td></td>
<td>13</td>
<td>I find it easy to become skilful in using ICT</td>
<td>4.27  0.79  7 Strongly Positive</td>
<td>4.11  0.88  7 Positive</td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>I find it easy to manage my course files using ICT</td>
<td>4.28  0.76  6 Strongly Positive</td>
<td>4.18  0.84  3 Positive</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>I use ICT because it allows me to learn wherever I need</td>
<td>4.41  0.76  2 Strongly Positive</td>
<td>4.14  0.87  6 Positive</td>
</tr>
<tr>
<td></td>
<td>16</td>
<td>I find it easy to get ICT to do what I want it to do</td>
<td>4.38  0.68  3 Strongly Positive</td>
<td>4.08  0.87  9 Positive</td>
</tr>
<tr>
<td></td>
<td>17</td>
<td>It is easy for me to complete assignments using ICT</td>
<td>4.33  0.72  4 Strongly Positive</td>
<td>4.20  0.84  2 Positive</td>
</tr>
<tr>
<td></td>
<td>18</td>
<td>I find the use of ICT is clear and easy to understand</td>
<td>4.10  0.81  8 Positive</td>
<td>4.09  0.77  8 Positive</td>
</tr>
<tr>
<td></td>
<td>19</td>
<td>I find it easy to search out information in different locations by using ICT</td>
<td>4.48  0.67  1 Strongly Positive</td>
<td>4.28  0.79  1 Strongly Positive</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>Overall, I see that ICT tools are easy to use</td>
<td>4.28  0.73  6 Strongly Positive</td>
<td>4.17  0.85  4 Positive</td>
</tr>
</tbody>
</table>

According to the table above, the means of the public university participants’ responses to the statements on the ‘ease of use’ variable lie within the range 4.10 – 4.48 and the standard deviations are between 0.67 and 0.81. Based on the standards applied in judging attitude, it would appear that all the statements on the ICT tool ‘ease of use’ variable reflect positive to strongly positive responses from the public university students towards this variable. On the other hand, the results indicate that the responses of the private university participants towards the ‘ease of use’ variable lie within the range 4.08 – 4.28 and the standard deviations are between 0.77 and 0.88. Based on the standards applied in judging attitude, it would appear that all the statements on the ICT tool ‘ease of use’ variable reflect positive to strongly positive responses from the private university students towards it.

According to the above table, it appears that there is compatibility between the responses from both universities for all the statements on the ‘ease of use’ variable, such as paragraph 12, 13 and 18 and 19. This indicates that there is a significant effect from the ‘ease of use’ variable on the
participants’ attitudes towards using ICT tools in both universities; this positive attitude was supported in the students’ interviews, as follows: “ICT tools are easy to use”; “ICT tools help to get information from different locations”, and “ICT skills can be gained with practice”. Here are some examples of students’ responses:

(Public university) It is very easy to find the information I need for my courses via Internet search engines and websites. This search process saves me time and effort, because it takes me directly to the specific information with no time or effort wasted… I prefer to use the Internet and my laptop for learning. The reason for this is that the features of these tools make them easy to use at anytime and anywhere in a day (Interview 1)

(Public university) I find my communication with tutors and classmates is easy and fast through using ICT tools. For example, we use Blackboard, social networking applications and emails for online communication to discuss coursework together, with no time or place limitation… I prefer to use my iPad for learning; it is not complicated and it is easy for me to use (Interview 3)

(Public university) ICT tools are very easy to use; besides, you can find yourself skilled in using ICT with time, since we use it daily and anyway, it is not at all hard to use (Interview 7)

(Public university) These tools facilitate our connection with tutors and assist us in completing our homework and assignments in an easy and flexible way. (Interview 9)

(Public university) PowerPoint and Microsoft Office Word are useful and easy to use for my homework or presentations. In addition to these, software has developed my ICT skills, for example my typing has become faster (Interview 10)

(Public university) ICT tools have helped me to search out information about the course and exchange it with others easily […] when I am off the university campus… When I joined the university, my ICT experience and ICT skills improved because I used them daily for my learning… ICT tools are very important to my learning because they make my learning easy and they are simple to use… In general, ICT has helped to ease my learning, and simplified the effort I spend in doing my coursework (Interview 11)

(Private university) The Internet helps me to complete my homework or assignments in a fast and easy way, since I don’t have to go to the library and spend a lot effort and time searching for the information I need; I can do this when I am at home or in any other location. This is why I like to use these tools in my learning, because they make my learning easy and flexible; they are also easy to use compared to traditional learning tools… I have never faced
any difficulties in using them, as I find ICT tools easy and simple to learn to use with time, although sometimes I feel worried when I face technical errors, because I am not skilled in repairing them (Interview 12)

(Private university) I use the Microsoft Word software for finishing my homework and assignments as I find it very useful for me and it is also easy to use (Interview 13)

I use the Microsoft Office Word software because it is easy for me to use for my coursework since it makes it easy to find my spelling mistakes, and correct them too (Interview 14)

(Private university) I connect to the Internet to search for information about my course. I connect to the Internet using my laptop from any location and at any time I want in an easy and flexible way (Interview 15)

Students’ responses with regard to the ‘ease of use’ of ICT in their learning were found to be positive to strongly positive. This indicates that they have a strong belief that ICT is easy to use in their university learning, since all the interview responses pointed to the fact that ICT is easy for them to use on their courses; ICT skills are easy to improve with time by using them constantly in learning; ICT tools are not difficult to use, and finally, ICT tools assist them in finding information easily from different locations.

4.3 The analysis of question Two

Q2: What are the factors that influence students’ attitudes towards using ICT in their learning at KHEIs?

To answer this question, sub-questions should be answered according to the factors that influence students’ attitudes towards using ICT in their learning.

a) Does the type of university influence students’ attitudes towards using ICT at KHEIs?

In order to answer this question, the means and standard deviations of the responses of students from both universities towards using ICT tools have been analysed, as shown in Table 4.5. The mean of the participants’ responses from the public university is higher than that of the
responses from participants at the private one on ‘usefulness’, ‘ease of use’, and ‘general attitude’. In order to ascertain the statistical difference on this question, an independent sample T-test has been used to analyse the results of this question as it appears in Table 4.5.

Table 4.5: Means and standard deviations of the participants’ responses towards ICT

<table>
<thead>
<tr>
<th>Content of the attitude</th>
<th>n=457) public</th>
<th>n=260) private</th>
<th>T</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Ease of use</td>
<td>4.37</td>
<td>0.51</td>
<td>4.25</td>
<td>0.56</td>
</tr>
<tr>
<td>Usefulness</td>
<td>4.31</td>
<td>0.55</td>
<td>4.16</td>
<td>0.65</td>
</tr>
<tr>
<td>General attitude</td>
<td>4.34</td>
<td>0.49</td>
<td>4.21</td>
<td>0.57</td>
</tr>
</tbody>
</table>

According to the table above, the results show a significant difference between the responses of participants from the two universities; private and public. These differences appear in ‘ease of use’, ‘usefulness’, and ‘general attitude’ towards using ICT tools for the benefit of the public university, since all the T values appear significant at the level $\alpha < 0.01$. The analysis of student interview responses from both the public and private universities regarding the influence of ‘ease of use’ and ‘usefulness of ICT’ on general attitude are explained in detail in Question One.

Although the qualitative data gathered from the interview have supported the quantitative data, regarding the positive attitude of students towards using ICT, students from the public university seem to be more satisfied with what the university offers them in terms of ICT facilities to assist them in their learning. The public university students point to the modern computer laboratories and the ICT clubs available to them, as well as the modern ICT tools provided for their learning.

Here are examples of student responses:

In the College of Science, many computer labs are available, and almost all lectures are presented there. High speed internet is available, which is considered as a good advantage for our learning (interview 1)
One of the factors that positively influence me in using ICT is the availability of computer labs in our college. The labs are open until late afternoon and we can use them any time we want. I stay for hours in the computer lab to finish my assignments or homework, since the computers are updated with the latest versions of software (interview 2)

Our classes are provided with the most modern computers, high quality projectors and high speed Internet… The college also has special rooms for student break times, where we can use multiple ICT tools for fun or learning at the same time (interview 4)

The university has provided us with students’ club rooms, which are full of modern ICT tools to be used for our learning and entertainment. We often gather in these clubs at break times to discuss or to use computers for completing assignments. Besides the computers, high speed Internet is available at all facilities of the college, such as in the library, in coffee shops, in the classrooms as well as in the computer labs, where it is free to use the printer to print our coursework and assignments (interview 6)

For example, the college offers us free tutorials and workshops that introduce us to ICT tools. These workshops are organised with the assistance of experienced students or ICT experts (interview 8).

On the other hand, the private university students have pointed to the lack of computer laboratories as well as the poor printer services, and stated as such in their interviews:

Printers in the computer lab are mostly out of service and not maintained. I also find problems with using the lab computers, which always freeze while I am sending my coursework to the tutor, and this makes me dissatisfied with the ICT tools and services in the university (interview 12)

Things that really make me negative towards using ICT in the university are that the computers are always slow. The computers need to be updated or repaired since they freeze most of the time… Sometimes I need to print my course work or lecture slides, but unfortunately I find the printers out of service, or programmed as default to another printer, which makes me dissatisfied (interview 13)

According to what students refer to in their interviews regarding ICT tools, students at the private and public universities have conflicting responses. The public university students showed their satisfaction with their university’s provision of ICT facilities which in turn effected on their ICT usage and behaviour positively, while the private university students had the opposite response to the ICT facilities in their university, and showed dissatisfaction with them.
b) Does the gender influence students’ attitudes towards using ICT at KHEIs?

In order to answer this question, the means and standard deviations of the responses of students from both private and public universities towards using ICT tools were analysed with regard to gender differences. As shown in Table 4.6 the mean of participants’ responses from amongst the public university males and females is higher than the responses of male and female participants at the private. In addition, the responses from the public university males and females on ‘usefulness’, ‘ease of use’ and ‘general attitude’ were higher than the mean of the responses from participating males and females at the private university. What is more, it appears that the means of male participants’ responses in both universities is higher than the female participants’ responses for both dimensions of attitude and general attitude. Table 4.6 shows the results of analysing this question.

Table 4.6: Means and standard deviations of participants’ responses in both universities towards using ICT, regarding gender differences

<table>
<thead>
<tr>
<th>Contents of the attitude</th>
<th>Male (n = 284)</th>
<th>Female (n = 433)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>public(n=159)</td>
<td>private(n=125)</td>
</tr>
<tr>
<td>Mean</td>
<td>4.42</td>
<td>4.22</td>
</tr>
<tr>
<td>SD</td>
<td>0.49</td>
<td>0.53</td>
</tr>
<tr>
<td>Usefulness</td>
<td>4.40</td>
<td>4.18</td>
</tr>
<tr>
<td>Mean</td>
<td>0.53</td>
<td>0.61</td>
</tr>
<tr>
<td>SD</td>
<td>4.30</td>
<td>4.32</td>
</tr>
<tr>
<td>General attitude</td>
<td>0.49</td>
<td>0.53</td>
</tr>
</tbody>
</table>

For ascertaining the differences which appear between the means of students’ responses from the two universities towards the content of attitude regarding gender differences, the MANOVA test was used for the factors of group (Public and Private) and gender (male and female), based on the Wilks Lambda Test, in order to determine the significance of the differences between the level of student response towards the combined contents of attitude, in relation to gender differences. According to Table 4.7, it would clearly appear that there are significant differences at the level $\alpha < 0.05$ between the means of responses towards the combined contents of attitude,
regarding the factors of group and gender. On the other hand, the results show there is no significant difference regarding the interaction between the two factors of gender and group.

**Table 4.7:** Results of the MANOVA test for the differences between the responses towards the combined contents of attitude, according to the factors of group and gender

<table>
<thead>
<tr>
<th>Factor</th>
<th>F</th>
<th>Df1</th>
<th>Df2</th>
<th>p.value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group</td>
<td>7.321</td>
<td>2</td>
<td>71200</td>
<td>0.001</td>
</tr>
<tr>
<td>Gender</td>
<td>3.808</td>
<td>2</td>
<td>712.00</td>
<td>0.023</td>
</tr>
<tr>
<td>Group*Gender</td>
<td>1.822</td>
<td>2</td>
<td>712.00</td>
<td>0.162</td>
</tr>
</tbody>
</table>

Regarding the factor of group, it appears from the above analysis that the differences between the means of responses from both universities participants are to the benefit of the public university. Regarding gender differences, all the significant differences between the contents of attitude with regard to the differences of the gender variable are ascertained through the use of an independent sample T-test. According to Table 4.8, it appears there are significant differences at level $\alpha < 0.05$ between the means of the public university responses to ‘usefulness’ and ‘general attitude’. By referencing Table 4.6, it appears that these differences result in a benefit to the male students, while the results also show that there is no significant statistical difference in the responses of the private university students to the content of attitude, where all the T values appear statistically insignificant at the level $\alpha < 0.05$.

**Table 4.8:** T values and significant levels for differences between the means of student responses from the two universities to content of attitude and general attitude

<table>
<thead>
<tr>
<th>Content of attitude</th>
<th>Public</th>
<th>Private</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>T</td>
<td>P value</td>
</tr>
<tr>
<td>Ease of use</td>
<td>1.627</td>
<td>0.104</td>
</tr>
<tr>
<td>Usefulness</td>
<td>2.559</td>
<td><strong>0.011</strong></td>
</tr>
<tr>
<td>General attitude</td>
<td>2.270</td>
<td><strong>0.024</strong></td>
</tr>
</tbody>
</table>
This result was also supported in the interview responses, where all male students from the public University stated their positive attitude towards using ICT, and its usefulness to their learning in more depth and detail. They commented that “ICT made their learning easy and flexible”; “ICT increased their knowledge and information”; “ICT eased their communication with tutors and classmates”; and “ICT saved time and effort in their learning”. This indicates that male students in the Public University have a more positive attitude towards using ICT in their learning, which influenced their behaviour towards ICT positively. The following are examples of responses from male students in the public university:

(Male student) ICT tools have assisted me a lot in my university learning; these tools are useful for higher education learning and teaching (Interview 3)

(Male student) ICT tools are very important to my learning here in college, and I can’t dispense them from my learning life… The use of the Internet has increased my information and knowledge about the courses I am taking at college, because of all the information I search out and read daily for my assignments… ICT tools make my learning flexible because they help me communicate easily with my classmates and tutors at any time and from anywhere, by using Blackboard and social networking applications, as well as the university email service (Interview 4)

(Male student) The advantage of the social networking applications installed on my smartphone is that they are a useful tool for communicating and learning. They are also free to install and easy to use… These tools eased my communication with my tutors at the first level, since I could receive immediate feedback from them for my coursework or questions, which helped me to accomplish more work in less time (Interview 5)

(Male student) ICT tools are essential to my learning; they have made my learning easy and flexible and saved me time and effort when searching for information about the course. For example, if I am looking for information about my course, I use the Internet, which shows me the specific information I am looking for without wasting time and effort. Imagine if I had searched in the library! I would have wasted plenty of time searching in books. Honestly, I prefer the Internet to the library; it is easier and faster to find any information I want for my learning (Interview 9)
(Male student) [The] software that exists in my laptop, such as PowerPoint and Microsoft Office Word are very useful for my learning because they assist me in finishing my homework and assignments in an easy way without any difficulties. Besides, this software has developed my ICT skills, and English language skills, since I use them more often daily, and it corrects all my spelling mistakes, so I find myself more skilled in ICT use and in the English language (Interview 10)

Despite the positive attitudes of students from both universities indicated in the interview responses, few explained their reasons for not using ICT very often in their learning. These comments could be behind the different response levels in the means, which were revealed in the quantitative results. One female student stated in a comment that the use of ICT for long periods had a negative influence on their eyes, and another student commented that the reason behind not using ICT tools for learning was the tutors in the university. Here are samples of student comments:

(Female student) Books are my first option for studying for my exams. I can’t ignore their role in my learning, especially when the lecturer points to the important notes and pages that we have to study from for our exam (Interview1)

(Female student) A few tutors in my college depend only on the course book in explaining their lectures and for teaching us in the classroom, and so we just use books for studying on their courses (Interview 2)

The female student in the Private University commented that the use of ICT tools in her learning depended on her mood, as well as on the fact that it was simpler for her to study from course books. This student stated:

My use of ICT tools depends on my mood and desire to use them for learning. Sometimes I stay away from using them because I prefer books to learn from. It is clearer and simpler for me to highlight the important sentences in a book with my pencil, and to go back to them again (Interview 13)

A female student from the public university described her experience of using ICT to study for long periods, stating:
Despite ICT tools being useful for my learning, I only spend short and sporadic periods using them for my learning, since I feel these tools have a negative effect on my eyes when I use them for long periods (Interview 8).

The overall analyses of interview responses support the results of the questionnaires concerning the influence of gender on students’ attitudes towards using ICT at both universities. This will be discussed in more detail in the next chapter.

c) **Does the academic discipline influence students’ attitudes towards using ICT at KHEIs?**

In order to answer this question, the means and standard deviations of students’ responses from both public and private universities towards using ICT tools have been analysed with regard to differences in discipline, as shown in Table 4.9. The mean of the participants’ responses from the science disciplines at public university towards ‘usefulness’ and ‘general attitude’ is higher than the mean of responses from participants within the same discipline at the private university, and the responses from amongst the humanities at the public university on ‘ease of use’, ‘usefulness’, and ‘general attitude’ were higher than the mean of the responses from the same disciplines at the private university. Table 9 shows the results of analysing this question.

<table>
<thead>
<tr>
<th>Contents of attitude</th>
<th>Sciences (n = 313)</th>
<th>Humanities (n = 404)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>public(n=178)</td>
<td>private(n=135)</td>
</tr>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Ease of use</td>
<td>4.29</td>
<td>0.57</td>
</tr>
<tr>
<td>Usefulness</td>
<td>4.26</td>
<td>0.60</td>
</tr>
<tr>
<td>General attitude</td>
<td>4.28</td>
<td>0.55</td>
</tr>
</tbody>
</table>

For ascertain the differences which appear between the means of student responses from the two universities to the content of attitude regarding different disciplines, the MANOVA test was used for the factors of group (public and private) and discipline (sciences and humanities), based
on the Wilks Lambda Test, in order to understand the significance of the differences between the level of student response to the combined contents of attitude regarding different disciplines. According to Table 4.10, it is clearly apparent that there are significant differences at level $\alpha < 0.05$ between the means of responses to the combined content of attitude, regarding the group factor and the interaction between the two factors. On the other hand, the results show that there is no significant difference regarding the discipline factor where $f$ is equal to 0.129, which is not significant at the level $\alpha < 0.05$.

