

**Education Policy in Saudi Arabia and its Relation to  
Secondary School Teachers' ICT Use, Perceptions, and  
Views of the Future of ICT in Education**

**Submitted By**

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I certify that all material in this thesis which is not my own work has been identified and that no material has previously been submitted and approved for the award of a degree by this or any other University.

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## Acknowledgements

### *In the Name of Allah, the Most Gracious, the Most Merciful*

All praise is due to Allah alone, I praise him, seek his aid and seek his forgiveness. I testify that there is no God but Allah, and that Mohammed (peace be upon him) is his slave and messenger.

Allah Almighty says: *“O ye who believe! Fear Allah, and (always) say a word directed to the Right: That He may make your conduct whole and sound and forgive you your sins: he that obeys Allah and His Messenger, has already attained the highest Achievement”* (The Holy Quran 33-70, 71)

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## **Dedication**

*This work is dedicated to*

*My Father Abdulrahman and My mother Nawal*

*My beloved husband Ibraheem*

*My daughters Raghad and Rund*

*For their unfailing love, support, and prayers throughout the course of this  
dissertation*

*May God bless you all*

## **Abstract**

In recent years and as a result of the increasing pace of advances in technology and especially developments in the use of ICT in schools, teachers are now expected to make routine use of ICT in their teaching. This research sought to obtain deeper insight into Saudi secondary school teachers' ICT usage and its relation with ICT educational policy, teachers' perceptions and attitudes towards the use of ICT in the teaching and learning process, and their envisions of possible and preferable usage of ICT in education in the future.

The study utilised a sociocultural approach: data was collected via interviews and self completed questionnaires. A total of 14 interviews were conducted with teachers, ICT coordinators and head teachers, and 266 teachers drawn from ten secondary schools in Riyadh City completed the questionnaire.

The findings indicate there is widespread use of ICT in secondary schools and most teachers have positive views towards ICT. Teachers pointed to a number of motivators summarised in this formula: internal incentives + school encouragement = competent ICT use in education. Three main factors were found to be hindering teachers' ICT use: time constraints, lack of training, and financial issues. Teachers' ICT use is guided by policies: the research found that teachers' ICT use is more influenced by schools' policy than Ministry of Education policy which they are either unaware of or do not fully understand because of difficulties in implementing it. Finally, teachers anticipated future changes in their role to a facilitator and advisor. Teachers hoped for comprehensive improvement of education, radical curriculum change, and continuous teacher training.

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# **Chapter One: General Introduction**

## **1.1 Background to the Study**

While computers have been used in education for the last twenty five years in many parts of the world, this has not been the case in Saudi Arabia. Here, after the teaching of computer skills as a subject had been introduced in schools in the 1980s, teaching using computers and applying them in the context of teaching and the learning of other subjects commenced in the 1990s (Al-Khathlan 2007). Such expansion has been driven by government educational policy, and involves not only the provision of the necessary hardware and software to schools, but also the training of policy executers, i.e. teachers and head teachers. This training is crucially important because it helps schools' management to change their teaching and learning practices.

Successfully incorporating ICT in education requires teachers' change of their pedagogical approach. Some teachers have not welcomed such change since it necessitates more directed usage of ICT in teaching practice and changing their current teaching practice (Al-Showaye 2002). The use of ICT changes the learning situation from a teacher- centred one, in which teachers set educational targets and aims, to a more personalised learning situation in which students have a greater role in shaping their teaching and learning experience (Al-Abdulkareem 2002;Al-Haj 2002). Teachers' varied receptivity to ICT ranges from merely small enhancements in using computers in their teaching to more fundamental changes (Cox et al. 2003b). Those teachers who resist the change are thought to be underestimating the potential of using ICT in education. Such resistance is viewed as being due to the ambiguity and lack of clarity of governmental ICT policies, which state aims and set targets without providing training, assistance or suitable guidance as to how to achieve the targets or fulfil the aims, as in the case of UK ICT policy, which refers to computers as "learning tools" but does not focus on how they should be used to serve this purpose (Blamire & Balanskat 2005).

To ease teachers' reluctance to use computers, their training should focus not only on ICT skills but also on raising their awareness of the advantages of using ICT in their teaching

(Jones 2004), because if they do not appreciate these they are likely to continue to resist usage of ICT in teaching practice (Al-Obaid 2002). The inadequacies of existing training holds Saudi teachers back from actively using ICT in their teaching, even though the hardware and software are available. A study based on data collected internationally relating to the appropriate and creative utilisation of ICT stated the following, “It is known from previous research that educational innovations usually do not succeed if teachers are not provided with the skills and knowledge needed to carry them out” (Pelgrum 2001, p.165). Insufficient teacher training results, as British studies have shown, in teachers’ low confidence in using a wide range of ICT resources. Not feeling confident to use different ICT applications inevitably affects teachers’ delivery of lessons , and prevents them from making use of available resources (Cox, Abbott, Webb, Blakeley, Beauchamp, & Rhodes 2003b). Saudi teachers’ lack of training in ICT skills and low awareness of their advantages in their teaching practice are also likely to hinder the successful introduction of educational innovations. If more appropriate training is given, their attitude towards ICT usage in teaching is likely to change. A study by (Cox et al. 2003a) found that some willing to change teachers had successful experiences of using ICT in teaching and were able to overcome many obstacles due to their confidence in the promised advantages of using computers in education.

From the above, it can be seen that teachers play a crucial role in promoting or hindering the usage of ICT in the classroom. Moreover, since they can easily transmit their beliefs and values to their students and influence their attitudes towards ICT usage in the learning environment, it is important to understand and appreciate their attitudes towards and perceptions of computers to ensure that all students have equal and unprejudiced ICT experience during their learning process (Jennifer & Michel 2003).

## **1.2 Statement of the Research Problem**

The global adoption of ICT in the education field has often been premised on the potential of the new technological tools to revolutionise and improve the educational system, better prepare students for the information age, and accelerate national development efforts. The problem with the current technology-implementation plans is not only their focus on the

potential of the technology per se, but also their failure to base their implementation efforts on research and enough information gathering. A key element seems to be left out in both the ICT plans and their subsequent implementation processes: the perceptions and views of the policy executers and the real agents of change within the classroom, namely, the teachers. It is widely accepted and applies to Saudi teachers as well that, unless teachers develop positive feelings towards ICT, they will not use it in their teaching practice (Watson 1998;Woodrow 1992).

While the study of teachers' perceptions is in itself important, of more significant importance is the identification of those factors that may influence their perceptions, either positively or negatively. Supportive and motivating factors as well as hindrances all influence teachers' perceptions and should be taken into consideration when examining them. Since the introduction of ICT into schools is imposed by policy, it is important to link the theory to practice and examine the impact of the policy on the ground. Despite the relative increase in the number of studies dealing with teachers' perceptions and factors related to them, the relationship between perceptions towards ICT and the policy that introduced it in the first place seems to be lacking in Saudi based literature. This calls for a study that investigates teachers' current ICT use and perceptions and examines the extent of educational policy impact on teachers' practice and feelings.

The purpose of this study is therefore to look at teachers' current ICT use and their perceptions towards it and investigate the impact of educational policy on teachers' feelings towards ICT. The study will also elicit teachers' views on the future of education, as it is important to take teachers' opinions on current and future issues into consideration before implementing policy, because no policy will achieve its aims and fulfil its objectives if its field executers are not fully aware of it as a result of lack of involvement or do not believe in it. Moreover, exploring teachers' views of future education will fill the gap that exists in the Saudi literature, which has overlooked the importance of eliciting the views of field executers prior to forming future policy.

### **1.3 Significance of the Study**

The importance of this research stems from its contribution to knowledge, particularly its generation of useful information to support future development in the use of computers in the educational system in Saudi Arabia. After analysing the data, it is hoped that the results of this study will:

1. provide Saudi educators with a new understanding of, and insights into secondary school teachers' usage of ICT in the classroom and their perceptions of it, indicate factors influencing teachers' ICT use, and identify enablers and obstacles of full integration of ICT in the field of education. In addition, presenting teachers' views on current ICT policy and its influence on their teaching style will enable policy makers to make decisions based on informed judgments rather than intuition.
2. provide the Ministry of Education (MoE) in Saudi Arabia with new information relating to issues which need to be considered in addressing future educational policies.
3. lead to further in-depth research on teachers' uses and perceptions of ICT.
4. give insight into teachers' views on probable/preferable future utilisation of ICT in the teaching and learning process. This will inform policy makers about the extent of their awareness of such utilisation and their expectations of new policies, reforms, or initiatives launched by the Ministry of Education and, in turn, influence these.
5. open the way for more research on the future of education in the Saudi context.

### **1.4 Research Aims**

The research aims to:

- investigate teachers' current usage of ICT in the classroom and their perceptions towards this usage
- investigate the impact of educational policy on teachers' use of ICT in their teaching practice and their feelings about ICT in the field of education
- explore teachers' views on probable/preferable future utilisation of ICT in education

## **1.5 Research Objectives**

The study seeks to fulfil the following objectives:

- To investigate the current use of ICT by teachers in their teaching practice
- To identify the reasons why teachers are using ICT in their teaching practice
- To identify the supportive influences on ICT usage
- To identify the motivators and incentives for using ICT in teaching
- To identify the factors and agencies hindering teachers' use of ICT in their teaching practice
- To explore the relationships between educational policy and teachers' use of ICT and their feelings about ICT in education
- To identify teachers' views on probable/preferable future utilisation of ICT in education

## **1.6 Research Questions**

In order to address the research's aims and objectives the study seeks to answer the following research questions:

1. How are teachers currently using ICT in their teaching practice?
  - 1.1 Why are they using ICT in their teaching practice?
  - 1.2 What are the supportive influences on ICT usage?
  - 1.3 What are the motivators and incentives for using ICT in teaching?
  - 1.4 What hinders teachers' usage of ICT in their teaching practice?
2. How do they feel about this usage?
3. How is educational policy reflected in:
  - 3.1 Teachers' use of ICT in their teaching practice?
  - 3.2 Their feelings about ICT in education?
4. What are teachers' views on probable/preferable future usage of ICT in education?

## **1.7 Organisation of the Thesis**

This thesis consists of seven chapters as follows:

*Chapter One* provides an introduction to the study and background details. The significance of the study, its research aims, and objectives and questions, and structure also presented.

*Chapter Two* describes the study setting in detail in terms of the social, cultural, and educational situation.

*Chapter Three* reviews the literature focusing on areas relating to the research questions.

*Chapter Four* describes the research design and methodology.

*Chapter Five* presents the data analysis and interpretation of the findings.

*Chapter Six* discusses the study findings in relation to the literature.

*Chapter Seven* summarises the research and main findings and recommends areas for further research.

## **1.8 Summary**

This chapter has provided the reader with an introduction to the research study. A statement of the research problem, the research aims, objectives and questions, and the significance of the study have also been presented. The structure of the thesis has also been described. The next chapter will focus on the research setting.



## Chapter Two: The Study Setting: Saudi Arabia

### 2.1 The Study Setting: Saudi Arabia

*Figure 2.1 Map of Saudi Arabia*



*Source: (Ministry of Economy and Planning 2009)*

The Kingdom of Saudi Arabia is situated in the Arabian Peninsula, and lies at the cross-roads of three continents: Asia, Africa, and Europe. It occupies approximately 2,250,000 square kilometers (868,730 square miles). It is bordered on the north by Jordan, Iraq and Kuwait; on the east by the Gulf, Bahrain, Qatar and the United Arab Emirates; on the south by the Sultanate of Oman and Yemen; and on the west by the Red Sea. Located between Africa and mainland Asia, with long frontiers on the Red Sea and the Arabian Gulf and with the Suez Canal near to its north-west border, the Kingdom lies in a strategically important position. It is the largest country in the region and the birthplace of Islam and Guardian of its most sacred shrine (The Ministry of Culture & Information 2006).

According to the 1974 census, the Kingdom's population was just over 7 million. But, since that time, the population has grown dramatically, much of which growth has been due to an

exceptionally high birth rate rather than immigration. The 1992 census gave a figure for the total population of 16.9 million, of which 12.3 million were Saudi nationals. In 2000, the Central Department of Statistics' Demographic Survey put the population of the Kingdom at 20.8 million. Of the Saudi national population, 54.3% were male and 45.7% female. Currently, it is estimated that almost half the Saudi population is under the age of 20 (Central Department of Statistics 2006).

### **2.1.1 Culture and Religion**

The kingdom of Saudi Arabia is a monarchy whose constitution is based on the Holy Book, the Quran (Koran), and Shariah Law. The King heads the government and the Council of Ministers, which are the executive and administrative bodies, respectively. Saudi culture is primarily determined by the Islamic religion. Indeed, all aspects of social and cultural life are centred on the Muslim religion and Muslim religious identity. In Saudi social life, religious morals take precedence. These moral values range from personal relations to tribal and extended family values, all of which are part of a complex web of interlocking commitments assigned to individuals within the Quran. In fact, the religion of Islam covers all aspects of the peoples' lives and places particular emphasis on education. Islam views education as a religious duty for all, males and females. Al-Salloom ( 1989, p. 37) pointed out that:

*“Islam dictates that learning is an obligation for every Muslim, man or woman. This obligation, which gives education the status of a religious duty, is the cornerstone of education in the Kingdom of Saudi Arabia. It is the foundation upon which the state builds its educational responsibilities, and in light of which, the citizen performs duties towards himself, his community, and his religion. The roots of education in Saudi Arabia therefore, go deep into the Islamic education which started in the mosque and led to the establishment of schools and universities around their pillars.”*

The dominance of religious belief and the Islamic code of conduct is all pervading and it is therefore not possible to interpret educational issues in Saudi Arabia without referring to them. It is particularly important to understand that Islam accords education a very high status. Religion and education are seen as indivisible and the purpose of education and the respect for those involved in it have their basis in religion. Hence, in accordance with the

Islamic law practiced in the country, girls' and boys' education is strictly segregated at all levels in terms of school buildings and teaching staff.

## **2.2 The Saudi Arabian Educational System**

### **2.2.1 Administration of Education**

In Saudi Arabia, all education policies are subject to government control. The curriculum, syllabus and textbooks are uniform throughout the country. The administration of education is controlled through two main agencies, namely the Ministry of Education and the Ministry of Higher Education. Though there are other governmental agencies which have some educational responsibilities, these two are the main service providers.

#### ***The Ministry of Education***

The Ministry of Education was founded in 1954 and is charged with responsibility for boys' and girls' schooling. Junior colleges, teacher training, special needs, and adult education are all under the responsibility of the Ministry of Education (Ministry of Education 2005a). Under the Ministry of Education, there are forty-two educational districts throughout the Kingdom. District offices work as links between the local schools and the Ministry of Education. The Ministry is responsible for the provision of school buildings and the organisation of construction and maintenance work. It is also charged with equipping schools, providing materials, and supplying students with textbooks. Above all, it has responsibility for the country's educational policy. Table 2.1 shows the number of schools, classes, students, and teachers in all different levels of education under the supervision of the Ministry of Education in 2005.

Level	Gender	Schools	Classes	Students	Teachers Posts	Assistants
<b>Kindergarten</b>	Coeducation	1,320	5,704	100,032	9,744	1,074
<b>Primary</b>	Male	6,525	60,585	1,272,295	97,869	2,702
	Female	6,537	54,000	1,241,990	103,499	6,516
	Total	13,062	114,585	2,514,285	201,368	9,218
<b>Intermediate</b>	Male	3,662	23,312	564,951	51,351	1,784
	Female	3,203	21,735	543,380	49,398	3,682
	Total	6,865	45,047	1,108,331	100,749	5,466
<b>Secondary</b>	Male	2,195	16,974	500,169	36,091	1,330
	Female	2,035	15,695	455,169	37,931	2,603
	Total	4,230	32,669	955,338	74,022	3,933
<b>Special Education</b>	Male	506	2,137	13,707	3,595	1,470
	Female	117	602	4,767	1,380	411
	Total	623	2,738	18,473	4,976	1,881
<b>Tech &amp; Voc</b>	Female	79	455	6,927	1,064	246
<b>Adult Ed.</b>	Male	1,051	2,114	28,374	0	0
	Female	2,577	6,981	51,415	10,253	513
	Total	3,628	9,095	79,790	10,253	513
<b>Total</b>	Male	13,939	105,122	2,379,496	188,906	7,286
	Female	15,868	105,172	2,403,680	213,269	15,045
	Total	29,807	210,294	4,783,176	402,176	22,331

*Table 2.1 Schools, Classes, Students, and Teaching Posts by Educational Level  
Source: (Computer & Information Center 2005)*

### ***The Ministry of Higher Education***

The Ministry of Higher Education was established in 1975 to supervise all aspects of higher education learning in Saudi Arabia. Before that date universities were controlled by the Ministry of Education. The Ministry of Higher Education also supervises scholarships, international academic relations, and educational offices abroad. There are twenty-one well established universities in Saudi Arabia. Students who go to university spend on average four years obtaining a Bachelor degree in the social sciences or the arts, and five or more years obtaining a Bachelor degree in other sciences such as engineering and medicine. Universities and Teachers' Colleges are the main suppliers of teachers to schools.

### **2.2.2 Organisation of Education in Saudi Arabia**

The administration of the general education system in Saudi Arabia is highly centralised. Curricula are unified throughout the kingdom and there is a curriculum department in the Ministry of Education. This department is responsible for curriculum development and the

preparation of subject textbooks. For each subject and for every grade there is a textbook which must be used in all the kingdom's schools, including public schools. The academic year is divided into two semesters, each of 18 weeks duration. The first 16 weeks are for teaching and learning activities and the last two for the final examinations. Students prepare and study for these examinations from the textbooks and teachers are expected to devise exam questions from them and not to cover any topic not included in the textbooks.

The assessment of the student is comprised of the student's work during the semester (40% of the total mark) and the mark in the final examination (60% of the total mark). In order for the student to advance to the next grade s/he must pass exams in all subjects and there are reset examinations for those who do not pass the first time. However, in accordance with the Ministry of Education's newly developed and improved curriculum, students in primary education are constantly evaluated and assessed during the academic year and do not sit final year examinations.

Education is compulsory in Saudi Arabia for all children between the ages of 6 to 15 years. Most children study in state schools. In recent years, however, many public schools have been established in the larger cities within the kingdom. General education in Saudi Arabia is divided into four stages. The pre-school stage is optional and serves children between the ages of three to six. The primary stage, which is of six years' duration, provides education for children between the ages of six and twelve. The intermediate and secondary stages, both lasting three years, are for adolescents between the ages of twelve and fifteen, and fifteen and eighteen, respectively (Ministry of Education 2005b). Since the present study focuses on teachers of secondary school students, the secondary stage of education is considered in more detail below.

**The Secondary Stage** of education prepares students for studying in higher education institutions. It is considered to be the most important stage in the general education system in Saudi Arabia and consists of three grades. All students follow the same curriculum elements during the first year, then, in the second and the third year they pursue their study in one of the following areas: Islamic and Arabic studies, Management and Social Sciences,

Natural Sciences, or Technological Sciences. However, Islamic and Arabic studies and Natural Sciences are the only pathways available for girls. The final examinations for these subjects are usually prepared by the teachers of individual schools under the supervision of the head teacher of the school. Students must pass examinations in all the subjects they are pursuing to get the Secondary School Certificate. High marks in such examinations give a student priority in university and college admission.

The secondary stage of education has benefited from the improved and developed curricula, part of “The General Project of Curriculum Development” which aims to utilise specialised human resources, technical capabilities, and instructional design strategies to design and develop high quality educational curriculum. The new curricula aim to integrate ICT use in education and develop students’ skills and encourage creativity and analytical thinking to fulfil the needs of all students (Tatweer 2008). Students now have the choice between the traditional secondary schools or the modernised secondary schools in which students are exposed to an educational environment similar to that of universities. Here, students can arrange their timetables and choose their modules and can even enrol for the summer semester. In addition, secondary school teachers in modernised schools are given more freedom of choice in their teaching practice.

The major objectives for secondary education are as follows:

1. Strengthening faith in God, making all deeds pleasing to God, and complying in all their aspects with that which he loves.
2. Strengthening loyalty to the Islamic nation, as well as aspirations for the highest social standing and developing a strong physical constitution, suitable for the students’ age.
3. Developing students’ abilities and directing them in a manner suitable for them.
4. Providing opportunities for students and preparing them to pursue their studies at various levels in higher education.
5. Preparing students to work in various fields of activity.
6. Taking care of young people according to Saudi culture, addressing their intellectual and emotional problems, and helping them towards a successful future.

7. Developing in students a positive consciousness so that they can confront subversive ideas and misleading trends.
8. Instilling in students the virtue of useful reading and the desire to broaden their scope of knowledge and fruitful work and to use their leisure time in activities that improve their character and the conditions of their community.
9. Establishing the feeling of family solidarity in order to construct the solid Islamic family.
10. Developing students' scientific thinking and entrenching in them the spirit of research, systematic analysis, the use of reference sources, and the practice of academic methods (Secondary Education 2006)

**Teachers' Colleges** offer training courses for students to teach in schools. College graduates who complete the four years of study are awarded a Bachelor of Education degree. Teacher training is seen as very important. Teacher training programmes aim to provide teachers with appropriate training in teaching methods and provide teachers qualified in specialist subjects. The Ministry of Education considers that the well-trained teacher is crucial to the learning process and can maximise the use of varied facilities available, such as the curricula, textbooks, educational technologies, audio-visual aids, laboratories, and so on. Quality teacher training programmes play an essential role in the development of the education system. The Directorate in charge of teacher training aims to upgrade the skills of teachers both by improvements in the training of new entrants to the profession and by in-service programmes for existing teachers (Department of Educational Training 2009)

### **2.3 ICT in the Saudi Educational System**

ICT as a subject was introduced to Saudi special advanced secondary schools in 1985 through three subjects: an introduction to computer sciences, programming in BASIC, and systems programming and the use of information systems. The success of the programme encouraged the Ministry of Education in 1991 to introduce computer studies as part of the curriculum in all boys' secondary schools and later in girls' schools and as a compulsory subject with two classes per week, lasting in total two hours. It should be noted that computer studies were already being included in the curriculum in public schools at both

primary and secondary stages as an optional subject at that time. Since 1999, the subjects being taught are: Information Technology, Computer Science, Computer Applications, Information Systems, and the Information Age. Various computer training programmes have been organised for both teachers and students, although they are mostly aimed at those students at secondary school.

The foregoing was the first phase of the utilisation of computers in the Saudi educational system. The second phase has witnessed integration of computers in the teaching and learning of many subjects in the curriculum as a result of the increased commitment of the Ministry of Education to develop the infrastructure of information and communication technology and its employment in education and learning (General Directorate for Planning 2005). There are a number of projects that exemplify the MoE's commitment, for example, the development of school libraries into Learning Resources Centers (LRCs) that contain information sources both in print and non-print forms, including ICT, and their integration in the teaching and learning process to create rich learning environments. Some 1500 centres have been established so far (Ministry of Education 2008). Computer-based labs are another MoE initiative that has been introduced to give students first hand experience through experimentation and hand-on activities. They represent a positive change from traditional educational methods which are based on memorization, as students are given the opportunity to learn through experimenting, observation, and induction using interactive software applications associated with computer sensors (Ibid). Digital Technical Centres (DTCs) are another new project. They have been established in various educational regions of Saudi Arabia with the aim to meet educational needs in the areas of digital content and educational application of ICT. These centres are equipped with a unit for the production of digital interactive educational aids to support school curricula (Ibids).

As a result of the government's unidirection towards increased integration of ICT in education, two further steps have been taken. First, ICT was introduced as a compulsory subject to girls' schools and to the primary stage of education in the 2003 academic year and, second, a National Project (*Watani*) has recently been launched. Its aim is to further



promote the use of computers as an educational technology as explained in the following quotation taken from its website:

*“The Schools' Net Project will connect all Saudi Schools and Educational Directorate Districts by means of a wide area network covering the entire Kingdom of Saudi Arabia and local area networks within every educational directorate and school. The Schools' Net Project will provide every student, teacher, parent and educator with a multitude of services and a huge source of reference information. The Schools' Net services and content include, but are not limited to, all subjects' curricula, educational references, electronic books, one or more Teachers' Guides, services for students and other users with special needs, course syllabuses, interactive multimedia, teacher training, school management systems, web design tools for schools, e-mail, chatting, announcements, Internet links, a students' magazine, a teachers' magazine, educational statistics, students' training, students' sites, information technology skills for all, and a Q&A bank. These contents and applications will be mostly in Arabic. The first phase of the School's Net Project will provide one million students with their IT requirements in a ratio of one PC to ten students.” (tatweer.edu 2006)*

There are six objectives of this Project:

1. To develop students' skills by exploiting and using information technology (IT) in education and thereby, prepare students in an effective manner for the future.
2. To improve teachers' potential by employing information technology in all educational activities.
3. To provide an information rich environment, scientific content, and direct educational sources for students and teachers.
4. To improve the outcome of the educational process by graduating outstanding future generations of students who have mastered the use of information technology.
5. To partake in the creation of a nucleus for an advanced information technology industry in the kingdom.
6. To create a comprehensive awareness of the benefits of employing information technology in education and disseminating knowledge of information technology throughout the society at large. (tatweer.edu 2005)

Saudi ICT educational policy covers not only students under the supervision of the Ministry of Education, but also members of the society through the Ministry's ICT clubs. These after

school clubs started offering their services in 1996 and are based in secondary schools' computer labs. Since they make use of schools' existing computers and latest technology, this saves the expense of establishing new computer labs. Such community based PC labs can help to raise ICT awareness among students, teachers and community members through affordable training courses, offering courses to improve teachers' technological competence, and making use of youths' spare time in fruitful activities. The ICT clubs play an important role in raising technological awareness among the community, as well as extend students' and teachers' encounter with computers beyond the school day. In addition, these assist in overcoming the inequalities in computer access among students as a result of the digital divide between those who have access to computers and the Internet and those who do not (Al-Zahrani 2001).

Saudi ICT educational policy takes into consideration all stakeholders involved in the usage of computers in education, including teachers as major stakeholders. The policy therefore gives attention to teacher computer training as much as it emphasises its importance for students and offers them a number of opportunities to gain or improve their ICT skills. The latest opportunity is the Jehazi project, which is a new scheme run by the Ministry of Education which enables all teachers to possess their own laptop and other equipment such as printers and scanners, at a reasonable price, no deposit required, and easy to pay settlements. This project has three main objectives: first, to raise technological awareness among Saudi teachers; second, to increase the number of teachers trained to use ICT; and, third, to increase the number of Internet users among teachers and prepare them to make use of the electronic government. The advantages of this scheme include a laptop, free 128MB memory stick (flash drive), free laser mouse, one year free Internet subscription, one year free subscription to a specialist computer magazine, a free six-hour training course at a New horizon computer training centre, free training to obtain International Computer Driving Licence ICDL, and after sale services (Jehazi.com 2006).

The future of ICT in Saudi Arabia is promising since raising ICT awareness and promoting ICT usage in all aspects of daily life, including education, is now a national policy rather than an educational one only. An example of this change in policy is the Home Computer

Initiative sponsored by the Communications and Information Technology Commission in association with The National Commercial Bank. The initiative aims to enable one million Saudi families to buy a new PC in simple and easy to pay instalments within the coming five years. The initiative includes the provision of a high quality PC working in the Microsoft Windows environment and Microsoft Office Professional, free one year maintenance, 15 hours Internet subscription per month, free educational CDs, and computer training offered at low affordable prices (Communications and Information Technology Commission 2006).

## **2.4 The Objectives of Introducing Computers to the Saudi Educational System**

The objectives of educational policy in Saudi Arabia are:

*“to ensure that education becomes more efficient, to meet the religious, economic and social needs of the country and to eradicate illiteracy among Saudi adults” (Ministry of Education 2005b).*

It can be seen that the above statement is very general and does not provide any direct reference to the aims of teaching with computers in Saudi Arabia. The ICT policy stated in the National Project operationalises the above mentioned educational policy and provides more details about its objectives. Though the objectives exist, not all policy executers, i.e. head teachers and teachers, are aware of them. However, such aims and objectives are made clear to students in their textbooks since they are expected to achieve the following outcomes:

1. To prepare students to live in an advanced technological environment where computers and databases are the basis for development and to encourage the expansion of such technology;
2. To develop students' mental skills, such as problem-solving, creativity, understanding, organising, and information analysis, and to develop students' potential through the use of computers as an educational tool;
3. To strengthen the spirit of teamwork among students through the medium of group work; and

4. To enable students to appreciate the importance of computers in a developed society, so they can realise the practical application of computers (Al-Wakeel et al. 2002; Al-Wakeel et al. 2005).

## **2.5 Summary**

From the above brief description of the educational system in Saudi Arabia, it can be seen that an increasing importance is being paid to ICT in education in particular and in the country as a whole in general. Introducing ICT into education is now a governmental tropism towards improving and developing the current educational system so that Saudi Arabia will be able to compete with other developed nation. Notably, since half of its population are of school age, educational issues are of particular importance for this young nation.