**Table 4.10:** Results of MANOVA test for the differences between the responses towards combined contents of attitude according to the factors of group and discipline

<table>
<thead>
<tr>
<th>Factor</th>
<th>F</th>
<th>Df1</th>
<th>Df2</th>
<th>p.value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group</td>
<td>5.289</td>
<td>2.00</td>
<td>712.00</td>
<td><strong>0.005</strong></td>
</tr>
<tr>
<td>Discipline</td>
<td>0.129</td>
<td>2.00</td>
<td>712.00</td>
<td>0.879</td>
</tr>
<tr>
<td>Group* discipline</td>
<td>4.463</td>
<td>2.00</td>
<td>712.00</td>
<td><strong>0.012</strong></td>
</tr>
</tbody>
</table>

In order to determine the significance of the differences for the interaction between group and discipline, a graphic representation has been used to reveal the significance of differences for content of attitude (‘usefulness’ and ‘ease of use’) and ‘general attitude’. See Figures 4.2, 4.3 and 4.4. Looking to the highest means of responses in Table 4.9, it may appear that the public university students from the humanity discipline have a higher attitude score than others, within both universities.
First: ICT ease of use

![Figure 4.2](image1.png)

**Figure 4.2:** Interaction between factors of group and discipline regarding the usefulness of ICT tools

Second: Usefulness of ICT

![Figure 4.3](image2.png)

**Figure 4.3:** Interaction between factors of group and discipline regarding the ease of using ICT tools

Third: General attitude

![Figure 4.4](image3.png)

**Figure 4.4:** Interaction between factors of group and discipline regarding ‘general attitude
The above quantitative data analysis reveals that humanities students from the public university have a higher attitude score for using ICT in their learning, compared with the other participants. The quantitative data result also revealed that the attitude of these students was very much influenced by the ‘usefulness’ and the ‘ease of use’ of ICT in their learning. This result was supported in the interviews, where the humanities students from the public university mostly demonstrated in their interview statements that their university and specifically, the College of Administration science provided them with a high level ICT environment to serve their learning needs. Besides, the college classes are supplied with modern ICT tools to be used for and by the students, as well as teaching from the lecturers. The following are interview responses from the public university students’ from the humanities, namely, the College of Administration science:

I use many ICT tools in my university learning; for example, I use my laptop in order to accomplish the assignments requested of me, and I connect to the Internet regularly to search out information for my courses. I use my university email on a regular basis to contact my tutors and classmates; tutors also connect with us regularly through their university emails, which mostly have lecture slides and notes attached… We use Blackboard based on the tutors’ requests; to check our exam marks. Besides, we use it to connect with our tutors about coursework and homework, and we receive immediate feedback from them (Interview 3)

The same student above also explained in their own words, the ‘usefulness’ and ‘ease of use’ of ICT tools in their learning, stating:

ICT tools have simplified my university learning. I use ICT tools to communicate easily with my classmates, whether we are inside or outside the classroom. ICT is considered as essential to my daily learning, because it makes my communication with others easier, with no wasted time or effort.

Another student from the same college at the public university, asked about why ICT was important to his university learning, he stated that those tools are easy and helpful for communicating with others; this was his response in the interview:
ICT tools assist me in accomplishing more coursework in a limited time. ICT tools also simplify and ease communication with my classmates by using social networking applications, such as Twitter or WhatsApp on our smartphones, and creating chat rooms to discuss course work in groups, with no distance or time limitation. These applications are very easy and helpful to use in our university learning (Interview 4).

Most students from the College of Administrative Science at the public university expressed their satisfaction with the college’s provision of ICT tools and environment to serve their learning needs. They state in their interviews that these tools introduced to them were useful to their learning because they saved time and effort, and were easy to use for connecting with others. Here are examples of interviews responses:

I use different ICT tools in my learning, because I find them useful to me when I want to start any assignment or homework… I send my coursework to my tutor using the university email, which is very useful in saving my time and effort for other learning responsibilities… ICT tools have bridged the gap between my tutors and classmates and myself, since we can exchange and share information anywhere and at any time of day… The use of the internet has increased my knowledge and information, by enabling me to search and read plenty of information for my courses (Interview 6).

ICT tools are easy to use, and you can be skilled in using them with time… ICT tools are useful to my learning, since they save my time and effort and develop the way I think in my learning. Besides, they have changed the way I learn, since I am more reliable in my learning and more of a self-learner, which has helped me to become more effective in discussing with others in the classroom (Interview 7).

The Internet plays an important role in my university learning. The use of the Internet has saved me time as well as increasing my knowledge on my courses, and updates it constantly… ICT assists me in finishing my homework easily, compared to other learning tools. In addition, it makes my communication with my classmates and tutors easy and fast, with no time or location limitation (Interview 8).

The above comments are examples of interview responses from students at the College of Administrative Science at the public university in Kuwait. These responses indicate that the ‘usefulness’ of ICT and ‘ICT ease of use’ are positive, and positively influence their attitude towards using ICT, which in turn influenced their behaviour towards ICT in positive way. At the same time, students’ responses from interviews show that most of them are very satisfied.
with what the college provides them in terms of an ICT environment, such as high quality ICT tools in classrooms, ICT club rooms, ICT tutorials to develop skills and experience and good Internet service and support. These factors indicate that the college is strongly interested in utilising ICT in students’ learning, even though none of the students from other disciplines at both universities the private and public have shown the same level of satisfaction. Here are some of the interview responses provided by the public university students from the humanities:

The positives that encourage us to use ICT tools here in the college are the physical and mental effort that the college spends to provide us with a good ICT environment full of modern ICT equipment and tools; for example the classrooms and computer labs are provided with the latest computers and printers as well as high speed Internet. Besides, the lecturers encourage us to utilise ICT in our learning… the college provides us with the student club rooms, where modern ICT tools are available to use for learning or entertainment during break times. These rooms are available in this college only and students can meet to share their experiences and knowledge of ICT (Interview 3)

My college is concerned with utilising ICT in students’ learning, alongside the tuition. Our classrooms are equipped with high quality brands of computers, modern projectors and high speed Internet in all university facilities; these tools have made communication between us and our lecturers much easier (Interview 4)

ICT clubrooms are available at our college, and this feature is available only in the College of Administrative Science. The students’ club rooms are provided with the latest desk computers, printers, projectors and other ICT tools for students’ learning and entertainment use. Besides, ICT tools are available in the university library, restaurants and coffee shops. This has enabled me to feel flexible in sharing information and materials for learning with my classmates and lecturers at any time of day (Interview 6)

Computer labs are equipped with modern technology and computers; printers are also available to use free of charge. Besides, I have never found any problems in downloading learning materials onto my laptop or smartphone, since the internet speed is considered as high… The IT support team are ready to help us if any unexpected technical problem occurs; their contact number is displayed in all classrooms and clubrooms (Interview 7)
The most encouraging aspect that makes me use ICT tools in my learning is the support and encouragement I receive from the lecturers in my college. Another thing is that tutorials are also offered to us and the lecturers here in the college. These are very useful in developing our ICT experience, ICT skills and building our confidence in using ICT in our university studies (Interview 8).

The qualitative data from the interviews shows that the ‘usefulness’ and ‘ease of use’ of ICT have influenced the public university students from the college of administration science more than any of the others, and this was evident from their comments throughout the interviews. Moreover, the responses of these students revealed that they were satisfied with what the college had presented to them in terms of ICT facilities and services to assist their learning. This indicated a positive attitude that they maintained towards using ICT, compared with others in the sample with less positive behaviour towards ICT. However, the quantitative data from questionnaires revealed no effect of the academic discipline factor on students’ attitudes to using ICT, which means that no significant relationship exists between the discipline factor and students’ attitudes to ICT. On the other hand, a significant relationship was found to exist between the factors ‘ease of use’, and ‘usefulness’ of ICT, and ‘student attitudes’. Results will be discussed in detail in the next chapter.

d) Does the language of learning influence students’ attitudes to using ICT at KHEIs?

In order to answer this question, the means and standard deviations of the responses of students from both public and private universities to using ICT were analysed with regard to the different languages of study, as Table 4.11 illustrates. The mean of participants’ responses from amongst students at both universities studying through the medium of the English language to the ‘ease of use’, ‘usefulness’ and ‘general attitude’ is higher than for the responses of those studying in both Arabic and English in both universities.
Table 4.11: Means and standard deviations of participants’ responses at the Public and Private universities towards using ICT, regarding differences in the language of study

<table>
<thead>
<tr>
<th>Content of attitude</th>
<th>Arabic (n = 17)</th>
<th>English (n = 431)</th>
<th>Arabic &amp; English (n = 269)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>pubic (n = 13)</td>
<td>private (n = 4)</td>
<td>public (n = 212)</td>
</tr>
<tr>
<td></td>
<td>M  SD</td>
<td>M  SD</td>
<td>M  SD</td>
</tr>
<tr>
<td>Ease of use</td>
<td>4.21 0.54</td>
<td>4.45 0.47</td>
<td>4.39 0.51</td>
</tr>
<tr>
<td>Usefulness</td>
<td>3.96 0.77</td>
<td>4.03 0.67</td>
<td>4.34 0.54</td>
</tr>
<tr>
<td>General attitude</td>
<td>4.09 0.64</td>
<td>4.24 0.43</td>
<td>4.36 0.49</td>
</tr>
</tbody>
</table>

For verifying the differences which appear between the means of students’ responses from the two universities to the content of attitude regarding different languages of study, the MANOVA test was used for the factors of group (public and private) and the language of study (Arabic, English, both) based on the Wilks Lambda Test, in order to discover the significance of the differences between the level of student response to the combined contents of attitude regarding differences in the language of study. According to Table 4.12, it is clear that there are significant differences at the level $\alpha < 0.05$ between the means of responses to the combined contents of attitude regarding the language of study factor. On the other hand, the results show that there are no significant differences regarding the group factor or the interaction between the two factors, where $f$ is not significant at level $\alpha < 0.05$.

Table 4.12: Results of the MANOVA test for the differences between the responses to the combined contents of attitude, according to the factors of group and language of study

<table>
<thead>
<tr>
<th>Factor</th>
<th>F</th>
<th>Df1</th>
<th>Df2</th>
<th>p.value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group</td>
<td>1.018</td>
<td>2.000</td>
<td>710.000</td>
<td>0.362</td>
</tr>
<tr>
<td>Language</td>
<td>3.007</td>
<td>2.000</td>
<td>710.000</td>
<td><strong>0.017</strong></td>
</tr>
<tr>
<td>Group* Language</td>
<td>1.561</td>
<td>4.000</td>
<td>1420.000</td>
<td>0.182</td>
</tr>
</tbody>
</table>
In order to understand the significance of these differences between the mean of students’ responses to the content of attitude with regard to the different languages of study, the one-way ANOVA test was used. As shown in Table 4.13. It appears clearly that there is no difference between the mean of students’ responses to the content of attitude and general attitude related to the language of study, where all the f values for these contents were statistically insignificant at level \( \alpha < 0.05 \).

### Table 4.13: Results of one-way ANOVA for the significance of differences between the mean of students’ responses to content of attitude with regard to differences in the language of study

<table>
<thead>
<tr>
<th>Content of attitude</th>
<th>Source</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ease of use</td>
<td>Between Groups</td>
<td>.117</td>
<td>2</td>
<td>.059</td>
<td>.207</td>
<td>0.813</td>
</tr>
<tr>
<td></td>
<td>Within Groups</td>
<td>202.540</td>
<td>714</td>
<td>.284</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>202.657</td>
<td>716</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Usefulness</td>
<td>Between Groups</td>
<td>1.337</td>
<td>2</td>
<td>.668</td>
<td>1.897</td>
<td>0.151</td>
</tr>
<tr>
<td></td>
<td>Within Groups</td>
<td>251.602</td>
<td>714</td>
<td>.352</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>252.939</td>
<td>716</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General attitude</td>
<td>Between Groups</td>
<td>.520</td>
<td>2</td>
<td>.260</td>
<td>.936</td>
<td>0.393</td>
</tr>
<tr>
<td></td>
<td>Within Groups</td>
<td>198.142</td>
<td>714</td>
<td>.278</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>198.661</td>
<td>716</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As for qualitative data obtained from personal interviews with students at both public and private universities, the data showed there was an agreement in terms of the view that English was the main language used in both university educations. The students’ responses also indicate the importance of English language proficiency to their use of ICT in their university learning, because most of the ICT tools in their universities are available and used in their English language versions. At the same time, the data from the interviews revealed the significant role of ICT in developing English language skills, with students pointing to the usefulness of software such as Microsoft Office and its tools in developing their English writing and reading skills, especially due to the spelling and grammar check features.
However, the students showed in their responses that the English language at this level of education is not considered as a barrier to ICT use, since the students’ English language knowledge had developed during their university education. Besides, students stated that the frequent use of ICT tools had contributed to the development of their English language skills, such as their English reading and writing skills, as well as the role of ICT in increasing their English language vocabulary. The following are examples of students’ responses in the interviews:

(Public university) The use of ICT tools has helped me to improve my ICT skills as well as my English language skills, because all the software we use is in the English version, and most of our courses are introduced in the English language, so this has helped me to develop my knowledge of English and I find my English is better since I joined the university. The reason for this is that I read and listen to lots of learning materials through the Internet, in addition to the software I use to do my assignments, which has developed my English writing skills because of its grammar and spelling tools, which correct my writing errors, and help me to accomplish my assignments in less time (Interview 1)

The English language is not considered as a barrier to using ICT tools in learning. This fact was revealed by the student cited above when he was asked if the study language was considered as one of the obstacles that influenced his use of ICT. He responded thus:

Talking about myself, the English language is not a barrier to me when I use ICT tools, because my education is based on English in most of the lectures, and most of the software I use for my learning is in the English version. As a matter of fact, I think ICT tools have helped to improve my English speaking skills and made me more confident in presenting my course work in English in the classroom.

Another student from the public university pointed to the importance of having knowledge of English to university study, stating that students who do not have this knowledge might be delayed in their coursework, compared to students with a good knowledge of English. The following is one student’s interview response:
The education language here in the College of Science is mainly English; tutors present their lectures in English in the classroom. A lack of English language skills can be one of the barriers that stop students from using ICT in learning here at the college, especially since all courses are taught in English. Besides, our science discipline obligates us to use ICT regularly in order to search for information or write assignments, so the lack of English knowledge may delay students from completing their homework or assignments (interview 11).

Other students from the public university had similarly answered in relation to the learning language in the university and their ICT use. Here are different interview responses from students:

When I first joined the university, my English skills were poor, but because we take most of our courses in English, my English has improved... the available software in my laptop is very helpful for checking my English spelling and grammar mistakes. This feature has helped me improve my English writing skills, compared to my English writing skills when I first joined the university (Interview 3).

I am one of the supporters of English as a medium of university education, since I had all my education in English, and now in my university studies, I have not faced any difficulties in using ICT tools in their English versions (Interview 4).

Talking about the English language in my university learning, I find that the use of ICT requires a good knowledge of the English language, because all the software used here is in the English version (Interview 7).

In the relationship between the education language and students’ ICT use in learning, the responses of the private university students in their interviews were similar to those cited above. Here are some examples of what was said during the interviews:

I think it’s very important to have English language skills in order to deal with ICT tools because it’s the main language used in ICT, and students should have this knowledge to be able to use different ICT tools provided for their learning (Interview 12).

The English language is not considered as a barrier to my ICT use at all. I even think that the ICT tools I have used during my university studies have assisted me in improving my English language skills. For example, the spell check feature in Microsoft Office software has helped me to complete my assignments and homework in accurate English, with no spelling mistakes. Besides, the word processing software provides me with various synonymous words which increase my knowledge of English vocabulary (Interview 13).
By using Microsoft Word software, it is easy to find spelling mistakes and amend them (Interview 14)

Microsoft Word software has had a significant influence on my English language skills, because it marks all the writing mistakes I make while writing assignments. Other tools have also helped me to pronounce words correctly. This is why I find ICT useful in developing my English (Interview 15)

The English language is very important at this stage of learning, since all ICT applications we use for our learning are in their English language versions. It is also the main language of study here in the university (Interview 17)

The students’ responses above showed that the English language is considered as very important for the use of ICT in learning and this result supports what was presented by the questionnaire data result. However, another important result was derived from the students’ interviews, indicating that students had found ICT tools to be useful in improving their English language knowledge, as well as useful in developing their English language skills, besides it encouraged them to use, and behave positively with ICT in learning. These results will be discussed in more detail in the next chapter.

e) Does the ICT experience influence students’ attitudes towards using ICT at KHEIs?

In order to answer this question, the means and standard deviations of the responses from students at both the (public and private) universities towards the content of attitude and general attitude using ICT tools were analysed with regard to differences in students’ experiences, as Table 4.14 illustrates. The means of participants’ responses from amongst the public university students with ‘very good - excellent’ experience and to ‘usefulness’, ‘ease of use’, and ‘general attitude’ is higher than the responses from the private university students. In addition, the responses from students at the public university with good experience and to ‘usefulness’, ‘ease of use’, and ‘general attitude’ registered higher than the mean of the responses from students at the private university. Table 16 shows the results of analysing this question.
Table 4.14: Means and standard deviations of participants’ responses at the (public–private) university to using ICT, regarding the differences in students’ experience

<table>
<thead>
<tr>
<th>Content of attitude</th>
<th>Excellent-Very good (n = 549)</th>
<th>Good (n = 131)</th>
<th>Fair-Poor (n = 37)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>public (n=342)</td>
<td>private (n=207)</td>
<td>Total (n=549)</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>Ease of use</td>
<td>4.43</td>
<td>0.52</td>
<td>4.31</td>
</tr>
<tr>
<td>Usefulness</td>
<td>4.42</td>
<td>0.53</td>
<td>4.26</td>
</tr>
<tr>
<td>General attitude</td>
<td>4.42</td>
<td>0.49</td>
<td>4.29</td>
</tr>
</tbody>
</table>

For investigating the differences which appear between the means of students’ responses from the two universities to the content of attitude regarding differences in students’ level of experience, the MANOVA test was used for the factors of group (public and private) and the students’ experience (Excellent-Very good, Good, Fair-Poor) based on the Wilks Lambda Test, in order to discover the significance of the differences between the level of students’ responses to the combined content of attitude regarding students’ experience. According to Table 4.15, it clearly appears that there are significant differences at level $\alpha < 0.05$ between the means of responses to the combined content of attitude regarding the experience factor. On the other hand, the results show that there is no significant difference regarding the group factor and the interaction between the two factors.

Table 4.15: Results of the MANOVA test for the differences between responses to the combined content of attitude, according to the factors of group and students’ experience

<table>
<thead>
<tr>
<th>Factor</th>
<th>F</th>
<th>Df1</th>
<th>Df2</th>
<th>p.value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group</td>
<td>2.903</td>
<td>2.00</td>
<td>710.00</td>
<td>0.056</td>
</tr>
<tr>
<td>Experience</td>
<td>20.145</td>
<td>4.00</td>
<td>1420.00</td>
<td><strong>0.000</strong></td>
</tr>
<tr>
<td>Group*Experience</td>
<td>1.138</td>
<td>4.00</td>
<td>1420.00</td>
<td>0.337</td>
</tr>
</tbody>
</table>

133
In order to identify the significance of these differences between the mean of students’ responses to content of attitude with regard to students’ different levels of experience, the one-way ANOVA test was used, as is shown in Table 4.16. It clearly appears that there is a significant difference between the mean of students’ responses towards the content of attitude and the general attitude related to the students’ experience, with all the f values for these contents being statistically significant at level $\alpha < 0.01$.