## **Chapter Three: Theoretical Foundation**

This chapter will trace and discuss relevant literature in the area of teachers' ICT usage in teaching and their perceptions towards this usage, as well as their views on the future of ICT in education and its relation to education policy. The chapter is divided into three main sections: the first deals with contextualising the study socioculturally, which will assist in understanding the theory underpinning this study; the second discusses relevant literature that answers the study's research questions; and the third and final section presents the study's theoretical framework.

The following section's aim is to contextualise the study in terms of the sociocultural situation and situate it within previous related literature. This enables the introduction of the overall framework of the study and establishes the study's theoretical base in sociocultural theory.

### **3.1 Contextualising the Study Socioculturally**

The most fundamental concept of sociocultural theory is that the human being's mind needs mediating tools to communicate and create relationships with others as well as express itself and reveals what is in it (Lantolf 2000). These tools vary according to the situation, and include signs, symbols, numbers and, most importantly, language. These tools are passed on from one generation to the next, and each generation modifies them to fit their needs and the current cultural, social and political situation. These tools are therefore situated in culture. Sociocultural theory states that to understand the human mind and actions one needs to understand these mediating tools through an understanding of the environment from which they have emerged, which encompasses the physical environment and the social and historical surroundings, in addition to internal aspects such as the individual's beliefs and knowledge (Murphy & Iverson 2003). In sociocultural theory, the emphasis is on semiotic mediation, with particular emphasis on speech, which provides a useful amount of data for research purposes (Daniels 2004).

Taking sociocultural theory as the theoretical framework of this study will provide important insights into teachers' views and perceptions of ICT in education, since the main

mediating tool is language, although there are other tools, such as signs or gestures through which the feelings, perceptions, ideas, experiences, and information derived from teachers may be expressed. Without language I will not be able to access this knowledge; however, in order to deeply understand it and be able to synthesise it, I have to be aware of the culture in which this knowledge is situated. I have to put the information provided in the context of the current culture and relate it to the bigger picture of the situation. This will add to the richness of the analysis. Notwithstanding, the process of interpreting the information provided by teachers and situating it in the sociocultural context is highly dependent on the researcher who should ideally be part of the culture to which the teachers belong. This is a strong point of this study since the researcher was born and lived within the cultural boundaries of the study.

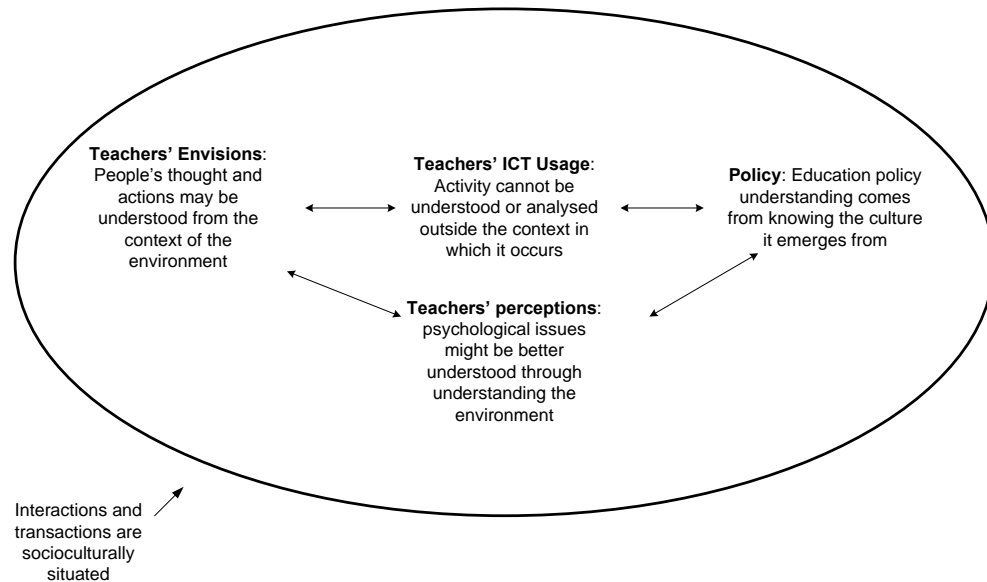
Additionally, individual mental functioning is inherently situated in social, cultural, institutional, and historical contexts. Therefore, to understand human thinking and learning, one must examine the context and setting in which that thinking and learning occurs (Bonk & Cunningham 1998) and, by extension, thinking cannot be understood independently of peoples' feelings to any situation and their responses to it (Murphy & Iverson 2003). One of the major strengths of sociocultural theory is that it goes beyond cognition and it takes account of how people feel about a situation and how they respond to it. It takes into consideration the affective and the conative as well as the cognitive. This is particularly important in the present study since encouraging teachers to both reflect on and project situations is not an entirely cognitive activity; they will be drawing on how they feel about the situation and this includes affective response as well as cognitive response and for that reason sociocultural theory is an ideal and important tool.

Utilising a framework such as sociocultural theory, which takes into account the historical and cultural basis of teachers, including all institutionally based knowledge, routines, views, and expectations, is vitally important because teachers' values, feelings, perceptions, and dispositions are an embodiment of their way of living and interaction with their environment. The school environment has many entities, such as teachers, students, staff, parents, resources, curricula, facilities, finance, regulations, and policies, which all interact

and influence each other, creating continuous development and change within the school. Moreover, the school's environment is influenced and affected by other external factors that have an impact on it, such as the surrounding community, other schools, the local education authority, MoE, the current social and economic situation of the country and peoples' religious beliefs. There are also many internal entities and factors that continuously interact with each other within the school environment, and the introduction of ICT use in educational activities in any school can be considered an important factor that can change and influence the flow of interaction between entities and factors. Accordingly, activity cannot be understood or analysed outside the context in which it occurs (Jonassen & Rohrer-Murphy 1999), hence, teachers' usage of ICT in teaching is an activity that should be understood and related to the context in which it occurs, i.e. the education system in general and the school environment in particular. Therefore, to conduct the research in Saudi Arabia I have to understand how people are transacting with their environment, both physically, socially and psychologically. A common mistake is to describe and focus on the physical aspects only of any situation. Since communities and individuals construct meaning out of their physical, social and psychological interactions, a researcher, in turn, should take all these into consideration to allow a better understanding and hence interpretation of collected data.

To illustrate this argument, no one can truly understand and appreciate educational policy in Saudi Arabia without understanding its basis and roots, aims and objectives, which should all be interpreted within the sociocultural situation in Saudi Arabia utilising sociocultural theory. Teachers' usage of and perceptions towards computers (psychological) cannot be fully understood without understanding the environment, i.e. the culture (social) and educational environment (physical and social) they are in. We therefore need to use sociocultural theory as a lens through which we look into the situation to assist in understanding and appreciating it. Figure 3.1 illustrates the contextualising of the study.

*Figure 3.1 Contextualising the Study Socioculturally*



### 3.2 Review of Related Literature

This section will trace and discuss relevant literature in the area of teachers' usage of ICT in secondary education and their perceptions of this usage. Issues related to educational policy and the future of education will also be discussed in order to cover issues investigated in prior studies of relevance to this study's research questions.

Saudi Arabia, like other developing countries, has a relatively short experience with ICT use in education, because it was officially implemented throughout secondary schools less than ten years ago. ICT was introduced into education after numerous calls for the development and reform of education. Saudi policy makers in the rush to catch up with developed countries introduced ICT related policies which were borrowed from those developed countries without conducting their own locally based research which would have assisted them in the initial phase of ICT introduction. Therefore, the role of the study, which is conducted in the local context of Saudi Arabia, is to try to fill the gap which exists in the locally based literature.



The review of the literature is organised in relation to the research questions. During the literature review, the research questions will be raised and literature relevant to them will be presented. Because of the limited amount of research in this particular field in Saudi Arabia, the literature reviewed is a combination of relevant literature from different countries and Saudi studies. Analysis of relevant studies investigating issues related to ICT in education revealed the following: first, most Saudi studies were small scale, unpublished research projects conducted to fulfill degree requirements (i.e. Master and PhD dissertations), and, second, most studies had focused on the impact of ICT on specific subjects, such as Mathematics, Science, and Geography. In addition to the lack of Saudi based ICT related studies, most of those which had been carried out had been based on Western theoretical frameworks. The use of sociocultural theory in this study implies reviewing and discussing local Saudi studies, however, the theoretical aspects of this study are mainly discussed using Western based literature, still practical Saudi studies are discussed as well. It is important to note that in the present study, the words “perceptions” and “feeling” are used interchangeably and considered to be synonyms, therefore, studies in this review include ones exploring perceptions and attitudes in the sense of feelings rather than behaviour or state of mind.

The review of the literature commenced by physically searching library books, journals, and abstracts, and electronically by using ‘ICT’ ‘ICT and education’ ‘secondary education’ ‘teachers’ perceptions’ ‘attitudes’ ‘policy’ and ‘future education’ as key words in search engines, academic databases, such as the Web of Knowledge, Google Scholar, ACM Portal, and ERIC, and electronic journals. Perusal of the first book and article led to other books and articles referenced in them, which references continued to grow like a trundling snowball. During the literature search, a log was kept with all references using Reference Manager 10 software.

### **3.2.1 Teachers’ Usage of ICT in Teaching**

Information and communication technologies have influenced and changed many aspects of our modern life, including education. Teachers in developed countries are expected to make more use of ICT and extend its use beyond specialist subjects to the everyday practice of

teaching and learning. The systematic use of ICT in education is becoming increasingly important because of the different roles it can play and its promised advantages for the teaching and learning process. ICT, as Cohen (2000, cited in Nichol & Watson 2003) stated, gained its importance in schools due to the different possibilities it can offer education. ICT, as viewed by teachers and students, can increase enjoyment in lessons and make learning more attractive, which increases attention and motivation. Moreover, ICT offers students the possibility of individualised learning experiences according to their needs and abilities, thus increases the ease of learning. ICT also offers new educational methods which aid ones currently practiced. Further, in the future, ICT is expected to play a major role in changing the traditional classroom as well as the role of the student, from one of being taught to that of independent learner, and the role of the teacher as expert to that of facilitator, manager and collaborator in the learning process (Al-Hadlag 1998;Muir-Herzig 2004;Wasserman & Millgram 2005).

In addition to enhanced learning and increased motivation, there is a lot of literature on the perceived advantages of ICT in education. ICT usage in the classroom can assist in delivering the curriculum by using real world problems and provide scaffolds and tools to enhance learning. The interactivity of ICT is an important feature that rationalises its use in teaching as it can offer students feedback on their performance, the ability to reflect on their ideas, test and revise their understanding and report their progress which will result in greater independence of learning. ICT also offers teachers and students access to a huge volume of knowledge literally at their finger tips, and provides them with the opportunity to expand their learning and become part of a learning world by joining and subscribing to educational websites and forums and communicating with others (Baines 2005;Kozma 2003).

The advantages to be gained from ICT usage in education are among other reasons for its use. There are according to Hawkrigde ( 1989), three rationales for ICT introduction into schools:

- Economic rationale: it is necessary for a society to satisfy its requirements to have skilled technological workers. Baines ( 2005) pointed out that the conventional structure of employment is breaking down and there is an emerging range of work patterns requiring new skills. Thus, learning has to be related to future jobs and careers.
- Social rationale: all students should know about and be familiar with ICT as a preparation for their future active roles in society and to become well informed citizens.
- Pedagogical rationale: this realises the role of ICT in improving and enhancing teaching and learning.

Smerdon et al. ( 2000) pointed to the fact that life and work places have changed dramatically as a result of the introduction of ICT and so have the required skills and knowledge children will need to become active members of their societies. Accordingly, the educational experiences children are exposed to at school should adapt to the changes in the world around them. Thus, Watson ( 2001) offered two rationales for ICT use in schools. The first is learning about ICT tools and skills to reflect the use of ICT in the outside world, the second is learning with and through ICT to enrich and extend learning and increase students' confidence in utilising ICT to perform everyday applications. Al-Saif ( 2006) added other rationales:

- Social rationale: as a result of widespread use of ICT in all life aspects, ICT competence has become an important indicator of one's competency, especially in the workforce market. Therefore, ICT competency is on some occasions an indicator of the social antecedence of individuals.
- Motivation rationale: a well designed ready made software motivates its users to create and invent new uses with the features it offers and that opens up new horizons to develop and improve their skills.
- Informatics rationale: besides the importance of manufacturing the component parts of ICT, it is equally important to prepare highly qualified human resources capable of software engineering. That is the core of technological development developing countries are concentrating on as it will have a positive impact on their economies.
- Special needs rationale: the requests of special educational needs students, including the gifted and talented, will be met by either artificial intelligence software or software

which is designed based on constructivist educational methods to provide scaffolds and tools to enhance students' learning.

However, in my view, it is important here to differentiate between the rationales for ICT's introduction in schools and the reasons for its use. As far as I am concerned, the rationale for ICT's introduction in schools is associated with educational policy, and its validation and justification are the responsibility of policymakers, whereas the reasons for ICT use are linked to teachers who usually find specific reasons that motivate, encourage, and incentivise them to utilise ICT in their teaching. Many studies have investigated the reasons that motivate teachers to use ICT in their teaching practice. Generally speaking, they are related to the advantages to the teacher, student, or the process of delivering information. Wishart & Bleas (1999) listed a number of reasons, such as ICT increasing motivation to learn and increasing ease of learning because it is enjoyable and interesting to use. The enjoyment aspect of ICT use has another positive effect as it attracts attention and increases concentration, which enables more independent learning (Ibid). Learning and working, according to Downes (2001), have become much easier using ICT. In the report entitled "Making better connections", Downes (2001) listed four goals of introducing ICT into the classroom: ICT as an object of study, ICT as a tool for learning, ICT as integral to both subject matter and pedagogy, and ICT as integral to the reform of schooling in terms of pedagogy, content, and organisation and structure of schooling.

In addition to students' interest and enjoyment of technology, Baines (2005) pointed to other reasons for teachers' ICT use. They include the ability to do and build things using different software, the ease of getting, using and presenting information, it facilitates greater independence of learning for the students, and it promotes the importance of communication for different purposes, which is "a life core skill". Other reasons were mentioned in Wasserman & Millgram's (2005) study of the changes in the approaches of teachers following computerisation of schools. Reasons for ICT use were the very same benefits they expected to gain from it and included: reinforcement of weak students, development of cognitive abilities, individual learning, broadening knowledge of topics,

improvement in schedule, diversification of teaching methods, and increase in students' motivation.

In light of the aforementioned reasons for ICT use, it can be argued that since ICT serves different needs of teachers, their use of it will vary according to those needs. Teachers' usage of ICT has been the focus of different studies that have tried to categorise and define it according to place, time, and purpose of use:

*“In some cases, teachers' use of technology is specific to their use while delivering instructions in the classroom; in other cases, teachers require students to use technology to develop procedures or to facilitate learning. In still other cases, teachers' use includes emailing, lesson preparation and record keeping as well as personal use. Despite the many ways in which teachers may use technology to support their teaching, research on technology often lacks a clear definition of what is meant by teachers' use of technology” (Bebell, Russell, & O'Dwyer 2004, p.45).*

Because teachers' use of ICT varies according to their different needs, other definitions are to be found in the literature. For example, the International Association for the Evaluation of Educational Achievement (IEA) 1992 survey defined a “computer-using teacher” as someone who “sometimes” uses computers with students. Becker ( 1994) took another approach in defining teachers' ICT use. In his view, if at least 90% of a teacher's students use computers in their classes in some way during the year then that teacher is a “computer-using teacher”. It can therefore be seen that there are two approaches to define teachers' ICT use. The first is related to the use of ICT for instructional delivery and the second is concerned with students' hand-on-time during classes. These early definitions of ICT use have come to be viewed as outdated and limited in light of the recent advances in software and the increasing use of the Internet. Moreover, some teacher daily activities which were performed manually are computerised now, such as record keeping, marking, and lesson planning; which means teachers' increased ICT use is not directly related to instructional delivery. Accordingly, recent surveys of teachers' ICT use have had to take into consideration for more different uses of ICT.

In 2000, a report by the National Centre for Educational Statistics in the US (Smerdon et al. 2000) differentiated between different types of teacher ICT use, especially instructional and

non-instructional use. The vast majority of teachers were using ICT for non-instructive activities that were supporting their role as teachers, for example, creating instructional materials, administrative record keeping, communicating with colleagues and parents by email, and posting homework and assignments on the Internet. Another US study (Rowand 2000) measured different aspects of teachers' ICT use, which included teachers' usage of ICT for the following: creating instructional materials, keeping administrative records, communicating with colleagues, gathering information for planning lessons, presenting multimedia classroom presentations, accessing research and best practices for teaching, communicating with parents or students, and accessing model lesson plans. In terms of the ways teachers use ICT in the classroom, the literature reveals supportive use, instructive use, and a combination of both supportive and instructive use. Supportive use of ICT is exemplified by teachers who use it to support their current practices, such as lesson preparation, drills and practice, management and communication (Becta ICT Research 2005). Teachers who use ICT for instruction are characterised by their use of the technology for classroom instruction, such as using computer software and ICT for activities that involve higher order thinking, such as interpreting data, reasoning, writing, solving concrete, complex, real-world problems, and conducting scientific investigations. Recent studies show that teachers' use of computer technology is mostly for supportive rather than instructive purposes. One study found that teachers generally used computer technology to support their existing practices (such as practice drills, demonstration), and for communicative purposes (such as a medium for communicating information) rather than instructive use, such as using ICT for activities that involve higher order thinking (Becker 2001).

It can therefore be seen that some define teachers' ICT usage solely as "teachers' use of technology for delivery, while others view it as a generic measure of the collected technology skills and uses of a teacher" (Bebell, Russell, & O'Dwyer 2004, p.48). Recent studies have considered all uses by teachers, since even if they are not directly benefiting their teaching, they still have a positive impact on increasing self motivation and confidence.

Having discussed the actual definition of teachers' ICT use, it is useful to review the present status of ICT use among teachers. Becker's study of Internet use by teachers found that the most frequent use of technology across all subjects was not instructional use but "professional use of technology related to the day to day needs" ( 1999, p.31). Making handouts for class was one of the most frequent uses of ICT reported by teachers, 66% of whom reported doing so at least once weekly. Half of teachers reported using ICT for record keeping and student grading, and two-thirds reported using the Internet for lesson planning. In the same study, 68% used email for communication. A more recent study by Bebell, Russell, and O'Dwyer ( 2004), found that teachers used ICT for varied activities that ranged from class preparation, professional email use, use of ICT for delivering instruction, accommodating students' needs, teacher directed student use of ICT during class time, teacher directed student use of ICT to create products, to teachers' use of ICT for grading. An international study of technology and classroom practice by Kozma ( 2003) provided extra information regarding teachers' ICT use it found that 78% of teachers who participated in the study used productivity tools to produce products or presentations, 71% used web resources to search for information, and 68% used email to support communication. As regards software type, 52% used multimedia software, 34% used web design software, while only 13% used specialist educational software. In terms of place of use, 94% used ICT in school, either in the classrooms, the library, or computer laboratory, 28% used ICT outside school.

Al-Showaye's ( 2002) study of teachers' use of computer based information technology in Saudi intermediate and secondary schools is one of only a few studies in this field conducted in Saudi Arabia. It showed that Saudi teachers have similar patterns of ICT as their counterparts in Western countries. The researcher found 76% of teachers used word processors, a high percentage reflecting, he stated, the increasing recognition of the usefulness of word processing packages to produce study materials for use in teachers' classes. Computer games were used by 54% of teachers while 28% used spreadsheets. The least used applications were presentation programs and data bases, 12% and 10%, respectively. As regards teachers' use of the Internet, 53% accessed it, 52% used search engines, and 48% had an email. The reviewed studies suggest that while the majority of

teachers were using technology to support their teaching most of this use was taking place outside class time (Bebell, Russell, & O'Dwyer 2004).

### **Supporting Factors, Incentives, and Motivators for ICT Usage in Teaching**

While it is important to identify how ICT is used in the classroom, it is more important to find out reasons for teachers' use or little use of it, and identify factors that support and motivate its use. Some studies refer to such factors as 'enabling factors'. It is also important to identify those factors that hinder teachers' use of ICT. Taking into consideration supporting and non-supporting factors when head teachers and policy makers are forming and implementing policies will help to promote the use of ICT in teaching. The worthiness of acquiring such information was demonstrated in a Becta study (Jones 2004) that indicated simultaneous knowledge about obstacles and barriers to ICT implementation at whole school and individual teacher level can reveal the patterns of matches and mismatches between a school and an individual teacher's requirements. Such knowledge provides a framework that can be used to better understand teacher needs and increase the likelihood of the school providing them. Not a lot of research dealing with this issue has been carried out in Saudi Arabia, but there have been some recent Western studies of factors supporting teachers' implementation of ICT and barriers to their use of it. Scrimshaw (2004) carried out a study of enabling factors that are most effective in encouraging teachers to use ICT. The study used evidence from literature sources that recommended effective ways to overcome the barriers (Jones 2004) and from an online survey of practitioners' views of factors that facilitated or enabled them to integrate ICT in their teaching. Factors encouraging teachers to integrate use of ICT in the classroom were categorised as: (1) individual level enablers, such as access to own personal laptop, availability of high quality resources, unlimited access to software and hardware, high level of technical support, access to an interactive whiteboard, and availability of good quality training; and (2) whole school level enablers, such as onsite technical support, staff ICT training programmes, support from senior management, whole school policies on ICT use across the curriculum, provision of interactive whiteboards in all classrooms, and effective timetabling of rooms and equipment and access to resources. Three other categories of enablers were also identified: ensuring awareness, capability and confidence in using ICT



in teaching, ensuring the required access to reliable systems, and emphasising the educational benefits of using ICT.

Granger et al. ( 2002) interviewed teachers and head teachers in four schools. They identified several emerging conditions that supported successful use of ICT in teaching and learning, based on social perspectives. The conditions were: informal ICT education or “just-in-time” learning where teachers gain more knowledge about ICT during informal discussions or Internet surfing than formal workshops on ICT; supportive and collaborative relationships among teachers; commitment by the school community to pedagogically sound implementation of new technologies; and administrative encouragement, especially by the head teacher. This is consistent with Williams et al.’s ( 2000a) findings in their study analysing teachers’ needs during the integration of ICT in schools. They identified three interrelated categories of need: access to ICT, training, and ongoing support.

Mumtaz ( 2000) reviewed the literature from the previous twenty years (1980 to 2000) investigating factors affecting teachers’ use of ICT and found three interlocking factors affected teachers’ uptake of ICT: the institution, the resources, and the teacher. Although the literature reviewed appear outdated and many things have changed throughout the years the structure that came out of it is still relevant. First, the school as an institution did not allocate ample time for teachers to manage time for ICT implementation, and did not provide a supportive network for teachers to use ICT. Second, limited resources (such as lack of computers and software in the classroom) impeded the take up of ICT at a desirable level. It is interesting to find that limited resources is still a problem despite the increasing amount of resources available for teachers in the present because at that time limited resources meant there are no computers whereas nowadays it means not enough computers. Finally, teacher personal factors influenced the use of ICT in the classroom, which were grouped as follows:

- Personal factors included teachers’ beliefs and attitudes, commitment to professional learning, and background in formal computer training.
- Social factors included influences from the principal, colleagues, support of the school, school and national policies

- External factors included the availability of resources, access to resources, quality of software and hardware, and ease of use.

Other studies that have provided further evidence for the influence of each of the above three factors on ICT use are presented below.

***Personal factors:*** In Mumtaz'a ( 2000) study, the factors found to be the most important to teachers in their teaching were: making the lessons more interesting, easier and more fun for them and their students, more diverse, more motivating for students, and more enjoyable. Additional personal factors were: improving presentation of materials, allowing greater access to computers for personal use, giving more power to the teacher in the school, giving the teacher more prestige, making the administration of teachers more efficient, and providing support through the Internet. Ensminger et al. ( 2004) found personal factors that supported and motivated teachers' ICT use included internal and external incentives. In the study of (Downes et al. 2001), Internal incentives centred on personal rewards were found to be the primary incentives for teachers to acquire new ICT skills. These rewards included opportunities to provide innovative instruction and apply new teaching techniques as well as self-gratification, fulfilling a personal desire to teach, recognition of their work, peer recognition, and remuneration.

***Social factors:*** Teachers tend to comply with the social expectation of significant others (such as head teachers, colleagues, students and professional bodies) opinion, termed subjective norm, with regard to computer use in teaching (Marcinkiewicz & Regstad 1996). This means that teachers will not be motivated to use computers if they perceive that the significant others think it is not necessary or desirable to use computers. For example, Czerniak et al. ( 1999) found that teachers' enhanced uses of educational technology in the science classroom were influenced by their colleagues, parents, and community members. Other studies have shown that teachers will sustain their use of ICT in the individual subject if there is support from colleagues (Preston 1999), senior staff (Norton, McRobbie, & Cooper 2000) and head teachers (Mulkeen 2003).

In addition to the important role of head teachers' and senior management's positive attitudes to ICT in education, leadership style can be a major influence on successful integration of ICT use by teachers in the classroom (Williams et al. 2000b). Teachers need to receive continuous and ongoing support in terms of technology use and its integration into teaching as well as training. The management should encourage teachers' use of ICT through support and communication (Ensminger et al. 2004).

**External factors:** External factors found to influence ICT use were noted by Williams et al. (2000b) in a questionnaire survey involving 300 primary schools and 100 secondary schools in Scotland. Factors inhibiting secondary teachers' use of ICT were their lack of skills and lack of familiarity with the Internet and lack of available Internet access. Czerniak et al.'s (1999) survey involving 250 private and public school teachers in Ohio, US, found external factors, such as availability of resources, support for use of technology, and opportunities for staff development enhanced teachers' use of ICT. Moreover, quality training was identified by a number of studies as a major factor influencing teachers' use of ICT and the key to proper integration of ICT in teaching. ICT training should start with basic skills to help get teachers started and raise their awareness and introduce them to software to eventually build up their confidence (Al-Aqaily 2002; Wasserman & Millgram 2005). Training should also employ a holistic approach in terms of skills, knowledge, relevance to educational goals, support to encourage progression beyond any formal training, priorities, and delivery (Williams, Coles, Wilson, Richardson, & Tuson 2000b). Training should be appropriate to classroom use, have a hands-on practical element, provide on the spot help, provide opportunities to work and share ideas with other teachers, and have a pedagogical focus. It should also take into account teachers' varying needs, be sustained, continuous and flexible (Scrimshaw 2004). Time is another issue that is usually associated with the uptake of ICT. Teachers, as Scrimshaw (2004) has indicated, need a longer lesson time in order to effectively integrate ICT in their teaching, and time should be especially allocated for training and practicing the use of ICT in and out of the classroom. These are considered important supporting factors for teachers' effective usage of ICT (Ensminger, Surry, Porter, & Wright 2004).

Supporting and motivating factors for ICT implementation and the reasons and conditions for successful implementation appear to depend upon the teacher and school at large. However, the teacher plays a particularly important role in accomplishing and achieving the tasks and goals of ICT implementation programmes.

### **Hindrances to ICT Usage in Teaching**

Having discussed supporting factors, it is important to consider hindrances to ICT use. In this study, the terms ‘hindrance’ ‘obstacle’ and ‘barrier’ are used interchangeably. There are many factors that act as hindrances to teachers’ use of ICT, thus affecting their motivation to practise teaching with it. Similar to incentives, barriers to ICT use can be divided into internal and external on the basis of their sources. Rogers ( 2000) defined internal barriers as the ones related to teachers’ attitudes and perceptions towards ICT in addition to their competency with ICT, whereas external barriers are related to the availability and accessibility of hardware and software, technical support, management support, and continuous training programmes. However, there are some barriers that may be viewed as both internal and external, for example, lack of time.

External hindrances to ICT use by teachers include insufficient access to hardware and software, lack of time to prepare lessons with ICT, and inadequate technical and managerial support. According to Muir-Herzig ( 2004), among the major barriers to integrating ICT in schools are lack of teacher time, limited access, lack of rationale for ICT use, lack of teacher training and managerial support, need for teacher training, and the lack of expertise. Ertmer ( 1999) indicated that teachers may not be able to integrate ICT into instruction if schools do not provide enough support, training, time, and equipment. Teachers in several studies identified lack of time as a major barrier to their ICT use (Franklin et al. 2001). Other barriers identified included not enough computers especially allocated for teachers, lack of good instructional software, difficulty in accessing the Internet, lack of release time for teachers to learn, practise, or plan ways to use computers or the Internet, lack of time in schedule for students to use computers, inadequate training opportunities, lack of administrative support, lack of support regarding ways to integrate ICT into the curriculum, and lack of technical support and advice (Downes, Fluck, Gibbons, Leonard, Matthews,

Oliver, Vickers, & Williams 2001; Smerdon, Cronen, Lanahan, Anderson, Iannotti, & Angeles 2000; Williams, Coles, Wilson, Richardson, & Tuson 2000b).