Table 4.16: Results of one-way ANOVA for the significance of differences between the mean of students’ responses to the content of attitude, with regard to differences in the level of experience

<table>
<thead>
<tr>
<th>Content of attitude</th>
<th>Source</th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Usefulness</td>
<td>Between Groups</td>
<td>9,860</td>
<td>2</td>
<td>4,930</td>
<td>18.257</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>Within Groups</td>
<td>192.797</td>
<td>714</td>
<td>0.270</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>202.657</td>
<td>716</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ease of use</td>
<td>Between Groups</td>
<td>24.560</td>
<td>2</td>
<td>12.280</td>
<td>38.392</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>Within Groups</td>
<td>228.379</td>
<td>714</td>
<td>0.320</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>252.939</td>
<td>716</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General attitude</td>
<td>Between Groups</td>
<td>15.965</td>
<td>2</td>
<td>7.983</td>
<td>31.197</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>Within Groups</td>
<td>182.699</td>
<td>714</td>
<td>0.256</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>198.661</td>
<td>716</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In order to prove the bi-differences between the mean of participants’ responses to the attitude content, with regard to differences in experience, the test of Least Significant Difference (LSD) was used and its results are shown in Table 4.17.

Table 4.17: Results of the LSD test for bi-differences between the mean of participants’ responses to the content of attitude for differences in experience

<table>
<thead>
<tr>
<th>Content of attitude</th>
<th>Experience</th>
<th>Good</th>
<th>Excellent-Very good</th>
</tr>
</thead>
<tbody>
<tr>
<td>Usefulness</td>
<td>Good</td>
<td>-</td>
<td>0.18094*</td>
</tr>
<tr>
<td></td>
<td>Fair-Poor</td>
<td>0.28089*</td>
<td>0.46183*</td>
</tr>
<tr>
<td>Ease of use</td>
<td>Good</td>
<td>-</td>
<td>0.39599*</td>
</tr>
<tr>
<td></td>
<td>Fair-Poor</td>
<td>0.15703</td>
<td>0.55302*</td>
</tr>
<tr>
<td>General attitude</td>
<td>Good</td>
<td>-</td>
<td>0.28847*</td>
</tr>
<tr>
<td></td>
<td>Fair-Poor</td>
<td>0.21896*</td>
<td>0.50742*</td>
</tr>
</tbody>
</table>

*: is significant at the level 0.05
According to the analysis in the above table, there are significant differences between the mean of responses from students who have ‘very good- excellent’ experience and the mean of responses from students who have ‘good’ experience towards all contents of attitude and ‘general attitude’. Based on the above Table, Number 4.14, it appears that all these differences are for the benefit of students from both universities who have ‘very good- excellent’ experience.

In addition, the results show that there are significant differences between the mean of responses from students who have ‘very good- excellent’ experience and the mean of responses from students who have ‘fair- poor’ experience towards all contents of attitude and general attitude. Based on the above Table Number 4.14, it appears that all these differences are for the benefit of students who have ‘very good- excellent’ experience.

Finally, the results show that there are significant differences between the mean of responses from students who have ‘good’ experience and the mean of responses from students who have ‘fair’ to ‘poor’ experience to all contents of attitude and the general attitude. Based on Table 4.14, above, it appears that all these differences are for the benefit of students who have good experience. In brief, the results of the above tables could be summarised into the followings points:

- Students with ‘very good- excellent’ experience in using ICT have the highest positive attitude score in relation to using ICT in their learning, compared with other experience groups. Besides, students with ‘very good- excellent’ experience find ICT easy to use as well as useful for their university learning.
• Students with ‘good’ experience in using ICT have a strong positive attitude scores in relation to their ICT use, compared to students with ‘fair- poor’ experience. Besides, these students tend to find that ICT is useful in their university studies, but at the same time, ICT tools are not easy to use for them since they have less experience.

• The general attitude of students who have ‘very good- excellent’ experience and students who have ‘good’ experience of using ICT, scores higher than that of students who have ‘poor- fair’ experience.

As to the qualitative data gathered from the students’ interviews with regard to students’ ICT experience, when students were asked about their ICT experience and where they had gained it, students from both universities agreed in their answers that they had a good level of ICT experience, and this experience was gained during their previous education in schools. Consequently, this experience assisted them in using ICT with ease in their university studies. On the other hand, students revealed that the ICT experience they had when they joined the university was further developed through their regular and constant use of ICT tools during their university courses. another finding arise from the interviews, shows that the regular use of ICT in their university education have developed the students experience in using ICT, and this had a positive influence on their attitudes towards using ICT. Here are examples of what students said on this point in their interviews:

(Public university) We were taught to use ICT in our school education, and so we joined the university with good ICT experience, which was then developed through our intensive use of ICT in the university (Interview 1)

(Public university) all the ICT experience I received is from my previous education in schools where we used to learn about the use of computers and software during computer classes; but when I joined the university it was obligatory to use ICT on all our courses (Interview 10)

(Public university) I find it very easy to use ICT now, since I used it during my previous education in schools (Interview 11)
(Public university) I joined the university with good experience of using ICT, but this experience increased because of the various ICT tools that I use daily in my university learning (Interview 4)

(Public university) I learned to use ICT during my previous education in secondary school and I don’t find it difficult to use (Interview 9)

(Public university) ICT tools are very easy to use. I don’t find them difficult to use in my learning, since I have good experience of how to use specific ICT tools from my previous education in schools (Interview 7)

(Private university) I got my ICT experience and skills from my previous education, but these skills and experience were improved during my learning years in the university because of the regular use of ICT tools (Interview 12)

(Private university) I use ICT tools to a good level and I believe the ICT skills I gained during previous education have developed through my daily use of ICT at university (Interview 14)

(Private university) ICT tools are not complicated to use. Besides, we have good ICT experience and skills gained from our previous education, and this has assisted us in using ICT tools easily in our university education (Interview 16)

Another result was identified from student interviews when they were asked about the negative factors that influence their use of ICT in university learning. Most of the students’ responses from both universities revealed their dissatisfaction with ICT modules on ICT use and skills that the respective universities had introduced into their curriculum. Only two of the private university students showed any satisfaction with those courses. However, the interview responses pointed to the lack of ICT modules presented in the university curriculum, as well as the fact that these modules content were not updated in line with new innovations in ICT, or with the new ICT tools utilised in university education. Students stated that ICT modules were taught to them as a kind of revision of what they had learned about ICT at school. Several replies concerning this point were to this end, and here are examples of such interview responses:
(Public university) ICT modules are considered more on a theoretical basis than on a practical one. Besides, these courses are not updated according to the new ICT innovations that are applied in higher education. For example, when I joined my college, I didn’t have any experience of using Blackboard, but then I got help and support from friends and tutors at the college (Interview 2)

(Public university) I haven’t taken any module on ICT since I joined the university. I consider this to be a negative point, because is essential to us as IT students to get up to date with the latest ICT tools and use them, but unfortunately no modules were taught to us on this during my university education (Interview 11)

(Private university) There is only one module about ICT that is available to us in our university, and this is called CSIS. This module is very basic and is not appropriate for university level; I suggest the university introduces more compulsory ICT theoretical and training courses for all students at all levels of study (Interview 12)

(Private university) It is disappointing to see the lack of ICT modules taught at our university. We cannot depend on our previous ICT experience, because we are introduced to new ICT tools that we haven’t used in school. Besides, I suggest that the university offer compulsory ICT courses as part of the curriculum, as well as updating according to new ICT innovations utilised in higher education (Interview 14)

(Public university) there are only two ICT modules taught to us during our four years of education. These courses are considered as more theoretical than practical, and they do not add new experience to what we have already received earlier. ICT modules in my university are optional, and the contents are not updated in line with the latest technology in higher education. For example it was very difficult for me to use Blackboard, but with self-learning and practice, I learned to use it in my studies (Interview 2)

(Public university) Although I did a useful course on ICT when I first joined the university, it was more to brainstorm the knowledge we had gained in schools. Now in my univesity, many ICT tools are provided for teaching and learning (Interview 4)

The results of interview data analysis show that students have good experience of using ICT. However, this experience was gained from previous education, not from ICT courses offered at university. Other results revealed that students are dissatisfied with the lack of theoretical and practical ICT modules in their educational curriculum, and the modules offered to them are out of date. This will be discussed in more detail in the next chapter.
f) Does the ICT support influence students’ attitudes towards using ICT at KHEIs?

In order to answer this question, the means and standard deviations of the responses of students from both public and private universities towards using ICT tools, and towards the component of attitude were calculated with regard to differences in ICT support, as shown in Table 4.18. The mean of participants’ responses from students at the public university to ‘usefulness’, ‘ease of use’, and ‘general attitude’ is higher than for the responses from the private university students. Table 4.18 shows the results of analysing this question.

Table 4.18: Means and standard deviations of participants’ responses at (Private- Public) university to using ICT, regarding differences in ICT support

<table>
<thead>
<tr>
<th>Content of attitude</th>
<th>Strongly agree - Agree (n = 515)</th>
<th>Neutral (n = 119)</th>
<th>Disagree - Strongly disagree (n = 83)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>public (n = 330)</td>
<td>private (n = 185)</td>
<td>Total (n = 515)</td>
</tr>
<tr>
<td>Ease of use</td>
<td>M 0.46, SD 4.32</td>
<td>M 0.51, SD 4.39</td>
<td>M 0.47</td>
</tr>
<tr>
<td>Usefulness</td>
<td>M 0.50, SD 4.23</td>
<td>M 0.61, SD 4.32</td>
<td>M 0.55</td>
</tr>
<tr>
<td>General attitude</td>
<td>M 0.44, SD 4.28</td>
<td>M 0.53, SD 4.36</td>
<td>M 0.48</td>
</tr>
</tbody>
</table>

For determining the differences which appear between the means of students’ responses from the two universities towards the content of attitude regarding differences in ICT support, the MANOVA test was used for factors of group (public and private) and ICT support (Agree, Neutral, Disagree) based on the Wilks Lambda Test, in order to identify the significance of the differences between the level of student response to the combined contents of attitude, in relation to ICT support. According to Table 4.19, it is clear that there are significant differences between the means of responses towards the combined contents of attitude for the benefit of the public university students. On the other hand, the results show that there is no significant difference
regarding the interaction between the two factors where the f value is equal to 0.782, which is not significant at level of $\alpha < 0.05$.

**Table 4.19:** The results of the MANOVA test for the differences between the responses to combined contents of attitude, according to the factors of group and ICT support

<table>
<thead>
<tr>
<th>Factor</th>
<th>F</th>
<th>Df1</th>
<th>Df2</th>
<th>p.value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group</td>
<td>6.391</td>
<td>2.00</td>
<td>710.00</td>
<td><strong>0.002</strong></td>
</tr>
<tr>
<td>Support</td>
<td>7.874</td>
<td>4.00</td>
<td>1420.00</td>
<td><strong>0.000</strong></td>
</tr>
<tr>
<td>Group*Support</td>
<td>0.782</td>
<td>4.00</td>
<td>1418.00</td>
<td>0.537</td>
</tr>
</tbody>
</table>

In order to identify the significance of these differences between the mean of students’ responses to contents of attitude, with regard to differences in ICT support, the one-way ANOVA test was used, as is shown in Table 4.20. It clearly appears that there are significant differences between the mean of students’ responses to the contents of attitude and the general attitude relating to ICT support; where all the f values for these contents are statistically significant at level $\alpha < 0.01$.

**Table 4.20:** Results of one-way ANOVA for the significance of differences between the mean of students’ responses to the content of attitude, with regard to ICT support

<table>
<thead>
<tr>
<th>Content of attitude</th>
<th>Source</th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Usefulness</td>
<td>Between Groups</td>
<td>7.611</td>
<td>2</td>
<td>3.806</td>
<td>13.931</td>
<td><strong>0.000</strong></td>
</tr>
<tr>
<td></td>
<td>Within Groups</td>
<td>195.046</td>
<td>714</td>
<td>0.273</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>202.657</td>
<td>716</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ease of use</td>
<td>Between Groups</td>
<td>8.220</td>
<td>2</td>
<td>4.110</td>
<td>11.992</td>
<td><strong>0.000</strong></td>
</tr>
<tr>
<td></td>
<td>Within Groups</td>
<td>244.718</td>
<td>714</td>
<td>0.343</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>252.939</td>
<td>716</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General attitude</td>
<td>Between Groups</td>
<td>7.912</td>
<td>2</td>
<td>3.956</td>
<td>14.807</td>
<td><strong>0.000</strong></td>
</tr>
<tr>
<td></td>
<td>Within Groups</td>
<td>190.749</td>
<td>714</td>
<td>0.267</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>198.661</td>
<td>716</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
In order to prove the bi-differences between the mean of participants’ responses towards the attitude content with regard to ICT support, the LSD test was used and its results are shown in Table 4.21.

**Table 4.21: Results of the LSD test for the bi-differences between the mean of participants’ responses to the content of attitude for differences in ICT support**

<table>
<thead>
<tr>
<th>Content of attitude</th>
<th>Support</th>
<th>Neutral</th>
<th>Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Neutral</td>
<td>-</td>
<td>0.20636*</td>
</tr>
<tr>
<td></td>
<td>Disagree</td>
<td>0.05059</td>
<td>0.25695*</td>
</tr>
<tr>
<td>Usefulness</td>
<td>Neutral</td>
<td>-</td>
<td>0.21905*</td>
</tr>
<tr>
<td></td>
<td>Disagree</td>
<td>0.04300</td>
<td>0.26204*</td>
</tr>
<tr>
<td>Ease of use</td>
<td>Neutral</td>
<td>-</td>
<td>0.21271*</td>
</tr>
<tr>
<td></td>
<td>Disagree</td>
<td>0.04679</td>
<td>0.25950*</td>
</tr>
<tr>
<td>General attitude</td>
<td>Disagree</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

*: is significant at level 0.05

According to an analysis of the above table, there are significant differences between the mean of responses from students who indicated a ‘neutral’ level of agreement about ICT support and the mean of responses from students who indicated an ‘agree’ level of agreement about ICT support to all contents of attitude and general attitude. Based on the above Table, Number 4.18, it appears that all these differences are for the benefit of students who indicated an ‘agree’ level of agreement over ICT support. Furthermore, the results show that there are significant differences between the mean of responses from those who gave an ‘agree’ level of agreement over ICT support, and the mean of responses from students who gave a ‘disagree’ level of agreement over ICT support to all the contents of attitude and general attitude. Based on the above Table, Number 4.18, it would appear that all these differences are for the benefit of students who gave an ‘agree’ level of agreement over ICT support. In brief, the results of the above tables could be summarised into the following points:
• The factor of ICT support positively influences the attitudes of students at both, the public and private universities towards using ICT, as well as the two factors, PEOU and PU.

• The PEOU and PU factors positively influence the attitudes of students at both universities (public-private) towards using ICT.

As for qualitative data obtained from personal interviews with interviewees at both the public university and the private university, the data show that students from both universities have different points of view regarding the level of ICT support they receive in their universities. However, students from both universities agreed regarding to the support and help they get from their peers and friends in the university. The public university students agree in their responses that they receive support mainly from tutors, and pointed to the support they also get from their friends in the computer laboratories and and student clubs available at their university. At the same time, students from the public university indicated that there were a few tutors who were not interested in using ICT with them, and these lacked experience and interest in using ICT because they came from an older generation. Moreover, the students expressed their dissatisfaction with the teaching methods of these tutors, whom they considered to be traditional, and their dissatisfaction with the lack of ICT support from the IT department at the public university, despite the various modern ICT tools available. The following are examples of students’ statements:

(Public university) Tutors encourage us to use ICT consistently. They allow us to use our laptops or smartphones for learning activities inside the classroom, and they communicate with us through different ICT tools… I find tutors here helpful when we face difficulties with ICT use, but to be honest, there are still a few members of the older generation amongst the tutors who prefer to use traditional methods of teaching (Interview 1)

However, the same student had different responses concerning the role of the IT department and their support, stating:
From my point of view, the support I get from the IT team in my university is fair. I can see that the lab computers are maintained regularly, as well as being updated with the latest versions of software, despite these computers being old and in need of replacement.

The student evaluated the level of support with the word ‘fair’, which basically meant he was not really happy with the support he received from the IT team. Moreover, another student agreed about the role of tutors in supporting students, and revealed another source of ICT support. The following is his interview response:

Unfortunately, not all tutors use ICT tools for teaching or for communicating with us. There are a few who use the whiteboard and marker for explaining things on the courses. Those tutors are older and I think they lack ICT experience. However, it is encouraging to see many tutors with good ICT experience and also a good attitude, since they utilise different ICT tools in communicating with us as well as teaching us. I also consider this to be very encouraging to us for using ICT … When I face a problem with ICT during my work in the computer lab, and can’t get support quickly from the IT team, my friends in the lab support me with the experience they have, since they are senior students and in their final year of study; they have also faced the same problems with ICT before (Interview 2)

More responses were gathered from the public university students regarding tutors and IT team support, which mostly agreed on the role of tutors, the IT team and their friends in supporting them in their ICT use. Here are examples of what was said in their interviews:

The new generation of lecturers are well experienced in ICT; they always support us and encourage us to use different ICT tools for our coursework. Alternatively, there are the older generation lecturers who have never used ICT for teaching us… the support we get for any ICT problem comes from our friends in the college or the learning club room, where students from all years and with different levels of experience gather. However this is the only source of support we get when the tutors and IT team are busy and unable to help us (Interview 3)

Most of the lecturers in our College of Administrative Science are young in age, as well as being experienced in using ICT, since they received their higher education at foreign universities and so they have used various kinds of technology for their learning. Those lecturers are helpful for any enquiries about the use of ICT in learning … From time to time, after work hours; we can’t get support from the IT team, so we ask for support from friends or classmates in the learning club room (Interview 4)
Unfortunately, we are not allowed to get any software we need from the IT department; we only use the software already installed in the computer labs. This is unhelpful and delays my learning since I spend more time in the lab finishing my homework while I could do it at home if I had the software on my laptop (Interview 5)

My friends always support me if I face difficulties in using ICT…One of the motivating points that makes me engage with ICT tools in learning is the way our lecturers encourage us to use those tools inside and outside the classroom, beside they regularly depend on PowerPoint slides and the Internet in presenting their lectures, which encourages us to use them too (Interview 9)

At the same time, students from the private university in Kuwait were also found to be dissatisfied with the IT support they received from the IT team and department, and this was obvious from their interview answers when they were asked about the factors with negative impact on their ICT use at the university. The students’ answers showed their agreement over the lack of paper for printers in the computer laboratories, whenever they desperately needed to print their coursework and learning materials. Moreover, students revealed their dissatisfaction with the printers and computers available in the Laboratories; the reason for their dissatisfaction was the slowness or failure of the IT team in repairing such ICT tools regularly. In general, the private university students’ answers in their interviews showed a variety of opinions regarding the support they receive from tutors and the IT team at their university. However, the interview data did not reveal any information about the ICT support they received from friends at the private university. The following shows examples of interviewees’ answers:

(Private university) Talking about myself, I had a lot of support from my tutors in terms of how to use Moodle in my learning when I joined the university (Interview 12)

Although the student was very happy with the support he had received from his tutors, he showed his dissatisfaction with IT services overall at the private university. The student complained about the slow procedures for repairing ICT tools when damaged, as well as the lack of paper provided for printing coursework. The student said:
Sometimes, the computers in the lab freeze, and this delays me from sending my coursework to the tutor’s e-mail address. I feel disturbed when it happens repeatedly because I get an error message and the computer freezes. This makes me feel uncomfortable about using those computers and I prefer to use my laptop instead. Another negative point is about the printers which are provided to serve student learning; they are mostly out of service and lack paper. Besides, they are rarely to be found repaired by the IT team.