Regarding internal hindrances, Scrimshaw (2004) offered four possible explanations for teachers not using ICT:

- Existence of teachers' views about ICT as being incompatible with their wider educational beliefs.
- Existence of obstacles associated with personal characteristics of teachers, such as lack of computer skills.
- Existence of social obstacles to increase level of ICT uptake, such as lack of support from colleagues.
- Existence of obstacles in school to expand ICT use, such as lack of technical support.

Pelgrum (2001) outlined four material obstacles and six non-material obstacles to ICT implementation. Among the material obstacles were insufficient numbers of computers, insufficient peripherals, not enough copies of software, and insufficient numbers of Internet-ready computers. The non-material obstacles were teachers' lack of knowledge and skills regarding ICT, difficulties in integrating ICT in instruction, difficulties in scheduling enough time for students to use computers, insufficient time for teachers to learn or practice ways to use computers, lack of supervisory staff, and lack of technical staff. Further, teachers can neither learn computer skills nor integrate ICT into curricula without having good access to computers. Clearly, lack of appropriate material resources inhibits learning and causes frustration and resistance. Further, the availability of full-time technical support and significant opportunities for teacher training in ICT use are as equally important as the availability of up-to-date equipment (Granger et al. 2002). In addition to the material barriers mentioned previously, Haydn & Barton (2008, p.442) emphasised the importance of the availability of data projectors in ordinary classrooms as this will facilitate regular ICT use during lessons in day to day teaching. Computers will then be used "not as a special event or to impress others but naturally when the need arises".

Jones ( 2004) wrote a report on the results of Becta's online survey of 170 educational practitioners regarding their perceived barriers to the use of ICT. The report outlined a number of barriers to the uptake of ICT that were grouped into teacher level barriers and school level barriers. The teacher level barriers were related to teachers' (1) personal deficiencies, such as lack of confidence, and lack of competence (due to lack of time for training, lack of pedagogical training, lack of skills training, and lack of ICT focus in initial teacher training); (2) resistance to change and negative attitudes; (3) anxiety; (4) inequalities, such as age and gender differences; and (5) lack of perceptions of benefits of ICT use. School level barriers were identified as: (1) lack of time scheduled by schools for teachers to use ICT, (2) lack of access to resources (due to lack of hardware, poor organisation of resources, poor quality of hardware, inappropriate hardware, lack of teachers' personal access to ICT resources); (3) technical problems (fear of things going wrong, lack of technical support); and (4) impact of public examinations. The Becta study indicated that there were interrelationships between each of the identified barriers to ICT use. For example, teachers' confidence was directly affected by other barriers such as personal access to ICT, availability of technical support, and the amount of training. In general, although the studies reviewed above used different terms such as material/nonmaterial obstacles, and teacher/school level internal/external barriers, the main obstacles or barriers to ICT use appear to be common across countries, and the obstacles or barriers are inter-related.

The Saudi Arabian educational scene has been the focus of similar studies investigating factors that hinder teachers' ICT use. Al-Showaye ( 2002) studied the use of computer-based information technology and the Internet in Saudi intermediate and secondary schools. A total of 143 teachers filled in a questionnaire and 10 were interviewed. A total of 16 factors were identified, the most important ones being lack of time and technical support, inadequate computer facilities, large class sizes and not enough computers, outdated computer facilities, and lack of training. The study findings pointed to there are three major influences on teachers' uptake of ICT: school management, parents and students. Barriers associated with school management included: head teacher not persuaded that students need to learn to use ICT and their continuous interference in teachers' teaching methods,

particularly their use of computer technology, and educational supervisor instructions requiring teachers to do administrative tasks unrelated to their teaching thereby burdening them with tasks unrelated to their main role as teachers. This has an affect on the time they can spend on preparing and presenting lessons using ICT. The barriers related to students included: students reluctant to seek assistance from teachers and to ask them about any difficulties with or any misunderstanding about the use of ICT, and students unenthusiastic about the use of ICT. Parent related barriers were: illiteracy among some parents and their lack of awareness having a negative effect on students' attitudes to the use of computers, lack of parental interest in children learning to use computers, parental misunderstanding of the role of the computer and or mistakenly considering it to be a tool for entertainment. Parents' negative perceptions towards ICT impacted on their children's perceptions towards ICT and their willingness to learn and improve their skills, and on school management since they complained about ICT use and argued that teachers should use ICT less and focus more on educational issues.

Al-Ghamdi's ( 2001) study on the reality of ICT in secondary education mainly focused on materialistic barriers which included: few and outdated computers and resources, lack of local networks, crowded classes, lack of maintenance, and unsuitable computer laboratories allocated in small rooms with poor lighting and ventilation. Non-material barriers included: few training courses on recent developments in ICT, teaching many classes, lack of time, scheduling problems, and teachers' weakness in mastering pedagogical teaching methods. Although Al-Saif's ( 2006) study of computer use in secondary schools was undertaken in girls' schools, hindrances to ICT use were found to be similar. However, Al-Saif's study added to the previously mentioned barriers: lack of teacher training on producing programs, the state of unconcern towards ICT use, high cost of maintenance, lack of Arabic educational software, and fear of damaging computers. Al-Asmari's ( 2005) study specifically investigated the use of the Internet among EFL teachers at Technology Colleges, and although the study was conducted in Higher Education Institute, the factors inhibiting ICT use were found to be the same, namely: hardware not working, insufficient number of computers, lack of resources, lack of support, limited access to computer labs and the Internet, insufficient number of technicians, insufficient Internet infrastructure,

busy or slow Internet connection, server down, lack of time, cost of Internet connection, inappropriate content and inappropriate use of the Internet, and unorganised and unreasonable censored off content by the government. Al-Obaid ( 2002) added another significant barrier to teachers' Internet access, i.e. their poor English since most of the specialist quality educational content is in English.

Extending this review of the extant literature to studies conducted in countries in the Arab world neighbouring Saudi Arabia revealed the same hindrances and barriers to ICT use in these countries. A Qatari study on the benefits and barriers to implementing computer use in Qatari elementary schools by Al-Ammari ( 2004) found that the most frequently mentioned external barriers were lack of time, length of the curriculum, too many students and few computers in labs, few computer periods, students' lack of computer skills, and lack of technical support and assistance. Internal barriers included teachers' lack of computer experience and knowledge, lack of understanding of computer importance, fear of losing control over students in labs, fear of equipment failure, feeling uncomfortable using computers, and fear of damaging computers. Al-Khateeb's ( 2007) study on barriers to ICT use in Jordanian schools found that all 170 participating teachers encountered many barriers to their attempt to use ICT in their teaching. However, the most frequently mentioned barriers were hardware related, such as lack of maintenance, lack of data projectors, and lack of ICT resources.

Being aware of the hindrances, barriers, and obstacles that face teachers when using ICT is very important, since the implementation of ICT in schools may not be achieved without overcoming the barriers that emerge as a result of the implementation process.

### **3.2.2 Teachers' Perceptions towards ICT Usage in Teaching**

As well as being influenced by supporting factors and hindrances teachers' ICT usage is influenced by their perceptions. Researchers in different studies have indicated that teachers' perceptions towards technology are closely linked to how technology is used (Ertmer et al. 1999), because their perceptions on the use of ICT inevitably influence the quality of its application (Wasserman & Millgram 2005). Moreover, Demetriadis et al. (



2003a) stated that teachers' negative perceptions regarding ICT use in schools not only present barriers to ICT use, but also compromise the learning benefits anticipated as an outcome of instructional reform. In contrast, positive feelings often encourage teachers to use ICT in the classroom and even the less technologically capable teacher will be encouraged to learn ICT skills necessary for its use in instruction (Mumtaz 2000).

Knowing and appreciating teachers' perceptions towards ICT serves two purposes. First, teachers' perceptions of the value of ICT will help to determine how and why teachers will adopt it (Cox 2003; Levin & Wadmany 2005), and to anticipate how ICT will be used. Cox (2003) found that positive perceptions of the value of ICT to students' and teachers' own professional development motivated their ICT usage. Levin & Wadmany (2005) concluded that if teachers' perceptions are favourably disposed towards ICT introduction, then it is highly likely that ICT will be accepted and adopted in the classroom. Second, teachers' perceptions towards ICT will not only influence their acceptance and usage of it, but, importantly, their perceptions will be passed on to and picked up by their students. Teachers have been found to have a lasting impact on their students' values, beliefs, and perceptions, including those related to ICT (Hu, Theodore, & Will 2003; Wood & Mueller 2005). It is worth mentioning here that by teachers' perceptions towards ICT I mean "the way of understanding and interpreting something, the way you understand something and your beliefs about what it is like" (Oxford Dictionary 2008).

Teachers' uses of ICT are likely to be influenced by many factors, including access, time, training, equipment, and technical support. However, according to Ertmer (1999), even if all barriers to ICT use were removed, teachers will not automatically use it, since the evidence clearly indicates that teachers' perceptions are a significant factor in determining their use of ICT. In addition, teachers' feelings to ICT are linked to their perceived rationale for ICT use in their teaching. Teachers who use ICT for pedagogical purposes are more likely to have positive perceptions than those who use it under the computer awareness rationale (Drenoyianni & Selwood 1998). Teachers in a number of studies have expressed their positive perceptions towards ICT use in teaching, though they still have some reservations, uncertainties, and fears. I am aware that some of the studies presented

below are dated, especially for the field of ICT, however, the issues discussed are still relevant.

Williams et al. ( 1998) explored teachers' perceptions towards ICT in their study of teachers' ICT skills and knowledge needs. The overall picture which emerged from the study was a positive one, there was a great deal of interest and motivation to learn more about ICT and an acknowledgment that this was the direction things were likely to take in the future. Teachers reported a wide range of positive benefits of ICT use which influenced their feelings towards ICT. However, despite the reported positive perceptions and that the majority, 92% (n=329), were interested in developing their ICT skills and felt comfortable with ICT, there were many teachers who felt overwhelmed by ICT and "worried about the pace of developments, felt they could not cope with the jargon associated with computers, and generally worried about their own lack of skills and knowledge compared to that of their own pupils". Moreover, some teachers viewed their colleagues as technophobic and resistant to learning about computers because they perceived them to be difficult to use. The aforementioned findings are similar to those reported by Andrews ( 1997) who found teachers' hesitation towards ICT was a result of their perception of ICT as an innovation that de-skills people, creates incompetence, has an inhuman influence in the classroom, and promotes students' isolation.

In a comparative Cypriot-British study, Kyriakidou, Chrisistomou & Banks ( 1999) reported anxieties among teachers as a result of their incompetent ICT skills, however, they indicated that increasing exposure to ICT enhanced their perceptions and decreased their anxiety. Muir-Herzig ( 2004) found perceptions towards ICT improved with a hands-on computer literacy course. Although teachers in Kyriakidou, Chrisistomou & Banks' ( 1999) study reported some negative perceptions, the majority had positive perceptions towards ICT, especially for personal use. More than 60% of teachers revealed not only they liked working with computers they were also confident users. Moreover, almost all participating teachers believed ICT to be useful for their work and to have an important role in teaching and learning.

In 2002, Cuckle and Clarke carried out a questionnaire survey to investigate ICT use among teacher-mentors participating in initial teacher training courses. Positive views were expressed in three different statements in the questionnaire: “computers are considered appropriate in teaching my subject”; “most of the department staff are enthusiastic or quite interested in using computers in teaching”; and “I would like further training for using computers”. The majority of teachers considered computers relevant to their subject and indicated that their colleagues were known to be interested or enthusiastic about computers. Only a small proportion of participants (10%), indicated that some teachers were “not at all keen”. Generally speaking, teacher-mentors were considerably enthusiastic about ICT use. They possessed good skills in using ICT and expressed enthusiasm for increasing skills. They often went an extra step and placed extra emphasis on preparing student-teachers to use ICT during school experience (Cuckle & Clarke 2002).

Madden et al.’s ( 2005) study not only investigated teachers’ feelings towards computers and views on ICT in the future, but also elicited their opinions on new advances in technology, such as the Internet. The purpose of their study was to gain information about teachers’ views of the Internet and its usefulness as an educational tool. Most respondents were confident of their ability to use the Internet, especially young teachers of technical subjects. Teachers’ responses varied according to their specialty subject. Most ICT, Design & Technology, and Science teachers scored positively, suggesting they were confident users of the Internet, but understood its limitations. History and Drama teachers appeared to have more negative responses, thus suggesting they lacked confidence, and were relatively uncritical. Maths teachers seemed to fall in between. Further, there was a widespread perception (particularly amongst women teachers) that students were more competent users of the Internet than teachers. Therefore, older teachers felt under pressure to use the Internet more than their younger colleagues.

There was agreement among teachers that the Internet is a valuable source of learning and teaching materials, though there were some concerns regarding the reliability of websites and materials. However, confident teachers were more likely to feel that the Internet made an important contribution to their teaching and disagreed with the view of Internet content

as too unreliable to be used for educational purposes. Teachers' worries about the Internet centred on two issues: easy access to pornography and meeting undesirable people in chat rooms. The picture that emerged from the study can be summarised as teachers were "cautious but favourable".

Unfortunately, there is a lack of studies investigating teachers' perceptions towards ICT in Saudi Arabia. The studies I found during the literature search were those measuring teachers' attitudes towards ICT using attitude scale measures, such as Attitude Towards Computer Scale (Francis 1993), Computer Attitude Items (Pelgrum & Plomp 1993), and the 16–19 Computer Attitude Scale (Selwyn 1997). However, reports on teachers' perceptions can be found in a number of studies, even though the purpose of the research may not have been to explore those perceptions. For example, Al-Saif's (2006) study reported generally positive teachers' views towards ICT, although some had reservations which were related to their recent encounter with ICT. Teachers believed ICT to have a beneficial impact on the teaching and learning process, especially in improving communication between teachers and students and wished for more training. In Al-Showaye's (2002) study, teachers thought traditional methods of teaching to be less beneficial for students, and that modern methods were of more benefit and added more enjoyment to lessons. They emphasised the importance of ongoing teacher training to improve their skills and reported being interested in more training. A recent Arab study carried out in Syria investigated EFL teachers' perception towards ICT. Albirini (2006) reported evident positive attitudes since 62.4% of teachers had positive or highly positive perceptions towards ICT. Moreover, teachers in general had no anxieties about computers, were glad about the increased use of them, considered using computers enjoyable, felt comfortable around them, and liked to talk about ICT with others who used it in their teaching. Further, most teachers thought using computers saved time and effort, motivated students to study, enhanced their learning, and were important in the classroom and must be used in all subjects. Teachers viewed computers as a fast and efficient means of getting information, they made schools a better place, and were worth the time spent learning how to use them. They also expressed strong intention to buy computers and learn more about them. The foregoing review of the literature suggests that, in general, teachers' perceptions

towards ICT are mainly positive and their positive perceptions increase as years pass. However, there are still a considerable number of teachers who are still hesitant, reluctant, and anxious about ICT use in their practice.