Other students responded with a similar point of view on the support they got from tutors, the IT team, and the IT department at the private university. Here is what was said in their interviews:

I find my tutors very helpful to me when I ask them how to use Moodle or other ICT tools. They support me whether we use ICT tools inside or outside the classroom. In addition, they encourage us to use computers and the Internet as well as Moodle for on-going learning…Computers in the labs need to be updated and repaired because they crash and stop working most of the time. Besides, the IT team services are very slow, which delays me in finishing my coursework…I would say the same about the printers, since they are always out of order, or programmed as a default to another printer out of the lab. To be honest, I feel dissatisfied with the IT team’s support here in my university (Interview 13)

The fact that the our tutors encourage us to use ICT tools both inside and outside the classroom has affected us positively and we use them intensively, because the tutors have offered us their experience and support, showing us the features of using ICT tools for learning (Interview 14)

I feel dissatisfied with the support I get from the IT team, and with their failure to maintain the printer in the computer lab, which is always out of service or lacks paper (Interview 15)

For example, the printers in the computer labs are always out of service and also lack paper; this bothers me a lot and distracts me from using ICT sometimes (Interview 16)

Generally, the analysis of the interviews with regard to ICT support revealed the fact that both universities students got most support and encouragement from their tutors, since all interviewees agreed on the role of tutors in supporting and encouraging them to use ICT tools, whether inside or outside the classroom. However, a few interviewees from the public university revealed that they did not find this support or encouragement from the older tutors. The reason for this is due to the rejection or resistance of the older generation of lecturers at the public university to using ICT in their teaching or student learning, although the university
provides various ICT tools for the learning and teaching process. Besides, the public university students revealed that another source of support in their university consisted of their friends in the computer laboratories, as well as in the learning club rooms available at their college. This result shows the role of peer learning and students communication at the university in exchanging ICT support and experience. On the other hand, the private university interviewees did not mention tutors from an older generation using traditional teaching methods at their university, and this could be because the public university offers students more ICT facilities, compared with the ICT facilities at the private one.

Meanwhile, an analysis of interviews also revealed the lack of ICT support that students receive at both (public and private) universities. This result was observed in most of the interviewees’ responses, which agreed over poor or absent support from the IT team in terms of ICT tool amendments, for example, in relation to computers and printers in the computer laboratories. Conversely, the public university students revealed in their interviews that they generally found the support and help they needed from their friends in computer rooms and in the students’ clubs. At the same time, the private university interviewees did not volunteer any information about support from their friends, or the availability of study or club rooms. However, more details will be discussed in the next chapter regarding tutor support, IT support, support from friends (peer learning) factor, which emerged from the analysis of the interviews.

4.4 The analysis of question Three

*What is the relationship between students’ attitudes towards ICT, and their ICT engagement while studying at KHEIs?*

In order to investigate the relationship between students’ attitudes towards using ICT and their ICT usage or behaviour in their learning, the Pearson Correlation Coefficient was used to reveal
the correlation between students’ attitudes in both universities on the one hand, and the students’ ICT use in learning. On the other, an analysis of data indicated that a positive correlation existed between students’ attitudes and their use of ICT. This correlation amounted to 3.2, which is statistically significant at level 0.05. Table 4.22, shows the results of the statistical analysis.

Table 4.22: The result of the correlation test between students’ attitudes and the use of ICT in the public university (N = 457) and the private university (N= 260)

<table>
<thead>
<tr>
<th>University name</th>
<th>Attitude</th>
<th>ICT use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public</td>
<td>Pearson Correlation</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>457</td>
<td>457</td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>.315**</td>
<td>1</td>
</tr>
<tr>
<td>ICT use</td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>457</td>
<td>457</td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>1</td>
<td>.315**</td>
</tr>
<tr>
<td>Private</td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>260</td>
<td>260</td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>.315**</td>
<td>1</td>
</tr>
<tr>
<td>ICT use</td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>260</td>
<td>260</td>
</tr>
</tbody>
</table>

Furthermore, in order to find the level of ICT use amongst both universities students, the means and standard deviations of the responses of students from both universities (private- public) to all the statements relating to the level of ICT tool use in the study were analysed. According to Table 4.23, the mean of the responses of the public university students to these statements is 3.71, with a standard deviation of 0.65, while the mean of the responses from the private university students is 3.85, with a standard deviation of 0.71. This indicates that the mean of the private university students’ responses and the mean of the responses from the public university students are positive to the level of ICT tool use in their study. For further explanation, Table 4.23 shows the results of the statistical analysis.
Table 4.23: Means and standard deviations of all responses to the paragraphs relating to the level of ICT tools use in the study

<table>
<thead>
<tr>
<th>Level of daily use of ICT tools in the study.</th>
<th>Public university (n = 457)</th>
<th>Private university (n= 260)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td></td>
<td>3.71</td>
<td>0.65</td>
</tr>
</tbody>
</table>

For more illustration, the pie chart is used below to show the means of all responses to the statements relating to the level of ICT tool use in the study, as shown in Figure 4.5.

Figure 4.5: Means of the responses from the two groups regarding the use of ICT tools

In order to obtain responses from students at each university for each statement on using ICT tools in daily life, the means, frequencies and percentages for responses from public and private universities students are calculated as follows:

4.4.1 First: The results relating to responses from the public university students

According to the results in Table 4.24, the responses from the public university students show that the statement “I use the internet to search for information for assignments or homework” was ranked highest, with a mean value of 4.51, where a number (283) of students with a percentage of 61.9 % gave answers that indicated a daily use of the Internet in their studies. Moreover, 133 students gave answers that indicated their weekly use of the Internet in their studies, with a percentage of 29.1%. In addition, the number of students whose responses
indicated their monthly use of the Internet amounted to just 33 students, with a percentage of 7.2%. The responses of the public university students show that the statement “I use mobile technology to discuss coursework with others” was ranked second, with a mean value of 4.49, where a number (302) of students with a percentage of 66.1%, gave answers that indicated their daily use of mobile phones in their studies. 111 students gave answers that indicated their weekly use of a mobile in their studies – a percentage of 24.3%, while, finally, the number of students whose responses indicated their monthly use of a mobile came to just 21, with a percentage of 4.6%.

The responses from the public university students show that the statement “I use my laptop or PC to finish assignments” was ranked third, with a mean value of 4.38, and where a number (247) of students with a percentage of 54% gave answers that indicated their daily use of a laptop in their studies. In addition, 165 students gave answers which indicated their weekly use of a laptop in their studies, with a percentage of 36.1% and lastly, the number of students whose responses indicated their monthly use of a laptop totalled just 24, with a percentage of 5.3%. On the other hand, responses from the same university students showed that the statement “I use an interactive whiteboard in the classroom” ranked lowest, with a mean value of 2.49 and where a number (81) of students with a percentage of 17.7%, gave answers that indicated their daily use of an interactive whiteboard in their studies. This result indicates that most public university students do not use the interactive board in their university education.
<table>
<thead>
<tr>
<th>No.</th>
<th>Paragraph</th>
<th>Public university (n = 457)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>M</td>
</tr>
<tr>
<td>1</td>
<td>I use online library resources (databases, journals, e-books, etc.)</td>
<td>3.47</td>
</tr>
<tr>
<td>2</td>
<td>I use social networking websites (Facebook, Messenger, etc. to discuss coursework with others)</td>
<td>3.71</td>
</tr>
<tr>
<td>3</td>
<td>I use emails to discuss my coursework</td>
<td>3.82</td>
</tr>
<tr>
<td>4</td>
<td>I use mobile technology to discuss coursework with others</td>
<td>4.49</td>
</tr>
<tr>
<td>5</td>
<td>I use iPhone social video communication (Skype, Tango, etc.) to discuss coursework with others</td>
<td>2.93</td>
</tr>
<tr>
<td>6</td>
<td>I use PC social video communication (Skype, etc.) to discuss coursework with others</td>
<td>2.99</td>
</tr>
<tr>
<td>7</td>
<td>I use a VLE (Blackboard, WebCT, Moodle, etc.) to submit assignments</td>
<td>3.81</td>
</tr>
<tr>
<td>8</td>
<td>I use a VLE (Blackboard, WebCT, Moodle, etc.) to access online materials.</td>
<td>3.85</td>
</tr>
<tr>
<td>9</td>
<td>I use a VLE (Blackboard, WebCT, Moodle, etc.) to check tutors’ notes</td>
<td>3.88</td>
</tr>
<tr>
<td>10</td>
<td>I use email or text to contact tutors online</td>
<td>3.78</td>
</tr>
<tr>
<td>11</td>
<td>I use the Internet to search for information for assignments or homework</td>
<td>4.51</td>
</tr>
<tr>
<td>12</td>
<td>I use iPad functions and features to complete assignments, or to discuss coursework with others</td>
<td>3.26</td>
</tr>
<tr>
<td>13</td>
<td>I use my laptop or PC to finish assignments</td>
<td>4.38</td>
</tr>
<tr>
<td>14</td>
<td>I use software, such as Microsoft Word, PowerPoint, Excel, SPSS, Photoshop, etc., to complete assignments</td>
<td>4.26</td>
</tr>
<tr>
<td>15</td>
<td>I use an interactive whiteboard in the classroom</td>
<td>2.49</td>
</tr>
</tbody>
</table>
4.4.2 Second: The results relating to responses from the private university students

According to the results in Table 4.25, the responses from the private university students show that the statement “I use my laptop or PC to finish assignments” was ranked number one, with a mean value of 4.59 and where a number (189) of students with a percentage of 72.7% gave answers that indicated their daily use of a laptop in their studies. Moreover, 51 students gave answers indicating their weekly use of a laptop in their studies, with a percentage of 19.6%. In addition, the number of students whose responses indicated their monthly use of a laptop amounted to just 11, with a percentage of 4.2%.

The responses of the same university students show that the statement “I use software such as Microsoft Word, PowerPoint, Excel, SPSS, Photoshop, etc. to complete assignments” ranked second, with a mean value of 4.53 and where a number (180) of students at a percentage of 69.2%, gave answers that indicated their daily use of software in their studies. Furthermore, 54 students gave answers that indicated their weekly use of software in their studies, with a percentage of 20.8%. Finally, the number of students whose responses indicated their monthly use of software came to just 17, with a percentage of 6.5%.

The responses of the same university students also show that the statement “I use mobile technology to discuss coursework with others” lay in third place, with a mean value of 4.38, and where a number (171) of students with a percentage of 65.8% gave answers that indicated the daily use of a mobile phone in their studies. What is more, 66 students gave answers indicating their weekly use of a mobile in their studies, with a percentage of 25.4%. In addition, the number of students whose responses indicated their monthly use of a mobile totalled just 8, with a percentage of 3.1%.
Table 4.25: Means, frequencies and percentages for responses from the private university students to statements relating to the level of ICT tools use in the study

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I use online library resources (databases, journals, e-books, etc.)</td>
<td></td>
<td>3.44</td>
<td>12</td>
<td></td>
<td></td>
<td>56</td>
<td>21.5</td>
<td>56</td>
<td>74</td>
<td>28.5</td>
<td>70</td>
<td>26.9</td>
<td>48</td>
<td>18.5</td>
<td>12</td>
</tr>
<tr>
<td>2</td>
<td>I use social networking websites (Facebook, Messenger, etc.) to discuss coursework with others</td>
<td></td>
<td>4.05</td>
<td>7</td>
<td></td>
<td></td>
<td>153</td>
<td>58.8</td>
<td>44</td>
<td>16.9</td>
<td>23</td>
<td>8.8</td>
<td>4</td>
<td>1.5</td>
<td>4</td>
<td>13.8</td>
</tr>
<tr>
<td>3</td>
<td>I use emails to discuss my coursework</td>
<td></td>
<td>4.20</td>
<td>6</td>
<td></td>
<td></td>
<td>125</td>
<td>48.1</td>
<td>91</td>
<td>35</td>
<td>28</td>
<td>10.8</td>
<td>1.5</td>
<td>4.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>I use mobile technology to discuss coursework with others</td>
<td></td>
<td>4.49</td>
<td>3</td>
<td></td>
<td></td>
<td>171</td>
<td>65.8</td>
<td>66</td>
<td>25.4</td>
<td>8</td>
<td>3.1</td>
<td>3.5</td>
<td>2.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>I use iPhone social video communication (Skype, Tango, etc.) to discuss coursework with others</td>
<td></td>
<td>3.43</td>
<td>5</td>
<td></td>
<td></td>
<td>94</td>
<td>32.7</td>
<td>63</td>
<td>22.2</td>
<td>29</td>
<td>11.2</td>
<td>3.5</td>
<td>2.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>I use PC social video communication (Skype, etc.) discuss coursework with others</td>
<td></td>
<td>2.97</td>
<td>14</td>
<td></td>
<td></td>
<td>75</td>
<td>35.8</td>
<td>40</td>
<td>31.5</td>
<td>40</td>
<td>15.4</td>
<td>15.4</td>
<td>4.2</td>
<td>36.2</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>I use a VLE (Blackboard, WebCT, Moodle, etc.) to submit assignments</td>
<td></td>
<td>3.72</td>
<td>9</td>
<td></td>
<td></td>
<td>72</td>
<td>27.7</td>
<td>111</td>
<td>42.7</td>
<td>35</td>
<td>13.5</td>
<td>6.2</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>I use a VLE (Blackboard, WebCT, Moodle, etc.) to access online materials.</td>
<td></td>
<td>3.82</td>
<td>8</td>
<td></td>
<td></td>
<td>88</td>
<td>33.8</td>
<td>102</td>
<td>39.2</td>
<td>29</td>
<td>11.2</td>
<td>6.9</td>
<td>18.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>I use a VLE (Blackboard, WebCT, Moodle, etc.) to check tutors’ notes</td>
<td></td>
<td>3.52</td>
<td>11</td>
<td></td>
<td></td>
<td>83</td>
<td>31.9</td>
<td>82</td>
<td>31.5</td>
<td>31</td>
<td>11.9</td>
<td>6.2</td>
<td>18.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>I use email or text to contact tutors online</td>
<td></td>
<td>3.72</td>
<td>9</td>
<td></td>
<td></td>
<td>88</td>
<td>33.8</td>
<td>80</td>
<td>30.8</td>
<td>50</td>
<td>19.2</td>
<td>14.7</td>
<td>5.4</td>
<td>10.8</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>I use the Internet to search for information for assignments or homework</td>
<td></td>
<td>4.47</td>
<td>4</td>
<td></td>
<td></td>
<td>166</td>
<td>63.8</td>
<td>64</td>
<td>24.6</td>
<td>21</td>
<td>8.1</td>
<td>1.9</td>
<td>1.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>I use iPad functions and features to complete assignments, or to discuss coursework with others</td>
<td></td>
<td>3.53</td>
<td>10</td>
<td></td>
<td></td>
<td>93</td>
<td>35.8</td>
<td>72</td>
<td>27.7</td>
<td>31</td>
<td>11.9</td>
<td>3.5</td>
<td>21.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>I use my laptop or PC to finish assignments</td>
<td></td>
<td>4.59</td>
<td>1</td>
<td></td>
<td></td>
<td>189</td>
<td>72.7</td>
<td>51</td>
<td>19.6</td>
<td>11</td>
<td>4.2</td>
<td>1.2</td>
<td>2.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>I use software such as Microsoft Word, PowerPoint, Excel, SPSS, Photoshop, etc. to complete assignments</td>
<td></td>
<td>4.53</td>
<td>2</td>
<td></td>
<td></td>
<td>180</td>
<td>69.2</td>
<td>54</td>
<td>20.8</td>
<td>17</td>
<td>6.5</td>
<td>1.2</td>
<td>2.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>I use an interactive whiteboard in the classroom</td>
<td></td>
<td>3.28</td>
<td>13</td>
<td></td>
<td></td>
<td>95</td>
<td>36.5</td>
<td>42</td>
<td>16.2</td>
<td>32</td>
<td>12.3</td>
<td>8.5</td>
<td>26.5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The results of the quantitative data gathered from the questionnaires, regarding the relationship between students’ attitudes and their ICT engagement, in addition to the ICT tools most frequently used in their daily learning, is summarised into the following points:

- A significant relationship exists between the attitudes of students and their ICT engagement in their learning. According to Pearson’s Correlation, the relationship between attitude and ICT use amounts to 3.2, this indicates a moderately positive relationship between the two variables.
- Although the results show that students at public and private universities demonstrate positive levels of daily ICT use in their studies, the mean value in the private university students’ responses was slightly higher than the public university mean value.
- The Internet is considered as the most used ICT learning tool at the public university, while the interactive whiteboard and social video communication are considered to be the least used ICT learning tools in both universities. However, the results show that the laptop is the most commonly used ICT learning tool amongst students studying at the private university.
- The data reveals that mobile and its technology considered as a common ICT learning tool at both universities.

The results of the qualitative data gathered from interviews support the results from the quantitative data gathered using questionnaires. Students from both universities discussed the various ICT tools they used in their daily studies. For example, the public university interviews revealed that most students used the Internet, mobile technologies and laptops for their daily learning. Students stated that the Internet was useful for saving time and effort when searching for information for their coursework. In addition, mobile technology assisted them in communicating with their classmates and tutors to discuss learning matters and homework easily.
through social networking applications, such as Twitter and WhatsApp, where they can chat in groups with no limitation as to time or distance. Students also pointed to their use of laptops in their daily learning, since these possess all the features they need to assist them in doing their coursework. The following are examples of interviewee statements:

I use the Internet as part of my daily learning; I consider it to be my main source for finding information for my coursework…Sometimes I use 3 devices at the same time for studying, for example I use my laptop, smartphone and Internet, all in one place (Interview 1)

I consider my laptop and smartphone to be the main learning tools for my education, since I can use them to connect to the Internet at any time, and because they are portable, easy to carry and have useful features, such as the Microsoft Office package and social networking applications, which assist me in communicating with our tutors and in completing my coursework easily and in a flexible way (Interview 2)

I use many ICT tools for learning; for example, I use my laptop to accomplish my assignments and homework. In addition, I connect to the Internet regularly using my laptop and smartphone to search for information for my courses (Interview 3)

As a university student, I consider the best ICT tool to use in my learning is the laptop, because it is helpful in completing homework and assignments, as well as being easy to use and carry… I use the Internet regularly and this has helped me gain more knowledge and information than I used to have on my courses (Interview 11)

As for the interviewees from the private university, most of them revealed that the ICT learning tool they used most on a daily basis for their learning was the laptop, as well as the useful software available on PCs and laptops. They considered such software as very useful in assisting them with coursework and homework. Moreover, some of the interviewees pointed to their use of social networking applications on their smartphones, which helped them to communicate with each other easily and at any time of day to discuss homework and assignments. The following are the private university interviewee responses:
I use my laptop for my daily learning because of its various functionalities compared with other devices; for example, the software on my laptop is very useful and easy to use. Besides, the feature of screen size and clarity help me to finish homework quickly and easily (Interview 15).