### **3.2.3 Educational Policy**

Teachers' ICT use is influenced by their perceptions towards computers, however, related literature indicates that it is also greatly influenced by educational policies, especially ICT related ones. Policy is reflected in teachers' ICT usage as well as their perceptions towards ICT use in their teaching practice. In turn, teachers' perceptions are influenced by the policy and the way it influences the introduction, planning, and implementation of ICT in education.

The introduction of ICT to education is mainly a policy issue since nations around the world have from the early 1980s attempted to introduce computers into their schools through nationally directed initiatives (Vavouraki 2004). In general terms, the word "policy" means according to the dictionary "a course or principle of action adopted or proposed by an organisation or individual" (Oxford Dictionary 2008). However, educational policy, which is the interest of this study, has several definitions which try to capture its meaning for as Finlay et al. ( 2007, p.139) have pointed out, "policy is a loose term. It is used to cover value commitments, strategic objectives, and operational instruments and structures at national, regional, local and institutional levels". As regards educational policy, Dale et al. ( 2004, p.459) stated, "policy refers to the definitions and combinations of what we see as the three key components of education systems; their Mandate, what it is considered desirable for education systems to achieve; their Capacity, what the resources available make it feasible for them to achieve; and their Governance, how and by whom they are coordinated to achieve their ends and how these are prioritised and combined into sets of documents, guidelines, advice, targets and indicators". From the Saudi perspective, educational policy is defined by Al-Mengash ( 2006) as the set of rudiments and approaches which are put in place by the state to direct education in its different levels and types to realise the aims of the society in the light of the current circumstances and available capabilities to serve the general objectives of the state and its

national advantage. According to Al-Maydani ( 1992), educational policy is the constitutional articles of Education which explain the general principles that planning is based on, and state the aims and objectives of the educational process. Whether these articles are written and publicly published in the form of decrees or unwritten and unpublished, supervisors and managers of educational institutions are aware of them. However, the Saudi educational act (1970) defines educational policy as the general guidelines on which the educational process is based in order to acquaint the student with his/her God and religion, base his/her behaviour on its principles, satisfy the needs of the society, and fulfil the nation's goals (Ministry of Education 1980).

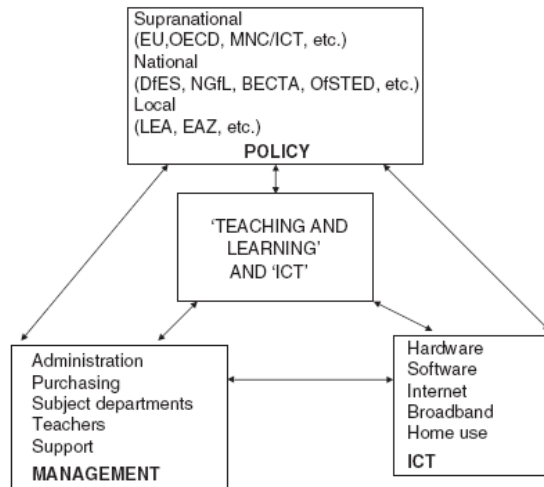
Educational policy goes through three main phases before it is practised on the ground: policy formulation, policy adoption, and policy implementation. It specifically starts with defining the issue, then setting the agenda and formulating the policy to be adopted and then implemented. Prior to implementation, the policy is analysed for any necessary modification and improvement (Al-Kadhi 1980), Bell and Stevenson's ( 2006) linear model of educational policy development starts with *initiation*. When there is evidence of an emerging problem, opinions are gathered and crystallise around a specific option in a process called *reformulation of opinion*. After that, the policy options are presented formally in the *emergence of alternatives* phase. These alternatives are discussed and shaped into a policy proposal in the *discussion and debate phase*. Policy makers identify and select the key policy in the *legitimisation* phase. Finally, in the *implementation* phase administrative procedures are developed to operationalise the policy.

The successful implementation of educational policies depends on different aspects. In the policy formulation phase, the policies should be clearly written and articulated because a policy with unclear and unspecified aims and objectives is unstable and waste of time, money and effort (Al-Mengash 2006). In his review of educational policy in Saudi Arabia, Al-Romy ( 2002) emphasised the importance of moving from the policy formulation and adoption phases to the policy implementation phase because written and published policies will have no impact or influence without proper implementation procedures. In addition, educational policy works as a guideline for decision-makers in different management levels

and writing it down is a step that should be taken to ensure its aims are fulfilled, otherwise it will be a worthless policy. There are also several conditions that should exist in educational policy for it to be effectively implemented, such as the availability of adequate funding; the availability of and accessibility to databases and information systems that facilitate the planning and execution of policies; the policy's suitability and appropriateness for the society's social, political and economic status; it should be realistic and achievable; the existence of educational research agencies and departments for supervision and evaluation; and, most importantly, the policy should be published among educationalists and all stakeholders likely to be influenced by changes in the educational field (Al-Kadhi 1980). Regarding educational policy related to ICT, to be effective it should ensure adequate levels of resourcing through the coordination of hardware and software, the employment of qualified personnel, and the provision of in-service training (Tawalbeh 2001).

Educational policy and ICT are becoming increasingly related. Jim Knight, the British Minister for Schools and Learners, stated "technology in learning is no longer optional" (Becta 2008). Dale et al. (2004) shared the same view and illustrated the link between ICT, policy and management as a two way interaction process in which teaching and learning and ICT are in the centre (see Figure 3.2) The Figure shows that for successful implementation of ICT in teaching and learning, there should be a balanced and interactive relationship between policy at its different levels, management, and ICT, including all its different aspects.

**Figure 3.2 The Relationship between Policy, ICT, and Management**

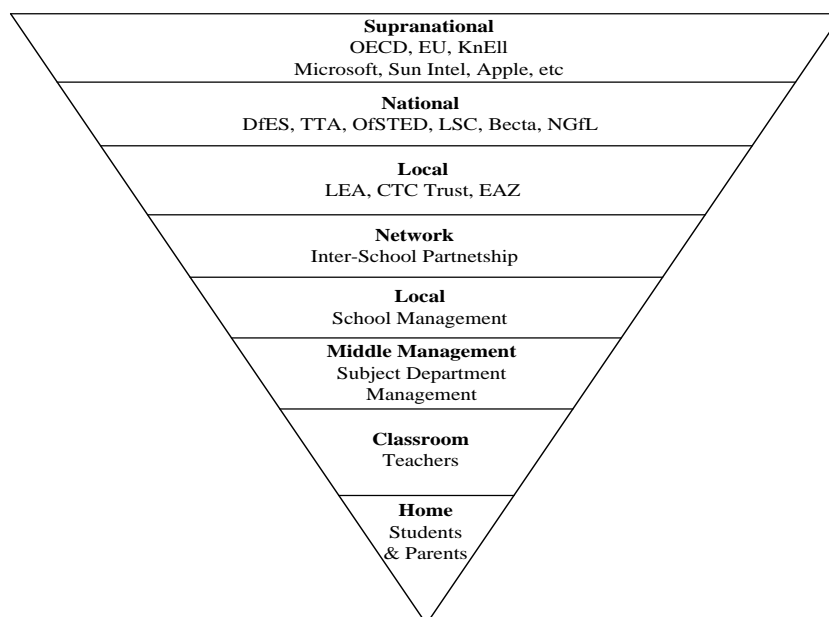


**Source: Dale et al. (2004)**

Considering the policy element in Figure 3.2, policy levels and their executers can be organised in a hierarchy, from the supranational level down to the home level (see Figure 3.3). Figure 3.3 shows the interdependency between policy levels, for example, national policies are influenced by the supranational bodies and organisations that play an important role in governing the international educational scene and setting its agenda and roles. Their role extends from theorising to executing policies by providing necessary funding and the provision of hardware, software, and training. Further, although the local policy is formed at a lower level, it is set to meet national requirements and depends to a great extent on national policy for the provision of resources necessary for policy implementation (Dale 2005). However, although educational policies are formed and executed at different levels they all share the same broad purposes and aims. Educational policy aims to contribute to the growth of the Knowledge Economy, create computer literate citizenry, improve teaching by increasing its breadth and richness, drive the educational market, and assist in creating an information society, since education is an active component in the creation of this society (Dale 2005).



**Figure 3.3 Policy Levels**



As noted earlier, the introduction of ICT into education has been a key component of British government policy since the 1980s. In the early stages of computers' introduction into schools, and before the spectacular growth of the Internet, the focus of educational policy was on the provision of hardware and training teachers in using the technology. However, as a result of the widespread use of the Internet, teacher training in basic skills of technology use was found to be insufficient to implement educational policies aiming to integrate ICT into education (Schnitz & Azbell 2001). Therefore, government funded policy initiatives focused on teacher training as a continuous improvement process and concentrated on methods of ICT integration in education, and on creating connections and resources to facilitate ICT based education (Ibid). Generally speaking, present educational policies in the many countries which have recently introduced ICT in education, including Saudi Arabia, focus on four main aspects: hardware, connectivity, content, and professional development. These aspects are dealt with in two successive phases: phase one is concerned with laying the foundations for the effective use of ICT in education, including the provision of computers for schools, professional development for teachers, and development of appropriate online content, while the second phase focuses on implementing policies relating to the integration of ICT in education in a more strategic way with an aim to improve and achieve policy objectives (Kearns 2002).

## **Educational Policy: Reflection on Teachers' Usage of ICT in Teaching and their Perceptions towards it**

There are a number of factors that influence teachers' ICT use and their perceptions towards this usage. They include motivators, incentives, and supporting factors as well as hindrances to ICT use. Educational policy has also been found in several studies to have an impact on teachers' usage of ICT in teaching and their perceptions towards it. In their study of the impact of the ICT initiative on Scottish schools, Condie & Simpson ( 2004) found teachers considered they had experienced a number of benefits as a result of the initiative. Improved motivation and development of ICT skills were the most frequently mentioned benefits of the ICT initiative well as enhancement of learning and teaching and encouragement of a great variety of teaching methods which can be personalised to suit different needs. The availability of ICT promoted independence in students, improved efficiency, and extended opportunities for both teachers and students because ICT provides, according to teachers, "an extra teacher in the room". ICT policy which focused on teacher training resulted in "re-awakening" a learning culture among teachers, who became more willing to improve their skills through programmes of continuous professional development.

Selinger & Austin's ( 2003) comparative study of the influence of government policy on teacher training in ICT in England and Northern Ireland indicated that the introduction of ICT teacher training policies had had a significant impact on trainee teachers' competence and confidence in using ICT. The National Grid for Learning (NGfL) and New Opportunities Fund training was reported to have had a positive impact on schools and teachers because it provided experience and structure for using ICT in the classroom. Further, some policy aspects were found more influential than others, such as the drop-in centre facility which provided flexible opportunities for teachers to receive support and assistance in ICT use which, in turn, increased their confidence and made their teaching a positive experience. A similar positive impact of policy was reported by teachers participating in Webb & Vulliamy's ( 2006) study of the impact of New Labour's educational policy in the UK. Teachers stated that the policy had enhanced their skills and

made them more professional and able to provide additional and improved learning opportunities for students who were exercising choice, participating in decision-making, and becoming independent learners.

The foregoing review of the literature suggests that ICT educational policy is having a positive impact on teachers. The focus on hardware and training provision is making teachers increasingly aware of the advantages of introducing computers into the classroom and encouraging them to explore the benefits of ICT use for their practice. Moreover, recent surveys suggest that school teachers are now more technically confident and more likely to make regular use of ICT in their teaching than before (Selwyn 2008). Stark et al. (2000) listed a number of the outcomes of the impact of ICT initiative, which included improved motivation, enhancement of learning, enhancement of teaching, and improved efficiency.

However, despite some examples of the positive impact of ICT policy, there is some research evidence that points to a negative or no impact of the policy. After investigating ICT national policies' impact on schools and teachers, Bottino (2003) stated, "Even when the use of ICT, though with differing modes and characteristics, enters into teaching practice, one often observes purely superficial changes which do not impact on the effective renewal of the syllabuses and methods, i.e. the modification of the methodological approaches, the content and relational dynamics in classes and schools, and the organisational aspects within schools" (2003, p.43). She added "one can observe that the government programme for the development of educational technologies has achieved significant results in providing schools with technology infrastructure and a considerable number of teachers with ICT basic skills. Nevertheless, this has not led directly to an improvement of teaching and learning methods and to a change in approaching discipline subjects". She concluded, "policies should move from technology push (i.e. actions that are driven by the necessity to make the technology available and usable) to "demand-pull" (i.e. actions that are driven by users' needs and pedagogical opportunities) (2003, p.45).

Other reasons have been identified for the failure of policy to influence teachers' practice and perceptions. Tondeur et al. (2008) stressed that teachers should be aware of and understand the values expressed in the policy as well as its implications for the policy to be able to influence practice. Al-Mengash (2006) also emphasised the importance of raising awareness of educational policy among teachers for it to influence practice, achieve its objectives, and fulfill its aims. She stated that one of the major reasons for policy nonsuccess is lack of awareness among teachers which leads to poor implementation and no impact.

With regard to Saudi research on the impact of educational policy, I found a lack of research in this field, especially research investigating the impact of educational policy on teachers. Most of what I found focused on the impact of policy on students as they are considered the core of the educational process. Even when teachers were involved in the studies, the research did not explore the impact of policy on their practice or perceptions, rather it explored the extent to which the policy had been implemented (Al-Hasan 2004; Al-Khathlan 2007).

### **3.2.4 Future of Education**

Having discussed issues related to teachers' ICT use, perceptions, and the impact of educational policy, it is important to extend the discussion to cover issues related to the future of education. Governments are aiming to increase ICT usage among teachers and fulfil their objective of preparing students for the new century's labour market, policy makers must have some vision of the future of education and formulate policies that assist in meeting the targets necessary to ensure we are preparing students for their future not our past.

The future of education is based on the general principle of futures studies which states that although the future is unknown its development can be influenced (Amara 1981). The aim of futures studies of education is to facilitate individuals' formulation, implementation, and envisioning of their preferred futures (Dator 1996). According to Bell (1997, p.73) the purpose of futures studies is to "discover or invent, examine, evaluate and propose possible,

probable and preferable futures.” He continues, “futurists seek to know: what can or could be (the possible), what is likely to be (the probable), and what ought to be (the preferable)”. Hicks ( 2003b) views future education as education that has a more holistic view of the world and its problems and promotes the development of students who are politically, socially, and environmentally aware and capable of independent decision-making. However, it is common to read in the futures related literature an association between the future of education and technological developments. Sandford and Facer ( 2008, p.2) underlined this by explaining that education will not be changed simply as a result of introducing new technology, “but by the ways in which these developments are incorporated into social life (changing our values and goals for education) or into educational practice (changing the methods and tools we have available to education). It is only by developing a complex picture of the potential relationships between technological, scientific and socio-cultural development, that we will develop a picture of possible educational futures that is robust and which avoids the realms of science fiction”.

The futuristic vision of education is referred to in the Arabic literature in general and in the Saudi literature specifically as the “Futures School”, since the school is the centre of all educational activities. In two different studies one researcher defined the futures school as the developed school that all educationalists seek to establish to fulfil learners’ varied needs, to provide them with required skills to continue higher education, and to effectively interact with and adapt to their societies (Al-Abdulkareem 2002). The other researcher defined it as the school that is based on the immense capabilities of ICT. It encourages self education, therefore, it is an advanced school in using ICT and provides learners with opportunities to access varied learning resources, mainly ICT based ones (Othman 2002). However, Al-Saleh ( 2002) contended that both educationalists and technologists try to form the future school according to their views. Even though most educational reform proposals agree on utilising ICT to create change in the educational paradigm, the change is limited to the introduction of technology rather than a systemic change in pedagogy due to considering ICT alone as being capable of producing change and tangible results in the core of education, i.e. teaching and learning activities.

The official view of the future of education in Saudi Arabia, according to the eighth development plan developed by the Ministry of Economy and Planning, emphasises the fact that ICT is not the only tool for achieving the futuristic vision of education. While ICT will play an important role in the future of education, it will not be the only factor contributing to its success. In fact, the future of education in Saudi is seen as a whole package, with ICT part of it (Ministry of Economy and Planning 2008).

The five and ten year development plans in Saudi Arabia are so designed that all plans of all Ministries, i.e. Health, Education, Agriculture, Labour, etc. interweaved together to fulfill the overall aims and objectives of the government. The overall future vision of education is to prepare students for positive and confident interaction with new technology in order to fully participate in the comprehensive development plans and build a strong knowledge-based economy. This is only achievable through an education system that promotes self education and research and emphasises high order thinking and analysing skills as well as communicating skills. The vision also highlights the importance of preparing students to deal efficiently and flexibly with issues related to globalisation by becoming global citizens aware of issues affecting all humans, such as poverty, global warming, and peace, as well as maintaining their local Islamic and Arab identity (Ministry of Economy and Planning 2008).

The future vision of information and communication technology in the Kingdom includes references to the educational system as the plan is to teach ICT as a subject in all school years, employ ICT for distance learning, and in all schools provide ICT centres connected to the Internet. The overall future vision views Saudi Arabia as an information society that produces information and knowledge and is capable of benefiting from and making use of this flow of information to improve proficiency, increase productivity, and improve the quality of products and services.

## ***Visioning the Future***

Futures thinking is about using a systematic approach to consider the long-term. In recent years, a range of methods has been used under different labels and utilising different techniques. These techniques assist in looking at the present through the eyes of the future and provide insights and ideas that do not usually come from thinking about the future in a linear way, i.e. looking at the present while under the influence of the past. Smith ( 2008) presented commonly used futures techniques which are summarized and explained in Table 3.1.

### **Horizon scanning**

Looks across an area to identify future challenges and opportunities. Ranges from systematic to more open exploration. Can also be near-term or at the limits of current thinking.

Very useful for spotting key issues before undertaking an in-depth analysis of interaction and social context, for example, in scenarios or technology roadmaps.

### **Delphi**

A type of consultation, starting with a questionnaire to seek initial views from a wide range of experts. Experts assess their relative level of competence in answering the questions. Responses are collated and sent out again to the contributors for comment.

Good for gaining an overview of an area of science. Does not encourage interaction and is very dependent upon experts finding time to engage.

### **Trend analysis**

The extrapolation of historical data forward (assuming that the future is an extrapolation of the past).

Good for testing policy robustness and spotting developing problems. More suited to issues that take time to change (e.g. demographics), rather than issues that respond to immediate pressure (e.g. price of oil).

### **Driver analysis**

Spots the factors that are driving and shaping trends and considers possible future interactions. Appropriate for detailed investigation of critical factors that are likely to shape the future, or as the basis for developing scenarios, roadmaps or visions.

Good for testing policy robustness and spotting developing problems.

### **Scenarios**

Internally consistent pictures of what the future might look like; built by assessing how trends and drivers might influence the present to create the future. Usually three or four scenarios are produced.

Creates a 'possibility' space of what the future might look like as a context to test the robustness of policies against a range of future challenges. Can also help in spotting the unexpected.

### **Visioning**

Creates rich pictures of what the future might look like, based on relatively less rigour and more imagination. These represent a jump forward that may not be clearly linked to present trends.

May be relatively difficult to persuade stakeholders to take action on the basis of a vision. Should have a 'ring of truth', and ideally reflect emerging patterns that will strike a chord with those hearing it.

### **Technology roadmapping**

Sets out the steps to achieve a desired goal and assists the exploration of possible future products and the key elements of science and technology that need to be integrated to deliver those products.

Good for gaining consensus within a diverse community and for agreeing specific actions.

### **Backcasting**

Starts by producing an 'ideal' future, then considers actions to increase the chances of achieving it.

Requires clear unambiguous aims, otherwise may be better to use scenarios.

### **Modelling**

Can be used to examine the future of a system, provided there is a formal understanding of the factors that will affect the way that system changes over time.

Can provide objective metrics for complex issues and help assess the relative impact of different options. Highly reliant on good data for calibration; great care needed in interpreting the output.

### **Simulation, gaming & synthetic environments**

In gaming scenarios, stakeholders are asked how they would respond to a given scenario. Good for owners of policies to explore their influence on the future.

In simulations, a computer model plays the parts of a 'system' and the effects of particular decisions can be explored. Good for communicating complex decisions or for broadening people's perspectives.

**Table 3.1 Futures Techniques**

**Source: Smith ( 2008)**



Scenarios are one of the most frequently used techniques in futures research, especially in educational related studies such as the OECD ( 2001) *What Schools for the Future?* They are used because scenario building is “a way of drawing together and making sense of the diversity and complexity of factors that may shape the future. The intention of scenario building is not to develop an accurate prediction of the future, rather, it is to engender discussion and inform forward planning” (Ultralab 2004, p.19). Scenarios, as Hicks ( 2002b, p.47) defines them, are “like maps, sketches, or short stories about the future”. Their purpose is to attract attention and imagination by highlighting different aspects of possible futures. Thus, while any number of futures is actually possible for a given situation, it is useful to identify a number of different scenarios which can be used to explore how different decisions in the present will result in different futures.

There are several scenarios of the future of education, such as personalisation of learning (Dannen & Facer 2007), lifelong learning (Mercer 1999), and different scenarios for schools’ status (OECD 2001). For example, the OECD ( 2001) presented six different scenarios under three main categories: “maintaining the status quo”, “re-schooling”, and “de-schooling”. These scenarios are meant to be descriptive pictures or stories to assist understanding of the complexities and uncertainties of the wider context and possible reaction to the problems of education in the knowledge economy of the future. The first category “maintaining the status quo” contains two possible scenarios: the first allows the bureaucratic school system to continue due to resistance to radical change, and the second scenario, named “the meltdown scenario”, identifies a major crisis resulting from teacher shortages triggered by a rapidly ageing profession and low teacher morale. None of these scenarios is presented as a practical and suitable option for the future knowledge economy. On the contrary, they are presented as inflexible, prone to crisis, and with a tendency to generate and maintain inequalities.

“Re-schooling”, the second category, also has two scenarios, the first is the school as a core social centre and the second is the school as a learning organisation. The “school as a core social centre” emphasises that the school is a place for mediating the impact of social dislocations in the wider society, while “the school as a learning organisation” focuses on

learning in its different types, i.e. experimentation, innovation, use of ICT, and research and development. However, both scenarios as imagined will require a significant amount of funding for equipment and infrastructure. Comparing these scenarios to the demands of the knowledge economy, it would seem that “the school as a learning organisation” is the most suitable.

The final category is “de-schooling” and as with the previous two categories it presents two scenarios. The first is learning networks and the networked society and the second is extending the market model. The availability and widespread use of ICT and the Internet in particular make learning networks highly feasible. This implies a shrinking of formal institutional structures such as schools and an expansion of other kinds of less formal learning that takes place in less formal arrangements. The extending the market model scenario is thought to be a pioneering model as it enables greater diversity within the system, especially in funding, though it will be regulated in using market model methods through indicators and competence assessments (Robertson 2005).

Lifelong learning is another possible scenario of the future of education. In fact, it is presented as the most viable means of taking us into the future. The learning is guided by educators who develop individualised learning plans and the emphasis is on moving from the traditional learning characteristics presented in Table 3.2 to lifelong learning.

<i>Traditional Learning</i>	<i>Lifelong Learning</i>
<ul style="list-style-type: none"> <li>• The teacher is the source of knowledge</li> <li>• Learner receives knowledge from the teacher</li> <li>• Learners work by themselves</li> <li>• All learners do the same thing</li> <li>• Tests are given to prevent progress until students have completely mastered a set of skills and to ration further learning</li> <li>• Teachers receive initial training plus ad hoc in service training</li> <li>• ‘Good’ learners are identified as permitted to continue their education</li> </ul>	<ul style="list-style-type: none"> <li>• Educators are guides to sources of knowledge</li> <li>• People learn by doing</li> <li>• People learn in groups and from one another</li> <li>• Assessment is used to guide learning strategies and identify pathways for future learning</li> <li>• Educators develop individualised learning plans</li> <li>• Educators are lifelong learners. Initial training and ongoing professional development are linked</li> <li>• People have access to learning opportunities over a lifetime</li> </ul>

**Table 3.2 Characteristics of traditional and lifelong learning models**  
**Source: World Bank ( 2003)**

There are other ways that facilitate visioning the future, such as Hicks' ( 2002b, p.17) types of reference to the future, namely: "tacit, token, and taken for granted. Tacit futures are all those which are assumed and never brought out into the open. They remain hidden and unexplained, but are nevertheless present. Thus, the future may not even be mentioned in an educational document but assumptions about it are still tacitly present. Token futures often involve clichés and stereotypes presented in a rhetorical fashion. Taken for granted futures occur whenever a particular future or range of futures is described as if there was no other alternative". Hicks ( 2002b) also suggested another possible way of future visioning, which is viewing it as a probable and preferable future. Probable futures are all those things which seem likely to come and happen and that involve projection of current trends and what is expected to happen. Preferable futures are all those things that one feels should happen to achieve a particular preference and this involves envisioning.

### **Importance of the Future of Education**

While it is recognised that it is impossible to predict the future, it is certainly possible to anticipate it. Considering the future of education is very important since education, as Massini ( 2002) noted, is the basis for preparing for the future and "the earlier the better". In trying to anticipate the future, the education system is attempting to fulfil its legal and moral obligations to students, since most educational activities draw on the past, are performed in the present, but are intended to be used in the future (Haapala 2000). Moreover, using futures techniques to predict the future of education helps people in a twofold way. First, it helps them clarify their hopes as well as their fears about the future and, second, it helps them to move forward from passively forecasting the future to actively involving themselves in developing plans of action on the basis of their forecasts. It is even better if they are capable of generating positive visions of the future to build a vision of their preferred future and focus their planning on achieving them (Dator 1996). Hicks ( 2002b) agrees with Dator's view and states that envisioning future images of the future is a vital factor in the creation of change, since it clarifies thinking and highlights priorities.

The importance of futures studies in general and the future of education in particular arises from the fact that intelligent and informed decision making depends equally on predications

of possible consequences of future actions and on the evaluation of those consequences and whether they are desirable or not (Bell 2001). Being aware of the wide range of future possibilities and choices can result in more thoughtful and informed decision-making in the present (Haapala 2000). Finally, there is a link between present visions of the future and the future which will eventually emerge. Therefore, knowing the preferable futures will make it possible to make decisions which will enable this future to be achieved (Hicks 2002b). However, it is important to note that trying to generate visions of the future requires good future thinking skills, since one's knowledge of the past and present is essential for developing images of the future. In fact, past, present, and future are linked together, since the present is the future of the past and the present is the past of the future.

### **Views on the Future of Education**

ICT has an important role to play in the future of education as in almost all the literature I reviewed there was an association between preferable futures/scenarios and ICT. However, views on ICT varied from considering it the solution to all educational problems to treating it as a tool to achieve the new educational goal of the emerging paradigm. Newby's (2005c) view of the future of education is very radical and positive and anticipates major changes. The main themes of his view are flexibility and autonomy, with emphasis on the personalisation of education. Learning will not necessarily require students to be present in a particular time and particular place. In fact networked communities such as school and universities, will link together and share their web-based resources, exchange ideas, and merge their working spaces. Teachers and students will communicate electronically as much as they used to do face-to-face. However, students will still go to school and experience real life classroom interaction, but they will be accompanied in the future with personal digital devices that will allow them to evolve outside their immediate surroundings. Most of their lives will be lived in a virtual reality and by 2020 chips that carry essential information about each individual will be implanted under the skin and they will be the interface between the silicon based and carbon based worlds students will be living in and allow interaction with them.

Tabberer ( 2001) agreed with Newby's view of the future classroom and believed there will be a greater tendency towards individualisation of education with greater complexity, because future students will be advanced in terms of their emotional and intelligent development and more sophisticated in analysis and interpretation skills. However, teachers as seen by Tabberer are individuals with moral influence and will remain a fundamental part of the future school because it is unlikely to produce a technology in the future that will replace the unique dialogue that goes on between a student and a teacher. Therefore, while the teaching role of the teacher can be replaced by an electronic teaching machine in all its different possibilities, the moral role of a teacher will be difficult to replace. Students benefit from seeing, feeling, experiencing the enthusiasm of the teacher to consider him/her as a role model (more in-depth discussion of the teacher's future role is to be found in the next section).