I spend 5-6 hours daily using my laptop to finish my coursework or assignments. I consider my laptop to be my main useful learning tool because of its features; for example, the size of the screen and the software available assists me in finishing my homework easily... Social networking applications available on my smartphone have become very important in my daily learning; moreover, the WhatsApp application gives us the opportunity to chat in groups as well as to share lecture slides and other learning materials at the same time (Interview 14).

I daily use laptop software, such as Microsoft Word, Excel and PowerPoint to complete my assignments and homework (Interview 12).

The laptop is the main ICT tool for my daily learning because it has many features that assist me in my learning; for example, the Microsoft Office package software helps me to finish my coursework easily... I also use the WhatsApp application on my smartphone to share information about the course with my classmates. For instance, this term I joined 2 groups of classmates to discuss coursework and assignments. However, tutors communicate with us through Moodle, just because it is considered as a more formal ICT tool (Interview 17).

4.5 Summary

The analysis of quantitative and qualitative data in this chapter indicates a positive attitude amongst students towards the use of ICT for learning at both public and private universities, and according to the TAM model, which is adopted as the framework of this study; the results reveal that students’ attitudes are influenced by two components: EOU and U of ICT. Moreover, the results of the data also reveal important factors that influence students’ attitudes towards using ICT in their learning. These factors include the type of university, gender, discipline, study language, students’ ICT experience and the ICT support available at the universities. At the same time, an analysis of data will show a moderately positive relationship between students’ attitudes and students ICT use in their learning. Besides the above, the data demonstrate that the Internet is the most used ICT learning tool at the public university on a daily basis, while the
laptop is the most used ICT learning tool used at the private university, with mobile phones being considered as an ICT learning tool common to both universities. The qualitative results therefore support the quantitative results of the study, and further results have arisen from the qualitative data analysis, which will be discussed in more detail in the next chapter.
Chapter Five: Discussion of Qualitative and Quantitative results

5.1 Introduction

This chapter presents the mixed results (qualitative and quantitative) for the study, in accordance with data collected from both the tools used (questionnaire and interviews) on the study sample as part of the methodological procedures for the study. The sample was chosen from the public and private universities in Kuwait.

It is worth mentioning here that the discussion of the results pertains to the questions posed by the study, which must be answered in order to address the research questions and achieve its aims. The main aim of the current study is to critically investigate students’ attitudes towards using ICT within HEIs in Kuwait. In addition, it aims to identify the factors which influence students’ attitudes towards using these ICT tools in their learning. Moreover, the study aims to investigate the relationship between students’ attitudes and ICT engagement with regard to learning in KHEIs. Based on this, the study questions were addressed using questionnaires to obtain quantitative data, in addition to the qualitative data gathered from interviews. Qualitative data is known to have value in gaining in-depth information to support quantitative data.

Based on the argument presented above in response to the study questions, the aims will be achieved on the basis of data received from analyses of both quantitative and qualitative data. The study questions to be addressed as follows:

1. What are the attitudes of students towards using ICT in their learning at KHEIs?
2. What are the factors that influence students’ attitudes towards using ICT in their learning at KHEIs?
3. What is the relationship between students’ attitudes towards, and their use of, ICT in learning at KHEIs?
In this chapter, each question will be discussed separately, in accordance with the qualitative and quantitative data gathered from the questionnaire and interviews. Next, a critical review of the gathered data will be produced to connect the results of the study with the literature review, in a way which either supports or rejects the results attained. At the end of this chapter, conclusions and recommendations drawn from the current study will be stated, based on the discussion of the results and for future study in the same field.

5.2 Discussing the results of Question One, namely:

What are the attitudes of students towards using ICT in their learning at KHEIs?

The analysis of the quantitative results of Question One indicates that the attitudes of KHEI students towards using ICT generally appear to be positive at both the public and the private universities. However, students’ attitude in the public university had stronger positive attitudes comparing to the attitude of students in the private university. Moreover, the results of Question One indicate that the PEOU and PU factors have a strong positive influence on public university students’ general attitudes towards using ICT in learning, where the mean value of the students’ responses in the public universities towards the PEOU factor is 4.37, compared to 4.31, which is the mean value of their responses towards PU. On the other hand, the mean value of the private university students’ responses towards the PEOU factor is 4.25, and 4.16 towards PU. Therefore, the positive attitude of students has formed a positive behaviour towards ICT, and accordingly they were motivated to use ICT in their learning.

Looking at the mean values mentioned above it revealed that students’ responses towards the PEOU and PU factors are generally positive. In addition to this, the results indicate a certain degree of compatibility between the rankings of student responses to specific statements on the
PEOU and PU of ICT in their learning, demonstrating a significant influence of these factors on students’ attitudes towards the use of ICT in learning at both universities.

As for the qualitative results revealed by the interviews with the students, it was found that they support the quantitative results from the questionnaire. Furthermore, the results of the quantitative data show that students from both universities generally have positive attitudes towards using ICT, based on the fact that the students’ responses at both universities are in accordance with some of the statements related to the PEOU and PU of ICT. Students’ responses in their interviews indicated that ICT tools made learning easier, as well as facilitated their communication and the learning process with their classmates and tutors, both outside and within the university campus. Furthermore, the qualitative results indicated that ICT tools are significant in terms of increasing the information and knowledge that students receive during their university education, and encouraging them to be more interactive as daily learners with respect to the PU factor. Concerning the PEOU factor, the qualitative data analyses indicated student agreement over common answers regarding the PEOU of ICT tools in daily learning.

The results of the qualitative data analyses show that ICT tools make the learning process more flexible for students and enabled them to study at anytime and anywhere outside the university campus. Therefore, the results of the qualitative data analysis positively support the results of the quantitative data analysis, pertaining to students' attitudes towards using ICT tools at both universities. In addition, it is worth drawing attention here to the fact that modern university students are more likely to be attracted to technology and the development of ICT skills, so they find it easier to accommodate and appreciate technology-based education, compared with more traditional learning approaches. These days, most students use ICT tools on a daily basis for the sake of communication, entertainment and education.
Along the same lines, Selwyn and Clarks (Selwyn, 2010; Clarks, 2006) mention that ICT plays an important role in students’ daily lives, since such students are considered as so-called ‘digital natives’ who have grown up using different technological resources. The connection between the modern student and ICT tools is simply strong and unbreakable as these tools are used during their early stages of development, which then helps students formulate attitudes towards ICT tools. Kabiac (2010) stated that the use of ICT from an early age can help develop a positive attitude towards ICT in learning. Furthermore, the results of the current study show complete symmetry with the results of other studies in the same field, especially Ngai et al. (2007), Park (2009), Sumak et al. (2011), Teo (2008), Gill and Dalgarno (2008), Abdalla (2007), Rob et al. (2012), Edmunds et al. (2012) and Porter and Donth (2006), who have revealed that students’ attitudes in higher education colleges are positive towards using ICT tools and in turn, these attitude factors appear to positively affect students.

5.3 Discussion the results of Question two, namely:

What are the factors that influence students' attitudes towards using ICT in their learning at KHEIs?

The second question implies six sub-questions related to the effect of certain factors on students' attitudes towards using information and communication systems in learning. These factors consist of: type of university, gender, academic discipline, language of study, and experience in using ICT, and ICT support. The questions will be discussed in order, accordingly.

5.3.1 The first sub-question

a) Does the type of university influence students' attitudes towards using ICT at KHEIs?

The quantitative analysis results relating to the first sub-question indicate that the type of university will influence students' attitudes towards using ICT at KHEIs. The results revealed
significant differences in students' attitudes at both the private and the public universities towards using ICT in their university learning. The average general attitude towards using ICT amongst students at the public university amounted to 4.34 and the average of general attitude for students at the private university amounted to 4.21, this indicates that students' attitudes at the public university towards using ICT are strongly positive than at the private university. With respect to the factors comprising general attitude (PEOU and PU), the quantitative results indicate the presence of statistically significant differences regarding students' attitudes towards these factors. These differences were in favour of the public university students, where the average response towards the PEOU factor amounted to 4.37, with 4.31 towards the PU factor. With respect to students at the private university, the results indicated that their average attitude towards the PEOU factor amounted to 4.25, with 4.16 towards the PU factor. These results demonstrate that the PEOU and PU factors strongly influence students' attitudes at the public university towards the use of ICT. However, the same factors do not appear to strongly influence the private university students' attitudes towards using ICT in their university learning.

With respect to the qualitative results which were generated by the interviews, students' attitudes in both universities were indicated as generally positive, as their answers were consistent, given that these tools facilitate the learning process, and through them, learning may occur in many different locations and become more flexible. Moreover, the qualitative results indicated that students at both universities agreed on the usefulness of ICT tools for daily learning in terms of facilitating the process of communication beyond the university, thus helping them to build knowledge and making learning easier. The interview results also indicated that the public university students had the benefit of training courses and workshops offered by the university to develop their expertise in using ICT, and they used modern ICT tools in their learning, as well as sharing their ICT experiences by attending computer laboratories or the student ICT Clubs.
available in their university. This had led to enhanced attitudes towards using ICT tools in learning and driven attitudes in a positive direction. Furthermore, the public university interview results indicated that students felt satisfied regarding the ICT features and tools offered them by their university; we note that most of their responses include the word ‘satisfaction’. In this regard, the qualitative results support the quantitative results regarding the reasons behind enhanced levels of positive student attitude at the public university, compared to those of students at the private university. However, with respect to the private university students, the qualitative analysis results reveal that the students do not have sufficient ICT services in their daily learning, where results indicate that the private university students feel dissatisfied with the ICT tools and services offered them by the university to serve their learning. Therefore, most of their students’ responses involved the word ‘dissatisfaction’ with reference to the ICT tools available and the poor maintenance of same on the part of the university, thus leading to fewer positive attitudes towards using ICT.

The variation in results regarding the level of positive student attitude towards using ICT at both the public and private universities, as well as the higher level of positive student attitude at the public university towards using ICT, than was the case amongst the public university students, may be justified by the greater experience of the public university students in using ICT, compared with the private university students, as explained in the sample description in the Chapter Three. In addition, this may be due to provisions for ICT implementation to meet the requirements of the public university students, which benefit students at the university on a daily basis. An example of these, as outlined by their students in the interviews, are the ICT Club, where students can discover and share the latest ICT tools, and wherein the students meet during their leisure time, or in case of need, to complete their homework or assignments while on the university campus; as well as the availability of several computer laboratories equipped with the
latest ICT tools provided by the university to serve students’ learning at the public university in Kuwait.

The reason may also be due to the free training courses offered by the public university, involving specialist ICT institutions and companies. These courses contribute to developing students’ skills and experience of using ICT in learning, and are discussed in an analysis of demographic and experiential factors in the sample described in Chapter Three. The ICT features and facilities at the public university in Kuwait have resulted in the establishment of ICT infrastructure, founded by the university administration and based on progressive funding offered by the Government of the State of Kuwait, whereby significant sums of money have been spent to employ ICT in learning and teaching within Kuwaiti public learning institutions.

In this respect, Selwyn (2008) reports that students’ attitudes towards using ICT varies from one educational institution to another, based on the existing factors in each educational institution. As is clear from the results, the ICT potential in the public university in Kuwait receives more consideration than it does at the private university in Kuwait. Moreover, Fu (2013) suggests that the more frequently the latest ICT features and facilities become available for students at the university, in addition to providing them with the support needed, the more students benefit from and use ICT, with the result that their positive attitudes to applying these tools in their learning are increased. The current study’s results are not consistent with the studies conducted by Rodríguez (2006) and Al-Doub, Goodwen and Al-Henaiyyan (2008), which aimed towards identifying students' attitudes towards using ICT at public and private educational institutions in Kuwait. Their results reveal that private university students have more positive attitudes towards using ICT in learning, when compared with public university students.
5.3.2 The second sub-question

b) Does the gender influence students’ attitudes toward using ICT at KHEIs?

The results of the quantitative data analysis indicate that gender factors influence students’ attitudes towards ICT and their attitudes therefore vary according to gender. The results indicated the presence of significant differences between students’ attitudes towards using ICT at the one public university and the private university in Kuwait, depending on the gender factor. These differences are in favour male students at both universities. However, another result shows that males at the public university have the most positive attitude amongst the student groups examined within both universities the (public and private), since the mean value of their general attitude amounts to 4.41, whilst the mean value of the general attitudes for male students at the private university amounts to 4.32. Furthermore, the results show the presence of significant differences between students’ attitudes towards the PU factor, this difference being in favour of male students at the public university students, which means that male students at the public university have a strongest positive attitude towards using ICT in learning, and their attitudes are strongly influenced by the PU of ICT. However, male students at the private university in Kuwait appear to have a less positive attitude towards using ICT, and their attitudes are not influenced by either the PU or PEOU factors.

The strong positive levels relating to male students’ attitudes towards using ICT in both universities, compared to the female students, may be justified by taking into account the nature of male students interesting to the use of ICT as well as they are heavier user to ICT compared to female (Reinen and Plomp, 1996; Volman and Eck, 2001), which may make them more interested in using ICT in their daily lives, and more skilful in terms of the techniques for applying these tools. Their attitudes are consequently more positive towards using these tools in their learning. These findings are confirmed by the qualitative results of the interviews in this
study, which indicate that female students tend not use ICT in their learning as often as males do, and their use of ICT depends on their mood, or else by being requested to use ICT by the tutors, rather than being self-motivated. They reported a preference for learning directly from books because this does not have such a negative effect on the eyes. Female students therefore appeared to concentrate more on the negative side of ICT, in comparison with the male students in their interviews.

The higher positive results relating to the attitudes of male students at the public university in comparison with the male attitudes at the private university may be justified by the fact that the public university students have more potential, facilities and features dedicated to implementing ICT than do students at the private university. It must also be borne in mind that male students in Kuwait spend more time on the university premises. Therefore, they benefit more from these facilities than do the female students, who tend to go home straight after lectures due to their greater domestic commitments and responsibilities, typical in Gulf and Arabic culture. Their attitudes towards ICT in learning are likely to be less positive as a result of this reduced contact.

Moreover, another reason may that the majority of students who enrol in specialised evening ICT workshops to develop their ICT skills after finishing their formal lectures and formal study, or those who participate in presenting workshops related to ICT in the evening, are often male. From my perspective, the reason may actually be the inappropriate timing of these workshops and lectures as far as female students are concerned, since females generally have more domestic commitments and responsibilities in Kuwaiti culture, as mentioned above. Consequently, they cannot stay in the university for long periods of time after the end of lectures. Hence, we see that males share their ICT experience and acquired new skills which makes them more confident in using ICT and this in turn is reflected in their view of the ease with which such tools may be
used and their usefulness in their daily learning. In this regard, Cooper (2006) outlined the prevailing belief that males are more interested and more skilful in using ICT, compared with females. Therefore, they are more capable of using ICT tools, which reflects positively on their attitudes towards using them in learning.

The results of the current study are consistent with other previously reported research (Stephens and Creaser, 2002; Dourb, 2004; Wu and Chou, 2011; Cheng et al., 2011; Kubiatko, 2010; Erdogan et al., 2008) that have aimed to identify the effect of gender on students' attitudes towards using ICT in learning. The results of these studies revealed that males have more positive attitudes towards using ICT, when compared to females. Moreover, some results highlighted the effect of PEOU and PU factors on students' attitudes. However, the current results differ from those achieved in studies by Al-Musawi and Abdul-Raheem (2005), Shehab (2007), Haywood et al., (2004) and Fleming (2005), wherein the findings indicated that the gender factor has no effect on students' attitudes towards using ICT in university-based learning, since male students' attitudes do not differ from female students' attitudes in terms of using ICT.

5.2.3 The third sub-question

c) Does the academic discipline influence students' attitudes towards using ICT at KHEIs?

The results of the quantitative data analyses indicate that the factor of academic discipline does not influence students' attitudes towards using ICT in learning. The results revealed that no statistically significant differences were found between students' attitudes in general and the academic discipline factor, suggesting that this factor did not influenced students' overall attitudes towards using ICT tools. However, the results revealed the presence of statistically significant differences in the interaction between the groups of students in both universities and academic discipline; these differences were in favour of the public university students studying...
Administrative Sciences. This result shows that Administrative Science students at the public university are significantly influenced by the PEOU and PU factors. However, students' attitudes amongst the Sciences themselves were not influenced by the academic discipline concerned. This result indicated that the Administrative Science students at the public university had a more positive attitude towards the PEOU and PU of ICT in their daily leaning, but these factors did not influence students in other departments, such as Computer Science and Computer Engineering at the public university. In other words, the results indicated that the public university students studying Administrative Science had more positive attitudes towards using ICT in their learning, i.e. towards both the PEOU and PU factors, in comparison with the attitudes of students enrolled in other disciplines at both universities.

As to the qualitative data analyses, the results demonstrate that Administrative Science students at the public university had a more positive attitude towards using ICT, compared with the private university students taking the same discipline, and with the Computer Science and Computer Engineering students at both universities. All their responses during the interviews indicated greater positivity towards the ease of use and usefulness of ICT tools in university studies. Furthermore, the qualitative results indicate that Administrative Science students feel satisfied with what has been provided for them by their faculty in terms of the latest ICT tools and facilities within the university to support learning and teaching. All their responses praised the faculty’s role in providing rooms equipped with the latest ICT tools (the ICT Club room), which were used by the students to study or to entertain during spare time at the university, and this contributes to the sharing of students’ ICT experience and skills, and peers learning leading to a promotion in the level of positive attitude towards ICT, compared with other students from the same discipline in the private university, or from the scientific disciplines at both colleges. The Science students (Computer Science and Computer Engineering) at the public university
highlighted in their interviews the lack of modern ICT tools within computer laboratories and classrooms. Moreover, the private university interview results indicated dissatisfaction regarding what was offered them by the university in terms of ICT because of the presence of just two computer laboratories, as well as the lack of maintenance services for out-of-order facilities in these laboratories. Hence, all the above-mentioned factors have led to the forming of less positive attitudes amongst students towards using these tools in their studies.

The result which pointed to a higher level of positive student attitude amongst those enrolled in Administrative Sciences at the public university than that of other students in both universities, may be justified by the provision of ICT features and potential for Administrative Science students at the public university in Kuwait. In addition, it may be due to the actual application of ICT tools in learning and teaching within the college, wherein an adequate infrastructure and ICT environment have been made available thanks to the financial support received by the Department of Administrative Sciences at the public university, and from commercial companies and banks in Kuwait. Through this support, the computer laboratories were established and equipped with up-to-date ICT tools, in order to appropriately facilitate students’ learning with such tools, as well as enabling them to communicate with their peers and teachers in the university.

Furthermore, the Department of Administrative Sciences at the public university in Kuwait encouraged the use of ICT and peers learning and the exchange of ICT experience between students, by establishing the ICT Club rooms for students, which is equipped with the latest ICT tools for both learning and leisure within the faculty, and this plays a key role in facilitating the sharing of ICT-related experience and skills. Furthermore, the encouragement received by students from their tutors within the College of Administrative Sciences regarding the use of
available ICT tools for learning purposes, such as for accomplishing assignments, as well as for sending them, has motivated students to use these tools, as well as forming a positive attitude towards their use. In this respect, Sutherland (2009) suggests that the availability of the necessary potential and ICT tools for students within the university, alongside their frequent use in daily learning, may lead to the formation of positive attitudes amongst students toward their use. In the same respect, Kubiatco (2010) also pointed out that the most important factor adversely influencing students' attitudes towards using ICT is the lack of ICT tools within the university, as well as the potential difficulty of implementing ICT tools when the need arises during studies.

Nevertheless, the main result, which shows that students' attitudes are not influenced by academic discipline, may be justified by the fact that university study currently requires students from all disciplines to use ICT tools in their learning as well as to communicate with course tutors, whether on or off the university campus. In particular, this communication is required in universities that apply ICT within the learning and teaching process. Universities in Kuwait are among the first universities to implement the policy of using ICT in their education within various academic disciplines and for communication between students and tutors for learning purposes and have therefore provided the latest ICT tools in all university facilities and classrooms. The other reason may be attributed to the fact that the university's students concerned belong to a generation of Internet and technology users, whereby they cope with and use many ICT tools, whether for entertainment, learning or communication. Therefore, their continuous use and connection with these tools due to their role in facilitating communication and learning, or because of their usefulness in facilitating the learning process, as well as saving time and effort for students, has led to a more advanced experience of them. Hence, such students become more confident and positive about using ICT in learning, which explains the
absence of difference in attitude between students from different disciplines at both universities, with regard to its use in general.

The current study result is consistent with those released by Meerza (2008) which aimeded to identify the effect of the academic discipline factor (Scientific or Literary) on student and teacher attitudes towards using ICT in learning. Moreover, the study revealed that there are no significant differences between students’ attitudes towards ICT and the academic discipline factor. However, the current study's result is inconsistent with those of Teo (2008), Mahmood (2009) and Erdogan et al. (2008), which aimed to identify the effect of the academic discipline factor on students' attitudes towards ICT. Their results reveal that students' attitudes towards ICT do in fact vary according to academic discipline. Furthermore, their studies reveal that students from amongst the Science disciplines had a more positive attitude towards ICT than students from literary disciplines.

5.3.4 The fourth sub-question

d) Does the language of learning influence students’ attitudes toward using ICT at KHEIs?

The results of the quantitative data analysis relating to the effect of the language of study on students' attitudes towards using ICT indicated that the language of study does indeed influence students’ attitudes towards using ICT. The results revealed the presence of statistically significant differences in student attitude towards the language of study. Furthermore, the results showed that students who received learning through the medium of the ‘English language’ at both universities (public and private), have a strong positive attitude towards using ICT in their studies, compared to students who study purely through the medium of ‘Arabic’, or in both ‘Arabic and English’, where the mean value of the general attitudes for students learning through the medium of English at the public university amounts to 4.36, with 4.24 for the private
university students. These average values are the most positive compared to the average values of the other two groups. Moreover, the results indicated that there is no effect of PEOU or PU factors on students' attitudes toward using ICT, since the result did not revealed statistical significance between these factors and general attitudes amongst students in terms of the language factor. In other words, the result indicated that receiving learning through the English language positively affects students' attitudes but not through the factors of PEOU and PU. Apparently, there may be some factors that positively influence student’s attitudes towards using ICT, but which have not been tested in the current study.

As for the qualitative analysis, the results indicated that students do not consider the English language as a barrier to using ICT in their studies. The interview results also indicated that the continuous use of ICT in students’ daily learning contributed to an improvement in their English language knowledge and skills. In addition, the results of the interviews indicated that the Internet and Microsoft Office software used on a daily basis by students for the completion of coursework and assignments have contributed to improved English language levels, due to the language proofing feature available in the programmes. Furthermore, reading directly from the Internet, which provides a vast amount of information in English, has contributed to the development of English reading skills, as well as increased their English vocabulary and information, making students more confident in their daily learning, and in accomplishing and discussing their tasks. In other words, the effect of using ICT tools on developing students’ English language skills, and increasing their confidence in learning, becomes apparent. Therefore, the role of ICT in KHEIs is not only confined to facilitating the learning and communication process; the ICT role can extend to enhancing students’ English skills and vocabulary.
This result of the study may be justified by the fact that English is undoubtedly the international language of ICT. In addition, mastering English language skills, along with acquiring ICT skills, is considered by the learner as one of the fundamentals for success in using ICT in learning. According to the New London Group (1996), English language knowledge combined with ICT skills are required for student engagement with the digital world. However, if the student lacks the English language skills, then language will indeed be considered as a barrier, hindering the use of ICT in students’ learning. Given that the public university relies on the English language for some areas of instruction, if not all, and that private university has basically adopted the American education system, with English being considered as the main language of instruction, students at both universities do not encounter any difficulties using it in their university-based learning. Their attitudes towards using ICT in English are therefore positive. In this respect, Tinio (2002) stated that the international language of ICT is English. Therefore, the lack of skills in this language amongst students is considered as an obstacle to the use of ICT in learning.

The results in the current study regarding the effect of the language of study on students’ attitudes towards ICT are consistent with studies conducted by Buarki (2010) and Kirkup and Li (2007) who reveal that language has a significant influence on students’ attitudes towards using ICT in learning. Besides, the lack of sufficient knowledge of the English language can result in negative attitudes towards using ICT, with the reverse also being true.

5.3.5 The fifth sub-question

e) Does the ICT experience influence students' attitudes towards using ICT at KHEIs?
The results of the quantitative analysis indicated that the ICT experience factor has an influence on students’ attitudes towards using ICT at both universities. Significant differences were found between student attitudes at both universities towards the components of attitude and the experience factor. The results also indicate that students’ attitudes vary according to their level of ICT experience. The results show that students with ‘Very good - Excellent’ and ‘Good’ experience in ICT, have more positive attitudes towards using ICT than do students with ‘Poor - Moderate’ experience.

Moreover, the results indicated the presence of significant differences between students’ attitudes towards the factors, PEOU and PU, depending on their level of experience. These differences were always in favour of students who were more experienced in using ICT in their studies. The results showed that the PU factor positively influenced the general attitude of students with ‘Very good – Excellent’ and ‘Good’ experience in both universities. However, the PEOU factor only influenced the attitudes of students with ‘Very good – Excellent’ experience. In other words, the results indicated that the general attitudes of students with ‘Very good – Excellent’ experience were positively influenced by the factors, PU and PEOU in both universities. However, the general attitude of students with ‘Good’ experience in both universities was influenced by the PU factor, but PEOU had no such influence. It could be gathered from these results that students with ‘Good’ experience found ICT tools useful for their learning, but at the same time, encountered difficulties when using them due to their inexperience.

With respect to the qualitative data analysis, the results demonstrate that students at both universities had ‘Good’ experience in using ICT, as described by some students in their personal interviews. Furthermore, the results indicate that the students gained this experience from their
previous education in school, as well as by sharing experience with peers within the computer laboratories or within the ICT Club allocated for student meetings within the College of Business Administration at the public university. Furthermore, the results showed that the public university students feel dissatisfied with the ICT modules offered by the university as part of the curriculum. The results indicate that the public university students have not benefited from these modules, due to their content being out of date and the failure to upgrade them in line with the university’s introduction of new ICT Tools.

The results also indicated that the students need practical courses related to the field of ICT, since the theoretical courses introduced by the university are of no benefit if not followed up by practical training in using new ICT tools for university-based learning. This result supports the outcomes of the sample description analysis in Chapter Three, wherein most of the students at both universities responded that their experience in ICT was gained from two sources, namely self-learning and previous learning at school, and therefore, ICT modules offered in their university education had not added any new experience or knowledge. However, a few students at both universities declared they had benefited from the ICT modules offered by the university.

The above results could be attributed to the fact that students with ‘Very good - Excellent’ and ‘Good’ experience possessed more ICT skills and knowledge than did other students with ‘Poor – fair’ experience. In addition, such students declared that they felt more confident when using ICT tools in their learning. Therefore, this was reflected positively on their attitudes towards using ICT in university-based learning. However, with respect to the students with ‘Good’ experience, who encountered difficulties when using ICT tools in their university-based learning, the reason would appear to be their lack of ICT experience and skills. This has led to difficulties in using ICT tools, and decreased their confidence with them. As a result, these
students need to build up their ICT experience so as not to encounter any difficulties while using ICT tools in learning.

In this area, Kubiatko (2010) and Pittard, Bannister and Dunn (2003) have reported that students’ ICT experience previously attained in education remains with them till the university-based learning stage. Hence, these experiences explain students' positive attitudes towards using ICT in university-based learning. In the same domain, Taylor and Todd (1995) have reported that students' experience in using ICT is relatively affected in different ways, according to how far the PEOU and PU factors affect their daily learning. The current result, in terms of the positive influence of the ICT experience on the attitude factors PEOU and PU, is consistent with Sayel and Rahman’s (2003) study findings, which aimed to identify the effect of experience on students’ attitudes towards ICT, and this by using TAM. The result of the above revealed that students' attitudes towards ICT were affected purely by the PU factor.

The current study result, in terms of the effect of experience on students' general attitudes towards using ICT, is consistent with Fleming (2005), Teo (2008), Cheng (2011), Kubiatko (2010), Hu and McGrath (2011), Shehab (2007), Al-Musawi and Abdul-Raheem (2005) and Meerza’s (2008) findings, which aimed to identify the effect of the experience factor towards using ICT on students' general attitudes. The results of their studies revealed that the experience factor has a positive effect on students' attitudes towards using ICT in university-based learning.

5.3.6 The sixth sub-question

f) Does the ICT support influence students’ attitude towards using ICT at KHEIs?

The results of the quantitative analysis relate to the influence of ICT support on students’ attitudes towards using ICT indicated that the support factor has a positive influence on students'
attitudes towards using ICT in learning. A significant difference was found between students’ attitudes towards the PEOU and PU factors, depending on the level of ICT support, and these differences were in favour of the group of students who responded with ‘Agree - Strongly agree’ in both universities, with regard to receiving ICT support from the university.

Concerning the groups of students who responded with ‘Neutral’ and ‘Disagree - Strongly disagree’ over the issue of ICT support provided for them at their university, the result indicated that they had less positive attitudes than did the first group. In addition, the PEOU and PU factors did not appear to influence their attitudes towards using ICT in their learning. In other words, the results show that the attitudes of students who agreed they had received ICT support from their universities were more positive than those of the groups of students who responded with ‘Neutral’. Moreover, their attitude was positively influenced by PEOU and PU. However, the students who ‘Disagreed” over the ICT support they had received from their universities had the least positive attitudes towards ICT and were not influenced by the PEOU or PU factors.

Given the source of support for students at either university, revealed by analysing the sample description in Chapter Three, we note that the tutors were the first source of ICT support for the public university students. Furthermore, the second source of support was friends and family. On the other hand, friends and family were the first source of support for the private university students, while the second source of support was the course tutors. On the other hand, the IT support team were ranked lowest in this area by both the public and private universities students.

As to the analysis of the qualitative data, the interviews indicated that the public university students received support for ICT use from the tutors and their friends within the university. The results showed that the public university tutors encourage students to use all the available ICT tools for learning and communication, including the social networking applications which
connect students with course tutors outside the university campus. The results also indicated that the public university students received support from their friends in the computer laboratories and the ICT Clubs, where students support each other by sharing their experience and providing assistance related to ICT problems. However, the results also revealed that the role of the IT team in supporting the students at public university is very limited and the students do not feel completely satisfied with the support they receive from this IT team within the university.

With respect to the private university students, the results indicated that students receive limited ICT support from their tutors and communicate with them solely via the university email service, and then only during working hours. Moreover, the results show that the role of the IT team at the private university is completely non-existent in terms of support for students regarding the use of ICT within the university.

The result of this study could be explained by students at university level using multiple ICT tools in their learning and daily communication, both amongst themselves and with their tutors, or for accomplishing many of their assignments and research tasks while on campus. This requires the provision of adequate support for students, meeting the necessary requirements of all parties within the university, either through the IT team, the tutors or the university administration. Hence, the availability of support will encourage the students to use ICT and to use various ICT tools to facilitate the learning process by saving time and effort. Therefore, this will result in positive attitudes being developed towards the use of these tools in learning. However, the lack of support for students, whether by the course tutors or the IT team within the university, may affect the students' learning process and therefore result in the formation of negative attitudes towards the use of ICT in learning.
In this respect, Fu (2013) and Selwyn (2008) pointed to the importance of technical support as one of the most significant and fundamental external factors in influencing students' attitudes and their use of ICT in learning. Furthermore, Concannon, Flynn and Campbell (2005) suggested that the support factor provided by course tutors in encouraging students to use ICT combined with support from peers within the university, should contribute to the formation of positive attitudes towards ICT.

The study results, in terms of the effect of support received by students from the university on students' attitudes towards ICT through PEOU and PU factors, are consistent with the studies conducted by Ngai et al. (2007) and Sanchez and Hueros (2010), the results of which revealed that ICT support positively influenced students' attitudes toward ICT through the PEOU and PU factors. Moreover, the current study results in terms of the effect of the support factor on students' attitudes towards using ICT are consistent with the findings of Alenezi et al. (2011), Al-Fadli (2009), and Concannon, Flynn and Campbell (2005), who confirmed that the ICT support factor has a positive influence on students' attitudes towards using ICT in learning. What is more, whenever students receive more support, their attitudes towards using ICT increase and the reverse is also found to be true.

5.4 Discussing the results of Question Three, namely:

*What is the relationship between students’ attitudes towards, and their use of, ICT in learning at KHEIs?*

The results of the quantitative analysis relating to the study's third question generally indicated the existence of a positive relationship between students' attitudes towards using ICT at KHEIs and their use of these tools in their university studies. Furthermore, the results showed that their positive attitudes towards ICT have a positive effect on their use of these tools in their university
learning. This result could be attributed to the fact that university study relies heavily on self-learning rather than gaining knowledge directly from tutors. Therefore, this requires students looking for various ICT tools to facilitate their learning process and to acquire information related to the courses they are on, as well as to seek out ways of communicating faster and more easily with each other and with their tutors, without wasting precious time and effort that could be used to complete other university assignments.

In this respect, Rhema and Miliszewska (2010) reported that self-learning at university provides students with an ideal opportunity to use various ICT tools in their daily studies. Therefore, this represents a type of connection between the students and these tools because of the advantages which accompanied them and which facilitated the university-based learning process. In the same respect, Lenhart, Madden and Hitlin (2005) stated that university students prefer using ICT tools to communicate with their classmates and course tutors because of their advantages, such as saving time and effort as well as making learning more flexible. The results of the current study are consistent with those produced by Hueros and Sanchez (2010), Donthu and Porter (2006), Donthu (2006) and Sumak et al. (2011), which are aimed at identifying the relationship between students' attitudes towards ICT and the extent of their use of these tools in their daily learning at university. Moreover, their results revealed the presence of a positive correlation between both the students' attitudes towards ICT and their use of them in their daily learning.

On the other hand, the results of the current study are inconsistent with those of Ngai, Poon and Chan (2007), who investigated the relationship between students' attitudes towards ICT and the use of ICT tools in their daily learning, their findings revealing the presence of a weak relationship between students' attitudes and their use of ICT tools in learning. In addition, the
encouragement they received from tutors was the only motivation they had for using these tools this way. The results of the current study are inconsistent with those of Vojt, Littlejohn and Margaryan (2011), who examined the nature and extent of use of ICT tools by students for learning and communication. Their study revealed an absence of correlation between students’ attitudes toward ICT and their use of them in their daily learning.

With respect to the results relating to the use of ICT amongst KHEI students in university-based learning, the result of the quantitative analysis indicates that the ICT tools implemented by students at the private university consisted primarily of the Internet as a tool for daily learning, followed by mobile technology for communication and learning, and then the laptop, for completing homework and assignments related to their courses.

The qualitative analysis results supported the above findings since they showed that the private university students cannot exclude ICT from their daily learning. What is more, the results demonstrated that there is a very strong correlation for students between the use of ICT and the absence of these tools within the university, thus leading to impeded learning and wasted time and effort while endeavouring to accomplish other important academic tasks. Furthermore, the results also reveal that the Internet, laptops and smartphones are the most important tools for learning amongst the public university students. These findings indicated that the role of these tools is very important for providing flexibility and facilitating daily learning, as well as for gaining a great deal of the information required for learning. In addition, these tools facilitate communication with course tutors and peers, and save their time and effort regarding discussions and learning matters.
The results revealed an increase in the number of students at the public university who use the Internet as their primary means of study, which may be explained by the fact that the learning policy at the public university is based on principles of encouraging self-learning, independent research and gathering information from multiple resources. Therefore, it is natural that the public university students should head towards using the Internet as a primary source of learning and information, without wasting time and effort. One of the other reasons for this result refers to the presence of strong ICT infrastructure within the public university in Kuwait, which includes the provision of a high speed Internet service to serve the learning and teaching process. It facilitates the use of the Internet by the students as a means of learning and researching, without presenting any problems while browsing or downloading. The most important reason for this result may be due to the encouragement received by the public university students from their tutors, regarding the use of the Internet on an on-going daily basis while in classrooms, undertaking quick searches for specific information. In addition, the links that the course tutors propose to their students while involved in preparing assignments or presentations will assist students in obtaining important and useful information. The role of encouragement from tutors was noted when the current researcher was permitted to attend more than one class during the actual implementation of the study.

With respect to the students' use of smartphones and their accompanying technology as a learning tool, the reason may be attributed to smartphones being a popular means of daily communication which students can carry in their pockets wherever they go. They also have the advantage of ease of use for both communication and entertainment. Furthermore, smartphones are often characterised by the application of social networking programmes, which facilitate the opportunity to learn cooperatively through the creation of group chat rooms, whereby homework tasks may be discussed. They are also considered as an effective method of communication with
course tutors when enquiring about learning matters, with no waste of time and effort. They outperform traditional methods of communication between students and tutors.

This result is consistent with the results obtained by Margaryan, Littlejohn and Vojt (2011), which refer to an investigation of the extent of students' use of ICT in university-based learning. Such results revealed that the Internet and smartphones are among the most widely used ICT tools in this context. The current study results are also consistent with those gained by Ahmad Khan, Bhatti and Ahmad Khan (2011) and Gunay and Kaya (2011), which identify the patterns of ICT used, and the extent of their use by students in their university learning. These results reveal that the Internet is the primary and most fundamental tool used in students’ daily learning.

With respect to the ICT tools used by the private university students in their daily learning, the results of the quantitative analysis indicated that the laptop was the most frequently used tool at the private university, with regard to students in their daily learning, while Microsoft programmes ranked second, followed by mobile technology, which came third. The results of the qualitative analysis were similar to the results of the qualitative analysis in terms of considering the laptop and Microsoft Office programmes as the most useful and commonly used ICT tools for daily application in students' learning. The smartphone was also considered as an important secondary tool for daily learning at the private university.

This result may be justified by the availability of certain features within the laptop, which are missing from other ICT tools, and which can facilitate the daily learning process amongst students, comparing very favourably with other tools. For example, one of the laptop's features is its flexibility due to its portability. It can therefore be easily carried from place to place due to
its small size. It can also carry software that is useful for students' daily learning but which is not available within any of the other ICT tools mentioned here. Microsoft Office is one such tool that students need for preparing presentations and writing homework and assignments. In addition, information can be transferred easily using these means.

On the other hand, smartphone technology is often used on a daily basis for the learning process and this may be because, as previously stated, the smartphone is currently considered as one of the most important means of communication and can be carried by a person wherever he or she goes. It cannot be excluded from this study because it incorporates many features, including social networking programmes and Internet access to aid study. The results of the current study are consistent with the results generated by Nagler and Ebner (2009), which aimed to identify the daily use of ICT tools for student learning at one of the Australian universities. These results reveal that laptops and mobile technology are among the most commonly used ICT tools in students' daily learning and the social networking programmes available within smartphones are among the most important features for facilitating the communication process between students during their daily studies.

Conversely, the least used ICT tools for students’ learning at both universities (public and private) were indicated in the results of the quantitative analysis as being the ‘interactive white board’ in the classrooms and ‘social video communications’ on PCs. These tools were ranked last in terms of use for learning purposes. With respect to the results of the qualitative analysis relating to the above stage, it was clear that, despite the availability of interactive whiteboards in the classrooms affiliated to the Faculty of Administrative Sciences at the public university, they were not being implemented by tutors. Furthermore, another result points to the lack of interactive whiteboard use in classrooms within the Faculty of Science and Engineering at the
same university, despite the valuable place for them in students’ learning, where the results of the qualitative analysis indicated that students of Science and Engineering at the public university feel dissatisfied with the failure to use interactive whiteboards in classrooms and study halls, despite their availability in other faculties at the public university.

The lack of interactive whiteboard use for students within the Faculty of Administrative Sciences at the public university may be justified by the fact that the respective tutors lack sufficient experience in using this tool. As a result, their confidence in using it to enhance students’ learning is diminished. Therefore, they develop weak attitudes towards using the interactive whiteboard in the classroom. Another reason may be that there are no specialised courses or workshops offered to prepare tutors for using this tool in students’ learning and no encouragement from the university administration regarding the serious implementation of this tool in the learning process. This result also corresponds to the lack of interactive whiteboard use in the Faculty of Engineering and Science at the private university and the reason for this may be the unavailability of such tools within the classrooms at both the private university and the Faculty of Science and Engineering at the public university, as indicated by the results of the qualitative analysis.

With respect to the failure to implement the ‘social video communication’ tool on PCs by students at both universities (public- private), the reason may be attributed to the current availability of these programmes within smartphones, that makes their use easier and more flexible than is the case with a fixed PC, which requires students to be in a specific place while using it, thus presenting a limitation.
Chapter Six: Conclusion and Recommendations

6.1 Introduction

The current study has achieved its aim of investigating the attitude of students towards using ICT at KHEIs (public and private) and brought forward the factors that influence students’ attitude in both universities, as well as investigating the relationship between students’ attitudes and their use of ICT tools in their daily learning. These results will be explained in brief in the next section.

6.2 Conclusion

The success of an application and the use of ICT tools in any learning institution, including HEIs, depend mainly on students’ acceptance of such ICT tools and their attitudes towards using them in their daily learning. Hence, this study came to reveal the attitudes of students towards using ICT in their learning at KHEIs, and reached an understanding of the position of ICT in learning at KHEIs, in both public and private universities. In order to do this, data from questionnaires and interviews were collected and analysed to reveal the most important results to respond to the study questions. Therefore, the main relevant conclusions of this study will be presented here, as follows:

6.2.1 Question One: What are the attitudes of students towards using ICT in their learning at KHEIs?

The results of qualitative and quantitative data show that the attitudes of students towards using ICT in learning in KHEIs are positive overall. However, the attitude of students in the public university is strongly positive, compared to the attitude of students at the private university, which is less so. In addition, the public university students’ attitudes were found to be strongly
influenced by the factors PEOU and PU of ICT, which correspondingly formed a strong positive attitude towards ICT. On the other hand, the private university students’ attitudes were strongly influenced only by the PEOU factor, which led to fewer positive attitudes.

6.2.2 Question Two: What are the factors that influence students’ attitudes towards using ICT in their learning at KHEIs?

The second aim of the study was to identify the factors influencing students’ attitudes towards using ICT in KHEIs. The factors investigated in this study consisted of the type of university, gender, academic discipline, language of study, ICT experience and ICT support. These factors were found to influence students’ attitudes towards ICT through the PEOU and PU factors. The conclusions drawn from the second research question may be explained as follows:

*Regarding the factor, ‘type of university’,* the results show that the type of university can influence the attitudes of students towards ICT. It was thus concluded that students from the public university have a strong positive attitude towards using ICT in learning, compared to students from the private university who have a less positive attitude in this regard.

*Regarding the gender factor*, the results show that gender has an influence on students’ attitudes towards using ICT. In general, male students at Public and Private Universities demonstrated a more positive attitude towards using ICT compared with the female students at both universities. However, the results also show that male students at the Public University have a more positive attitude than the Private University male students, because their attitudes were found to be more strongly influenced by the PU factor than were the male students at the Private University.
Regarding the academic discipline factor, the results generally show that the academic discipline concerned has no direct influence on students’ attitudes towards using ICT in their learning. However, the public university students from the Administration Sciences Department showed that they were strongly influenced by the PEOU and PU factors, which in turn formed more positive attitudes towards the use of ICT in learning, while this was not the case amongst their peers in the Private University, or amongst students from the science departments (Computer Engineering and Computer Science) at either university. Furthermore, the results of the interviews show that socialising and communication via the Internet amongst the respective university students has a major influence on their use of ICT for learning. It was concluded that the peer learning and social communication between students positively influenced the attitudes of Administration Sciences students at the public university towards using ICT. Moreover the attitudes of these students are significantly influenced by the PEOU and PU factors.

Regarding the factor ‘language of study’, the results show that the language used as the medium for learning can influence students’ attitudes towards ICT at both Public and Private Universities. It was concluded that students studying through the medium of English at both universities have a more positive attitude towards using ICT in their learning, than do those studying through the medium of both English and Arabic. Besides, it was concluded that students’ positive attitudes are not influenced by the PEOU and PU factors, and so there must be different factors affecting students’ attitudes towards using ICT. However, these were not examined in this study. Moreover, it was concluded from the interviews that the English language is not considered as a barrier to students’ use of ICT in learning, since the constant and regular use of ICT tools in students’ daily learning is actually found to contribute to improving their English language skills. In this respect, it was concluded that students who study through the medium of English are influenced by the PU of ICT at university.
Regarding the factor ‘ICT experience’, the results show that experience of using ICT influences students’ attitudes towards it as a learning tool. Besides, the degree of positive attitude appeared to vary according to the level of experience. It was concluded that the group of students with a ‘Very good - Excellent’ level of ICT experience at both Public and the Private Universities have the strongest positive attitude towards using ICT, and their attitudes are significantly influenced by the PEOU and PU factors. Conversely, the student group with a ‘Good’ level of experience at both universities has a less positive attitude, since their attitudes are influenced positively only by the PU factor, which means they find ICT ‘useful’, but not so easy to use for their learning.

On the other hand, it was concluded that students who claimed to have ‘Fair-Poor’ experience in using ICT have the least positive attitude, compared to the two previous groups, since their attitudes are not influenced by either the PEOU or the PU of ICT. Furthermore, results show that a lack of ICT courses, content which is not updated, and a lack of ICT practice courses are the reasons for students having a less positive attitude to ICT learning tools. It was therefore concluded that students had not gained new experience and skills from ICT courses provided at the universities, but had rather drawn their ICT experience from earlier education in school. However, any experience they did have had evolved during their university education because of the constant use of ICT in their daily learning.

Regarding the ICT support factor, results show that ICT support can influence students’ attitudes towards using ICT and these attitudes may differ according to the extent to which the students believe they have received adequate ICT support at their universities. It was concluded that the group of students who ‘Agreed - Strongly agreed’ about having received adequate support at both Universities (Public and Private), have a strong positive attitude towards using
ICT in their learning, as well as their attitude being significantly influenced by the PEOU and PU factors. Those students had not faced any problems in using ICT tools, but had actually found ICT useful to their learning. On the other hand, it was concluded that the group of students who answered with ‘Neutral’ and ‘Disagree’ on the question of whether they had received adequate support have a less positive attitude towards ICT, and their attitudes are not influenced either by the PEOU or PU of ICT. Moreover, it was deduced that the public university students receive ICT support mainly from their tutors and then less frequently, from their friends in the computer laboratory and at the ICT club. On the other hand, the private university students were found to obtain ICT support mainly from friends and family and less often from their tutors. However, the lack of ICT services, tools and technical support appeared to be the reason for a less positive attitude amongst students.

6.2.3 Question Three: What is the relationship between students’ attitudes towards, and their use of ICT in learning at KHEIs?

It was concluded that a positive relationship exists between students’ attitudes at both universities (public and private) and their daily usage with ICT tools for learning. However, students at both universities were found to use different ICT tools in their daily learning. Moreover, the results show that the Internet is the main learning tool used in students’ daily learning at the public university. The second most popular tool is mobile phone technology to discuss coursework with others, and the third most frequently used ICT tool is the laptop for completing homework and assignments. At the Private university in Kuwait, it is the laptop which is the main ICT tool used for students’ daily learning to complete their assignments, and the second most commonly used tool is appropriate software, such as Microsoft Office and others to complete assignments and homework. The third most popular tool for students in their daily learning at is mobile technology, which enables them to discuss their work with others. On
the other hand, results also show that the interactive white board and the use of a PC for video communication comprise the ICT tools used least in students’ learning at both the public and the private university.

6.3 The model suggested for ICT applications in Kuwait

The previous section presented the main conclusions of the study; these conclusions are the outcomes of quantitative and qualitative data collected and analysed from study questionnaires and interviews. These important results were gathered and arranged for the establishment of a new model regarding ICT use in KHEIs (public and private) and accordingly, a final model was constructed to create a clear perspective of the ICT position and its application to students’ learning at both private and public universities in Kuwait, as well as showing the important factors that influence students’ attitudes towards using ICT during their university studies. Accordingly, the suggested model will contribute to the development of ICT strategies at both public and the private universities, since it provides a clear vision of ICT use for interested educators and stakeholders at both universities. Figure 6.1 shows a suggested model for ICT use in KHEI learning processes.
The above Figure shows the important factors that emerged from the study concerning influences on students’ attitudes towards using ICT in their daily learning, as well as what was indicated concerning the reality of students’ use of ICT in learning at HEIs.

The model retains the basic structure of Davies’s (1986) model (external factors, PU of ICT, PEOU of ICT, Attitude towards ICT, and Use of ICT), but adds other elements from the data in this study. The original elements were validated in this study, but extra elements emerged in the data analysis stage – discussed in Chapter four, five. The blue-shaded factors in the Figure were drawn from students’ interviews (qualitative data) and have a significant role in forming students’ attitude towards, and the use of ICT in KHEIs learning. The factors in the other boxes

Figure 6.1: The suggested model for ICT use in learning at KHEIs
are the main quantitative factors investigated in this study and they form part of the study questions and aims. The evidence from this study suggests that they are of major importance in the formation of students’ attitude towards ICT in KHEIs learning. However, the study indicated that all elements are, in fact, inter-related and should be considered by KHEIs when adopting ICT into their learning processes. It is suggested that they will help to improve the use of ICT in university education, reinforce students’ use of ICT in their learning, and achieve university goals.

6.4 Recommendations

Based on the above results and conclusions of this study, different factors were found to influence students’ attitudes towards using ICT in their daily learning. In order to improve the position of ICT in learning at KHEIs, the following recommendations should be considered:

- More attention should be given to the role and status of the position of ICT at the private university in Kuwait, in terms of the provision of adequate ICT facilities, ICT tools and Internet services. In addition, the regular servicing of ICT tools should be ensured to prevent any delays to students’ learning.
- More attention should be given to the provision of sufficient ICT facilities and tools in the Computer Science and Computer Engineering faculties at the public university. The public University of Kuwait should consider the equally distributed provision of ICT tools and facilities across all faculties, so students from different disciplines can use them in their learning.
- The technical support that students receive from the IT department in both universities should be improved, and the technical obstacles faced by students in their daily learning should be addressed as a matter of priority.
- The content of ICT modules offered at KHEIs, as well as the provision of practical ICT courses for freshman students alongside their theoretical modules should be updated, in order to introduce students to new ICT tools in their university learning as well as developing their ICT experience and skills.

- The peer learning factor amongst students should be reinforced, providing ICT facilities and an environment equipped with modern ICT tools, where students can meet to share and exchange experiences, skills and ICT activities in their free hours at university.

- The application of mobile phone technology should be encouraged in learning at KHEIs, through university provision of mobile applications specifically designed or adapted for students’ learning and communication with tutors, and the provision of an application with a social communication tool where students can discuss learning matters with peers or with tutors in a formal way.

- The older generation of tutors at the public university in Kuwait should be motivated to use ICT in students’ learning, by providing them with training sessions and workshops on the use of ICT provided in the university and specially the new tools added to be used for students, in order to develop their experience and skills in ICT, and feel more confident in utilising them for students’ learning.

- Tutors in the public university in Kuwait should encourage their students to use ICT tools in their English language version, since this will play a positive role in developing students’ English skills.

- Female students at both universities should be encouraged to use ICT tools regularly in their learning, through motivating them to use various ICT tools available to them in the university, to exchange learning materials, information or for their presentations in the classrooms, as well as when accomplishing assignments or completing homework tasks.
More attention should be given to the ICT services and tools generally provided in the private universities, as well as the lack of maintenance, lack of ICT tools and facilities, and poor Internet services. These factors must be seriously considered to support students’ learning, and develop a stronger attitude towards ICT in learning.

6.5 Research limitations

A limitation of the research was that students rated their ICT experience by their own assessment, and so the findings may not objectively show their actual experience in using ICT. However, this could be overcome with practical ICT courses, where students could be assessed with grades to ascertain their real experience. Another limitation is that the study was conducted only on the Public and private universities campuses, and in the faculties of Administration Sciences, Computer Engineering and Computer Science. Therefore, the findings are limited to these universities and departments and may not correspond to other private and public universities in the State of Kuwait.

6.5 Research limitations

A limitation of the research was that students rated their ICT experience by their own assessment, and so the findings may not objectively show their actual experience in using ICT. However, this could be overcome with practical ICT courses, where students could be assessed with grades to ascertain their real experience. Another limitation is that the study was conducted only on the Public and private universities campuses, and in the faculties of Administration Sciences, Computer Engineering and Computer Science. Therefore, the findings are limited to these universities and departments and may not correspond to other private and public universities in the State of Kuwait.
6.6 Further research

According to the findings of this study, different thoughts for further studies are suggested below:

- Further investigations in other universities from the private and public sector should be conducted, in order to explore further factors that may positively or negatively influence students’ attitudes, as well as to investigate the relation between the two components of attitude in the Model.

- Further investigation should be applied in different departments at the public university in Kuwait regarding the influence of students’ ICT use on their English language skills.

- Further investigation should be conducted in different faculties of both universities to explore other factors that may influence students’ attitudes towards ICT.

- Tutors must be surveyed in both the private and public sectors to identify the common positive and negative factors that influence their use of ICT in teaching students.
References


JISC infoNet. (2004). Effective use of virtual learning environments. Available at: 


Lambert, A. (1996) ‘how the worlds rules in telecommunications and media are shaping up in cyberspace: North Asia generally and Korea as a case study’. Paper presented at the forum of the international institute of communications (Australian chapter): *how the worlds rules in telecommunication and media are shaping up in cyberspace*, 14 May.


Ministry Of Education (2012) *The General technical guidance of computer*. Available at: 
http://www.moe.edu.kw/SitePages/Html/%D9%88%D8%B2%D8%A7%D8%B1%D8%A9%20%D8%A7%D9%84%D8%AA%D8%B1%D8%A8%D9%8A%D8%A9/STR/%D8%A7%D9%84%D8%AA%D9%88%D8%A7%D8%AC%D9%8A%D9%87/%D8%AA%D9%88%D8%AC%D9%87%20%D8%A7%D9%84%D8%AD%D8%A7%D8%B3%D9%88%D8%A8/نبذه%20عن%20توجيه%20الحاسوب.html. (Accessed: 22 Jan 2014).

Ministry Of Education (2012) *The Private Education Council*. Available at: 

Ministry Of Education (2012) *The History of Education in Kuwait*. Available at: 


Ministry Of Higher Education (2012) *Students’ scholarship*. Available at: 

Ministry of Higher Education (2013) *Private Universities Council*. Available at: 


Appendix 1: The study questionnaire in English version

Dear students:

I am a PhD student in Cardiff Metropolitan University at UK. I am gathering data with the aim of investigating undergraduates’ attitude towards using ICT at Kuwait higher education institutions.

Information and communication technology (ICT) is considered an important and essential tool, which is used to enhance and support traditional learning at universities, as well as to create an active learning environment for students learning. This questionnaire we consider the term of ICT as: Any technology device or tools including software used to communicate, share and manage information, in order to support and improve learning at Kuwait universities.

For example: Computers, laptops, mobiles, I Pads, virtual learning environments (black board or other), video conferences, internet, interactive white board and all type of software such as Microsoft office, SPSS,…Etc. all considers ICT tools used in your learning.

I would appreciate your help in my research in filling this questionnaire, and would be grateful for you. Your participation in the research is voluntary and you are free to withdraw from the project at any time without penalty and without giving any reason. If you choose to withdraw after data has been collected, but prior to any possible publication, your data will be destroyed and not included in the study. The research results will be studied together and any reference to individual responses that are used in any output resulting from this project (such as my dissertation) will be made anonymous, making it impossible to determine the identity you. Access to the data will be restricted to the researcher, supervisors and examiners.

Thank you for giving us your valuable time

Alyya Meerza
Research student
Cardiff Metropolitan University
Please tick the appropriate answer:

Q1: identify your gender:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>□ Male</td>
</tr>
<tr>
<td></td>
<td>□ Female</td>
</tr>
</tbody>
</table>

Q2: please indicate in which university are you studying?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>□ Kuwait University (public university)</td>
</tr>
<tr>
<td></td>
<td>□ American University of Kuwait (private university)</td>
</tr>
</tbody>
</table>

Q3: please specify your discipline:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>□ science</td>
</tr>
<tr>
<td></td>
<td>□ Humanity</td>
</tr>
</tbody>
</table>

Q4: please indicate the level year of study?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>□ Sophomore</td>
</tr>
<tr>
<td></td>
<td>□ Senior</td>
</tr>
</tbody>
</table>

Q5: what is the main learning language you are using at your university learning?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>□ Arabic</td>
</tr>
<tr>
<td></td>
<td>□ English</td>
</tr>
<tr>
<td></td>
<td>□ Arabic and English</td>
</tr>
</tbody>
</table>

Q6: how would you rate you’re:

<table>
<thead>
<tr>
<th>English reading skills:</th>
<th>□ excellent</th>
<th>□ Very good</th>
<th>□ Good</th>
<th>□ Fair</th>
<th>□ Poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>English writing skills:</td>
<td>□ excellent</td>
<td>□ Very good</td>
<td>□ Good</td>
<td>□ Fair</td>
<td>□ Poor</td>
</tr>
<tr>
<td>English speaking skills:</td>
<td>□ excellent</td>
<td>□ Very good</td>
<td>□ Good</td>
<td>□ Fair</td>
<td>□ Poor</td>
</tr>
</tbody>
</table>

Q7: where did you learn to use ICT? (Please tick all applicable)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>□ Previous education (intermediate- secondary)</td>
</tr>
<tr>
<td></td>
<td>□ ICT courses attended at university</td>
</tr>
<tr>
<td></td>
<td>□ Private lessons (institutions- private tutor)</td>
</tr>
<tr>
<td></td>
<td>□ On my own</td>
</tr>
</tbody>
</table>

Q8: how do you rate your experience in using ICT in learning?
Q9: I feel that I receive adequate support in using ICT at my university

† □ strongly agree
† □ agree
† □ Neutral
† □ disagree
† □ strongly disagree

Q10: I get support from (please tick all applicable)

† □ Tutors
† □ IT department
† □ Family and friends
### Attitude towards ICT

<table>
<thead>
<tr>
<th>NO.</th>
<th>Question</th>
<th>Strongly agree</th>
<th>agree</th>
<th>Neutral</th>
<th>disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Using ICT makes learning much easier</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Using ICT allows me to communicate easily with others outside the lessons</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Using ICT allows me to work easily with others during the lessons</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Using ICT allows me to work easily with others outside the lessons</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Using ICT makes me an effective learner</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Using ICT enables me to accomplish activities and assignments more quickly</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>ICT is useful as a learning tool</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Using ICT allows me to accomplish more than does using traditional tools</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Using ICT enhances my knowledge</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>ICT allows me to produce more in the time I have</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Overall, I find ICT useful for my learning</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>ICT is generally easy to use on my course</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>I find it easy to become skilful in using ICT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>I find easy to manage my course files using ICT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>I use ICT because it allows me to learn wherever I need</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>I find it easy to get ICT to do what I want it to do</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>It is easy for me to complete assignments using ICT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>I find the use of ICT is clear and easy to understand</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>I find it easy to search out information in different locations by using ICT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Overall, I see ICT tools are easy to use</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Engagement with ICT

How frequently, if at all do you use or do each of the following in your daily **learning**?

<table>
<thead>
<tr>
<th>NO.</th>
<th>Question</th>
<th>Every day</th>
<th>Once a week</th>
<th>Once a month</th>
<th>Once a term</th>
<th>never</th>
</tr>
</thead>
<tbody>
<tr>
<td>21</td>
<td>I Use online library resources (databases, journals, e-books…Etc)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>I Use social networking websites (facebook, messenger…Etc) to discuss course work with others</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>I Use emails to discuss your course work</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>I Use mobile technology to discuss course work with others</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>I Use iPhone social video communication (Skype, tango…Etc) to discuss course work with others</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>I Use PC social video communication (Skype &amp; others) to discuss course work with others</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>I Use the VLE (blackboard, WebCT, Moodle…Etc) to submit assignments</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>I Use the VLE (blackboard, WebCT, Moodle…Etc) to access online materials.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>I Use the VLE (blackboard, WebCT, Moodle…Etc) to check tutors notes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>I use email or text to Contact tutor online</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>I Use the internet to search information for assignments or home work</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>32</td>
<td>I Use I pad functions and features to complete assignments, or discuss course work with others</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33</td>
<td>I Use my laptop or PC to finish assignments</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>34</td>
<td>I use software such as Microsoft word, PowerPoint, Excel, SPSS, Photoshop…Etc, to complete assignments</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>35</td>
<td>I Use interactive white board in the classroom</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Although the survey is anonymous, if you would like to take a place in the interview regarding to ICT at higher education, please write your number and email for contact.

Contact number:
Email:
Appendix 2: The study questionnaire in Arabic version

أعزائي الطلاب

أنا طالبة دكتوراه في جامعة كارديف متروبوليتان (Cardiff Metropolitan) في المملكة المتحدة، أقوم بجمع بيانات من أجل التحقق من اتجاهات الطلاب نحو استخدام تكنولوجيا المعلومات والاتصالات في التعليم بمؤسسات التعليم العالي بدولة الكويت.

نيبى عن تكنولوجيا المعلومات والاتصالات

تعتبر تكنولوجيا المعلومات والاتصالات أداة هامة وأساسية في التعليم، حيث تستخدم في تعزيز ودعم التعليم التقليدي في الجامعات، وخلق بيئة تعليمية نشطة لتعلم الطلاب. يعرف مصطلح تكنولوجيا المعلومات والاتصالات على أنه: أي جهاز أو أداة تكنولوجيا بما في ذلك البرامج الخاصة بها وبرامج الكمبيوتر، والتي تستخدم في الاتصالات وتبادل وإدارة المعلومات، من أجل دعم وتحسين التعليم في مؤسسات التعليم العالي في الكويت.

ويشمل تكنولوجيا المعلومات والاتصالات المستخدمة في التعليم التالي: أجهزة الكمبيوتر الشخصية (PC)، الهواتف النقالة، أجهزة البث والأي بود، برامج التعليم الإفتراضية (بلاك بورد - موديل)، المؤتمرات التي تم عن بعد باستخدام الإنترنت، السبورة الذكية المستخدمة في الفصول الدراسية، (Microsoft office)، البرامج الإلكترونية (SPSS) ... الخ، وغيرها من البرامج المستخدمة في تسهيل التعليم الخاص بمكم.

أقدر لكم مساعدتم لي في بحثي، عن طريق تعبئة هذا الاستبيان. حيث أن مشاركتكم في البحث تعتبر اختيارية ولست إجبارية، ولنتم حرية الانسحاب في أي وقت دون إبداء أية أسباب. كما أود إبلاغكم أنه سوف يتم التعامل مع البيانات والإجابات الفردية بسرية تامة، بحيث لا يمكن التعرف على هوية المشاركين في هذا الاستبيان، وتقتصر وصول البيانات إلى كل من الباحثة والأكاديميين من المشرفين والمتحلين.

لكم جزيل الشكر والامتنان

أ.عليه حسين ميرزا

طالبة دكتوراه

(Cardiff Metropolitan University)
السؤال الأول: يرجى وضع علامةٍ أمام الإجابة المناسبة

الجنس؟ □ ذكر □ أنثى

يرجى تحديد اسم الجامعة التي تدرس فيها؟ □ جامعة الكويت □ الجامعة الأمريكية في الكويت

يرجى تحديد التخصص الأكاديمي؟ □ تخصص علمي □ تخصص أدبي

يرجى تحديد السنة الدراسية؟ □ السنة الدراسية الثانية □ السنة الدراسية النهائية

ما هي لغة التعليم الرئيسي التي تستخدمها في تعليمك الجامعي؟ □ اللغة العربية □ اللغة الإنجليزية □ اللغة العربية والإنجليزية

ما هو تقييمك لنفسك بالنسبة إلى كل من:

مهارات القراءة باللغة الإنجليزية: □ ممتازة □ جيدة جدا □ جيدة □ معقولة □ ضعيفة

مهارات الكتابة باللغة الإنجليزية: □ ممتازة □ جيدة جدا □ جيدة □ معقولة □ ضعيفة

مهارات التحدث باللغة الإنجليزية: □ ممتازة □ جيدة جدا □ جيدة □ معقولة □ ضعيفة
إين تعلمت استخدام تكنولوجيا المعلومات والاتصالات؟ (بإمكانك اختيار أكثر من إجابة)

- التعليم السابق (متوسط – ثانوي)
- مقررات تكنولوجيات المعلومات والاتصالات في الجامعة
- دروس خاصة (معاهد خاصة – دروس خاصة)
- تعليم ذاتي

كيف تصنف خبرتك في استخدام أدوات تكنولوجيا المعلومات والاتصالات في التعلم؟

- ممتازة
- جيدة جدا
- جيدة
- مقبولة

أعتقد بأنهي أحصل على دعم كافٍ لاستخدام تكنولوجيا المعلومات والاتصالات في جامعتي:

- موافق بشدة
- موافق
- لا أعلم
- غير موافق
- غير موافق بشدة

أحصل على الدعم من كل من: (بإمكانك اختيار أكثر من إجابة)

- أستاذ المقرر
- إدارة نظم المعلومات في الجامعة
- الأسرة والأصدقاء
<table>
<thead>
<tr>
<th>السؤال</th>
<th>م</th>
</tr>
</thead>
<tbody>
<tr>
<td>استخدام تكنولوجيا المعلومات والاتصالات تجعل التعلم أكثر سهولة</td>
<td>1</td>
</tr>
<tr>
<td>استخدام تكنولوجيا المعلومات والاتصالات تسمح لي بالاتصال مع الآخرين بسهولة خارج المقرر الدراسي</td>
<td>2</td>
</tr>
<tr>
<td>استخدام تكنولوجيا المعلومات والاتصالات تسمح لي بالعمل مع الآخرين بسهولة أثناء المقرر الدراسي</td>
<td>3</td>
</tr>
<tr>
<td>استخدام تكنولوجيا المعلومات والاتصالات تسمح لي بالعمل بسهولة مع الآخرين خارج المقرر الدراسي</td>
<td>4</td>
</tr>
<tr>
<td>استخدام تكنولوجيا المعلومات والاتصالات يجعلني متعلماً نشطاً</td>
<td>5</td>
</tr>
<tr>
<td>استخدام تكنولوجيا المعلومات والاتصالات تمكنني من انجز الأنشطة والواجبات الدراسية بصورة أسرع</td>
<td>6</td>
</tr>
<tr>
<td>أدوات تكنولوجيا المعلومات والاتصالات مفيدة للتعلم</td>
<td>7</td>
</tr>
<tr>
<td>استخدام تكنولوجيا المعلومات والاتصالات تسمح لي بإنجاز المزيد من الواجبات مقارنة بأدوات التعلم التقليدية</td>
<td>8</td>
</tr>
<tr>
<td>استخدام تكنولوجيا المعلومات والاتصالات يعزز من معرفتي</td>
<td>9</td>
</tr>
<tr>
<td>استخدام تكنولوجيا المعلومات والاتصالات تسمح لي بإنجاز الكثير من الفروض الدراسية في الوقت المحدد لي بصورة عامة أجد أن استخدام تكنولوجيا المعلومات والاتصالات مفيدة في تعليمي</td>
<td>10</td>
</tr>
<tr>
<td>يسهل استخدام تكنولوجيا المعلومات والاتصالات في مقرراتي الدراسية</td>
<td>11</td>
</tr>
<tr>
<td>أجد أنه من السهولة أن أصبح متمكنًا في استخدام أدوات تكنولوجيا المعلومات والاتصالات</td>
<td>12</td>
</tr>
<tr>
<td>أجد أنه من السهولة إدارة ملفاتي الدراسية باستخدام تكنولوجيا المعلومات والاتصالات</td>
<td>13</td>
</tr>
<tr>
<td>استخدام تكنولوجيا المعلومات والاتصالات لأنها تسهل لي التعلم في أي مكان أريد</td>
<td>14</td>
</tr>
<tr>
<td>أجد أنه من السهل توظيف تكنولوجيا المعلومات والاتصالات لعمل ما أريد من السهل لي انجاز مهامي الدراسية باستخدام تكنولوجيا المعلومات والاتصالات</td>
<td>15</td>
</tr>
<tr>
<td>أجد أن استخدام أدوات تكنولوجيا المعلومات والاتصالات واضحة ومفهومه</td>
<td>16</td>
</tr>
<tr>
<td>أجد أنه من السهولة البحث عن المعلومات من أماكن مختلفة، باستخدام تكنولوجيا المعلومات والاتصالات</td>
<td>17</td>
</tr>
</tbody>
</table>
السؤال الرابع: ما هو تكرار استخدامك اليومي لكل مما يلي؟

<table>
<thead>
<tr>
<th>السؤال</th>
<th>رقم</th>
</tr>
</thead>
<tbody>
<tr>
<td>يتصفح مواقع التواصل الاجتماعي (فيسبوك، المستنجر... الخ) لمناقشة المقررات الدراسية مع الآخرين</td>
<td>2</td>
</tr>
<tr>
<td>يستطيع رسائل البريد الإلكتروني (email) لمناقشة ما يتعلق بالمقررات الدراسية مع الآخرين</td>
<td>3</td>
</tr>
<tr>
<td>يستطيع تكنولوجيا الهاتف النقال لمناقشة ما يتعلق بالمقررات الدراسية مع الآخرين</td>
<td>4</td>
</tr>
<tr>
<td>يستطيع الأساليب ووسائل الاتصال المرنة الاجتماعية (سكاي بي، تانجو وخلافه) لمناقشة ما يتعلق بالمقررات الدراسية مع الآخرين</td>
<td>5</td>
</tr>
<tr>
<td>يستطيع الحاسب الشخصي (PC) ووسائل الاتصالات المرنة الاجتماعية (سكاي بي والوسائل الأخرى) لمناقشة ما يتعلق بالمقررات الدراسية التعليمية مع الآخرين</td>
<td>6</td>
</tr>
<tr>
<td>يستطيع تعلم الاستراتيجية مثل (بلاك بورد، ويب سيتي، موديل.. الخ) لتسليم الواجبات والفروض الخاصة بالمقرر</td>
<td>7</td>
</tr>
<tr>
<td>يستطيع تعلم الاستراتيجية مثل (بلاك بورد، ويب سيتي، موديل.. الخ) للدخول إلى المقررات الإلكترونية</td>
<td>8</td>
</tr>
<tr>
<td>يستطيع تعلم الاستراتيجية مثل (بلاك بورد، ويب سيتي، موديل.. الخ) لمراجعة ملاحظات أساتذة المقرر</td>
<td>9</td>
</tr>
<tr>
<td>يستطيع البريد الإلكتروني (email) أو الرسائل النصية للاتصال مع أساتذة المقرر</td>
<td>10</td>
</tr>
<tr>
<td>يستطيع الإنترنت للبحث عن المعلومات المتعلقة بواجبات ومواد المقرر</td>
<td>11</td>
</tr>
<tr>
<td>يستطيع خصائص الأي باد (iPad) لإنجاز واجبات المقررات أو مناقشة المقررات مع الآخرين</td>
<td>12</td>
</tr>
<tr>
<td>استخدام الكمبيوتر المحمول أو الكمبيوتر الشخصي (PC) للاهام واجبات المقرر</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>استخدام برامج الكمبيوتر مثلا مايكروسوفت وورد، باور بوينت، واتصال، برنامج اس بي آس اس، فوتوشوب وخلافه لانجاز واجبات المقرر</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>استخدام السبورة الذكية في الفصل الدراسي</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
</tr>
</tbody>
</table>

عزيزي الطالب،

إذا رغبت في المشاركة في المقابلة الشخصية بشأن تكنولوجيا المعلومات والاتصالات في التعليم العالي، فيرجى كتابة رقم الهاتف وعنوان بريدك الإلكتروني للاتصال بكم.

رقم الهاتف:

عنوان البريد الإلكتروني:
Appendix 3: The Interview questions

Interview ( )
Student number ( )
Gender: Male- Female
University: KU- AUK
Discipline: Humanity- science
Level of Year: sophomore - final

1. Can you describe how ICT tools used in your learning at the university?

2. Can you describe how ICT tools help you to learn?

3. Do you think ICT important to your higher education learning? Why?

4. What are the factors effecting your use of ICT positively at the university?

5. What are the factors effecting your use of ICT negatively at the university?

6. What ICT tools would you prefer to use the most with your learning? And what features attract you to use this particular tool?
Appendix 4: Approval from the Computer Science Department in the public university.

Dear Sir/Madam

Title of study: A Critical Evaluation Of The Attitudes And Relationship Between ICT And Undergraduate Student Learning At Kuwait Higher Education Institutions

I am writing to ask if one of my PhD students, Aliya Meerza, can conduct a study in your university – see details above. This study is to fulfill the requirements of full-time PhD studies at the Cardiff Metropolitan University in the United Kingdom. The study will use mixed methods approach and fieldwork will include questionnaires and interviews. All responses will be treated in strict confidence and in accordance with research ethics approved by the Cardiff Metropolitan University. Anonymity will be guaranteed for all participants. Access to the data will be restricted to the researcher and supervisors.

Informed consent will be gained from all participants and they will be free to withdraw from the project at any time without penalty and without giving any reason. If they choose to withdraw after data has been collected, but prior to any possible publication, their data will be destroyed and not included in the study.

The main use of the data will be in the context of the doctoral study, although the content might later published in academic or professional journals. In both instances, all data will be anonymised and it will not be possible to identify participants.

If you wish to clarify any issues, I would be happy to answer any

[Signature]

[Address]

Cardiff School of Education
Cyncoed Campus, Cyncoed Road, Cardiff, CF23 6XJ
Dean of School: Dr Paul Thomas Tel: ++44 (0) 29 2041 2665
General Enquiries: Tel: ++44 (0) 29 2041 2665 Fax: ++44 (0) 29 2041 2663
emil: cs@cardiff.ac.uk www.cardiff.ac.uk
Appendix 5: Approval from the Computer Engineering Department in the public university.

Dear Sir/Madam

Title of study: A Critical Evaluation Of The Attitudes And Relationship Between ICT And Undergraduate Student Learning At Kuwait Higher Education Institutions

I am writing to ask if one of my PhD students, Alyra Moerza, can conduct a study in your university – see details above. This study is to fulfil the requirements of full-time PhD studies at the Cardiff Metropolitan University in the United Kingdom. The study will use mixed methods approach and fieldwork will include questionnaires and interviews. All responses will be treated in strict confidence and in accordance with research ethics approved by the Cardiff Metropolitan University. Anonymity will be guaranteed for all participants. Access to the data will be restricted to the researcher and supervisors.

Informed consent will be gained from all participants and they will be free to withdraw from the project at any time without penalty and without giving any reason. If they choose to withdraw after data has been collected, but prior to any possible publication, their data will be destroyed and not included in the study.

The main use of the data will be in the context of the doctoral study, although the content might later published in academic or professional journals. In both instances, all data will be anonymised and it will not be possible to identify participants.

If you wish to clarify any issues, I would be happy to answer any.

[Signature]

[Signature]

Approved.

[Signature]
Appendix 6: Approval from the Administration Science Department in the public university.

Dear Sir/Madam

Title of study: A Critical Evaluation Of The Attitudes And Relationship Between ICT And Undergraduate Student Learning At Kuwait Higher Education Institutions

I am writing to ask if one of my PhD students, Alyya Mezaa, can conduct a study in your university - see details above. This study is to fulfil the requirements of full-time PhD studies at the Cardiff Metropolitan University in the United Kingdom. The study will use mixed methods approach and fieldwork will include questionnaires and interviews. All responses will be treated in strict confidence and in accordance with research ethics approved by the Cardiff Metropolitan University. Anonymity will be guaranteed for all participants. Access to the data will be restricted to the researcher and supervisors.

Informed consent will be gained from all participants and they will be free to withdraw from the project at any time without penalty and without giving any reason. If they choose to withdraw after data has been collected, but prior to any possible publication, their data will be destroyed and not included in the study.

The main use of the data will be in the context of the doctoral study, although the content might later be published in academic or professional journals. In both instances, all data will be anonymised and it will not be possible to identify participants.

If you wish to clarify any issues, I would be happy to answer any

Director of Research / Director of the School
Professor of Education / AlMuhsin Al-Hilali

Cardiff Metropolitan University
Plyrigot, Cardiff Road, Cardiff, CF5 6XJ
General Enquiries: +44 (0) 29 2041 5642
Fax: +44 (0) 29 2041 5643
Email: info@cardiffmet.ac.uk, www.cardiffmet.ac.uk

235