In his paper on the Future School, Al-Abdulkareem ( 2002) pointed out that there are three main trends in forecasting the future of education. The first is the partial vision in which educationalists consider only one element or factor to be developed and improved in order to satisfy the needs of future education. The second is the technical vision that views technology as the only method to modernise schools and improve educational outcome. The final is the holistic view that acknowledges that improving education is a complex process that involves many factors and is influenced by others. This view stresses the fact that in order to found the future school there are other societal institutions that should be developed because the school is a part of the society and it should be developed alongside other institutions in the society in order to achieve what Al-Abdulkareem calls the future society. In his view, the future school will be a place where all students will have the ability to achieve, not only smart or intelligent students, because in this school it is not expected that all students will understand new topics from the first and that is where ICT will be used to assist students in scaffolding their learning. Moreover, mistakes are considered positively as they encourage continuous determination and thereby help students towards success. Further, factors that no student can have control over such as inborn intelligence, is not considered. Finally, this school uses collaborative learning methods to achieve its

educational goals and good achievers work side by side to achieve a common goal rather than compete with each other because it values the one team concept.

Al-Saleh's ( 2002) view subscribes to the holistic vision of a preferable future in education as ICT will be an important cog in the wheel of educational development. His view of the future school does not differ from other visions in terms of the role of ICT. The school will be a rich environment with learning resources utilised efficiently by teachers and students. However, he contends that the difference in the school of the future is not the extensive use of ICT because introducing it to the school does not mean that the actual learning and teaching process is positively influenced. ICT will only be influential when teaching and learning theories, assumptions, and paradigm are changed. Therefore, future education will be active, constructive, purposive, authentic, and collaborative. ICT will be a tool for students' learning, assisting them to construct their own understanding and knowledge of things and the teacher's role will be that of supporting and encouraging student's engagement in thinking and analysing, which will result in improved learning outcome. Al-Saleh's ( 2003) view is not concerned with introducing new things to the school's environment or using ICT to perform traditional roles, it actually focuses on integrating ICT in the new educational paradigm that supports, as noted earlier, active, constructive, purposive, authentic, and collaborative learning by a teacher highly trained and qualified not only in using ICT but also in integrating it successfully to assist in achieving the objectives of the future educational paradigm and in creating a dynamic, flexible, interdisciplinary, and open learning environment.

There are other Saudi based studies that discuss the future of education and according to my understanding, their common finding is the need to overcome current deficiencies in the education system and take learning to a new dimension that pays equal attention to students and personalisation of educational targets according to their needs in order to build up students' personalities in terms of knowledge, skills, and emotions. The future teacher will assist in developing students' thinking, analytical, creative, and innovative skills because these skills are vitally important for lifelong learning, which is one of the most important features of future education (Othman 2002).

### ***Changing Teacher Role***

Teachers play a fundamental role in the education system and as future scenarios suggest a major change in the future of education and increased ICT usage, these will inevitably affect their role and their status in this system. In fact, Wheeler ( 2001) stated that the role of the teacher must change and gave four reasons for this. First, because ICT will make some teaching resources obsolete, such as the use of overhead projectors and chalkboards, in the future there will be other means, such as networked resources which will require a change in the role of the teacher in the class. Second, ICT will almost certainly make some forms of assessment and performance evaluation redundant. For example, in an ICT learning environment, computer based testing can be used to instantly provide the teacher with meaningful information regarding the student's performance in any test. It can also compare this score with previous ones to indicate the student's learning progress and also link performance and accuracy to response speed. Third, the role of the teacher must change to adapt to changes in education. It is no longer sufficient for teachers to be only knowledge transmitters, they need to step forward and change from being lecturers to becoming organisers and enablers of learner and encourage critical thinking skills and collaborative working, which are main themes in education's future. Finally, teachers must change their teaching methods to suite the characteristics of learners' minds. Information should be presented in a hypertext format instead of a linear format because the human mind uses non-linear strategies for problem solving and information storage and retrieval.

Teachers need to understand and appreciate the reasons and justifications for the change in their role in order to advance the teaching profession forward. The teacher's role will change from a lecturer and knowledge transmitter to the expert who directs students towards what should and should not be done, and a facilitator and organiser of learning in the class (Al-Abdulkareem 2002). In addition, ICT will force a change and decrease the authoritative role of the teacher. His/her role will shift from being the central authority to the "decentralised facilitator" (Cox 2003;Wang 2001) and s/he will use ICT to empower and engage students (Romeo 2003). The new role of the teacher will include being an enabler, manager, presenter, adviser, observer, challenger, respondent, evaluator,

information consultant, guider, creator and developer of the subjects under study, academic mentor, and a member of a collaborative team (Al-Saleh 2003;Cox 2003;Newton 1999). However, the teacher still has a crucial role to play in directing and focusing students' attention (Newton 1999;Othman 2002).

In the future school, the teacher may be able to reduce the focus on class control and encourage students' participation, questioning and wonderment through asking purposeful, thoughtful, and open questions. S/he will stimulate students' autonomy, promote dialogue among students, and encourage them to challenge each other's ideas as well as respect them, which will require a lot of effort and creativity from the teacher (Haaksma-Oostijen & Puper 2003). Learning will be in small heterogeneous groups that teach problem solving skills based on authentic situations which students can relate to their lives to develop their thinking skills. These important characteristics of the future teacher are vitally important and are achievable with or without the availability of ICT (Al-Saleh 2002).

Cornu ( 2003) pointed out that the change in the role of the teacher does not mean that ICT will replace his/her role. ICT will only enable both students and teachers to do things better. The human dimension of the teacher's role is essential and cannot be replaced with ICT, yet can be enhanced and supported by ICT since it offers possibilities of communication between teachers and students as well as the individualisation of learning.

### **3.3 Theoretical Rationale for the Study**

Throughout this chapter many ideas have been presented and discussed and all of them have been organised as a cumulative contribution to the study's theoretical framework. The theoretical framework is a synthesis of what has been researched (literature review) within the study setting (study contextualisation) to identify the gaps in the literature to form the rationale for the study. Reading and exploring prior work is one of the early stages of conducting research, in order to identify gaps in the literature. This stage of the study not only helped me in identifying topics to be covered in the research's methodological framework and in particular, its data collection methods, i.e. interviews, it also pointed to a number of important issues in the research field in Saudi Arabia. Al-Mohaissin ( 2002)



stated that the poor situation of ICT in Saudi is a result of the late and poorly researched introduction of ICT to education. Therefore, examining Saudi based studies reveals a gap created by policy makers' lack of planning for the introduction of ICT in education and also basing their highly influential decisions on studies not situated in an appropriate context (Al-Hadlag 1998). Not until recently have educational researchers paid sufficient attention to bridging this gap in the literature to create a complete and situated understanding of the present status of ICT use in education in order to provide policy makers with essential locally generated information on which they can make informed decisions. Therefore, this study bases its theoretical framework on a combination of Western and Saudi based studies, which should better understanding and identify possible research opportunities given the lack of suitable Saudi based literature.

In Saudi Arabia, computers are used in all aspects of daily life, at work, in the home, and even for leisure activities. Students see computers at supermarket tills where stock is controlled and monitored, at the library when borrowing a book, at the bank cash dispenser, and even on a shopping trip to the Mall. As computers become an integral part of modern society, everyone needs to understand how to operate them, and indeed how to control them to suit their own personal purposes. Therefore, schools as part of their educational role should incorporate ICT in education to give students the experiences they need for their daily life activities.

However, that is not the only rationale for introducing ICT in education, in fact, the Saudi educational system is in some way forced to do so because the ICT revolution is only one aspect of a greater revolution sweeping modern cultures. Leaving educational systems outside this change would mean, as Aviram ( 2000, p.333) stated, "subjecting them to marginalisation or even extinction". Therefore, schools must change and adapt to the dynamics of the new situation in order to develop the country and economically compete with other developed countries. Moreover, although schools play the role of the source of knowledge and its transmitter at present, knowledge as a result of the ICT revolution will not anymore be located in schools only. It will be in all digital resources which have the potential to be adopted as teaching materials and used by support groups. Since digital

resources are usually based on the Internet, if schools want to retain their status as sources of knowledge they need to adapt to the new era and incorporate ICT in their teaching and learning activities (Vigotzki 1999). While policy maker and school managers are likely to agree with these rationales, teachers tend to subscribe to the pedagogical rationale which closely concentrates on the role of ICT in teaching and learning, and this is related to their role in the school and directly affects and influences their practice. Teachers who use ICT in their teaching use it because it is proven to be beneficial for students' learning (Al-Showaye 2002). ICT can increase the breadth and richness of learning, additionally, it can support the development of higher order thinking skills, including analysis and synthesis (Al-Saif 2006;James 2001).

The introduction of computer studies as a subject followed by the orientation towards full integration of ICT into education have received full support from the Saudi government as a whole and educational policy makers as specialists. Indeed, ICT in schools has been intertwined with “raising the standards” of teaching and learning in them which will have a direct impact on increasing the employability and productivity of students, one of the Saudi government's objectives in order to prepare Saudis for competing with other countries economically to attract international investment (Al-Wakeel 2007). Moreover, investing in developing and properly training human capital to actively engage with the constantly changing international political and economic situation will have a direct positive impact on the financial capital of Saudi Arabia (Ministry of Education 2009). Policy makers concerned with competing with other countries also consider that the huge investment in ICT in education through the launch of a number of initiatives is essential, not only for students living in the 21<sup>st</sup> century but also for the country's future. When it is a matter of choice between being a civilised, modern, and economically stable country or being an underdeveloped deprived one, the right choice is obvious (Al-Wakeel 2007).

Policy makers' focus on taking Saudi Arabia into the Information Age by developing and reforming education and introducing ICT has been based on the launch of a series of initiatives based on Western and developed countries' successful experiences, but with little consideration of their appropriateness to the current situation in Saudi Arabia. This is

because they thought starting from where others ended was the quickest way to obtain desirable results from ICT use in education (Al-Mohaissin 2002). However, this has not been the case since Saudi research reports indicate that the impact of ICT on education remains disappointing (Aljohani 2006), and there is a similar situation in Western countries, despite huge investments in the field (Somekh 2000;Williams, Coles, Wilson, Richardson, & Tuson 2000b).

There has been relatively little research attempting to understand the reasons for and the causes of this unsatisfactory situation. Watson ( 2001) stated that most research on this issue focuses on the apparent reluctance of teachers to utilise ICT in their teaching and blames them for being very traditional teachers and reluctant to change their teaching style, rather than explores the relationship between educational policy makers' imposed policy and the teachers' understanding and appreciation of ICT related policy and participation in both shaping and implementing ICT it.

Furthermore, to understand and analyse the reason for the low impact of ICT in education research on the relationship between policy and teachers should extend to covering issues related to teachers' perceptions and attitudes towards the use of ICT in the teaching and learning process because, as has been mentioned earlier, teachers play a crucial role in promoting or hindering the usage of ICT in the classroom and can easily transmit their beliefs and values to their students' and thereby have a lasting impact on "students' intellectual developments, value systems, and attitudinal beliefs, including those concerning technology" (Hu, Theodore, & Will 2003, p.228). Therefore, it is important to understand and appreciate their perceptions of computers to ensure all students have equal and unprejudiced ICT experience during the learning process (Jennifer & Michel 2003).

Exploring teachers' perceptions will elicit their views on their greatly changing role from being the main source of knowledge to facilitators of the learning process. The presence of new technology in the classroom may change its culture as well as the relationship between the teacher and the students (Al-Abdulkareem 2002;Somekh 2000). This change may negatively affect teachers' perceptions regarding ICT use in education and may not "only

pose difficulties in the use of technology per se but also cancel the learning benefits expected to spring from the instructional reform” (Demetriadis et al. 2003b, p.20). Such change may also have other impacts on the student-teacher relationship which are important given the cultural and religious background of the teaching profession in Saudi Arabia. All Saudi teachers are Muslims who live in a culture that thinks highly of teachers and considers them to be carriers of a sacred and honorable message. The Prophet Mohammed, peace be upon him, said: “A little science is better than much worshipping” which means that whatever the amount one learns or is taught will outweigh the reward of much worshipping. Arab sociologists consider the teacher the primary mainstay of civilisation and economic and social development on account of his/her tangible contribution to building and forming human minds (Hasan 2002), therefore, the existing strong relationship between teacher and student must be maintained and not eroded through ICT use in education.

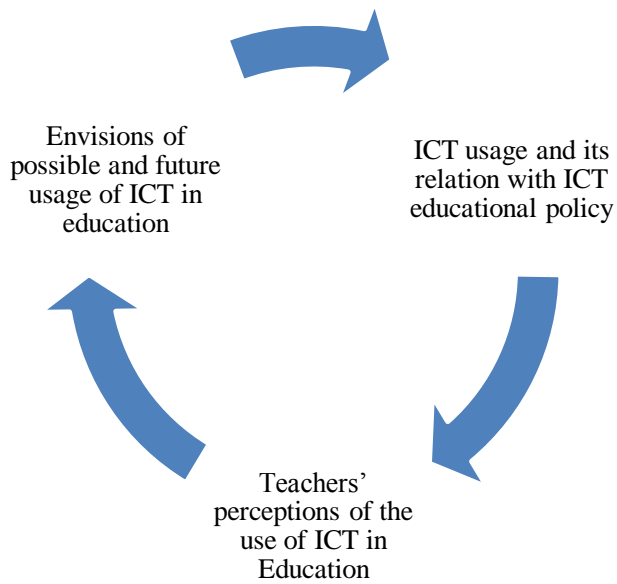
Exploring teachers’ perceptions of ICT should not stop at the stage of merely utilising it in the teaching and learning process, rather it should be extended to investigate their envisions of possible and future usage of ICT. Exploring possible, probable and preferable futures according to teachers can serve as the basis for informed actions in the present (Hicks 2002a). In addition, raising awareness of and embedding a futuristic dimension in education are likely to lead to beneficial outcomes for both teachers and students. Teachers have expressed the need for a “*futures dimension*” in the curriculum to advance students’ ability to take a “*futures perspective*” on issues related to personal, local, national and global events (Hicks 2002b). Having this futures dimension is, as Hicks ( 2003a) has pointed out one of the main tasks of education since it is essential to prepare young people for a future that will likely be very different from today.

While it is important to be aware of teachers’ rationale for ICT use and their perceptions towards it, teachers’ perceptions and views about ICT cannot be detached from influential factors in their surrounding environment. Thus, in order to fully understand and appreciate the information collected from interviews and a questionnaire, it should be contextualised within the social and cultural context from which it has been obtained. Accordingly,

information about the Saudi Arabian context was deemed to be important for two reasons. First by obtaining general information about the Saudi educational scene and situating the study socially and culturally would facilitate understanding of the greater context of activities. Second, accessing prior Saudi based research in the literature would reveal information about the present situation in Saudi Arabia and identify gaps that should be covered by future research.

On the basis of foregoing discussion, this study will focus on the following issues: ICT usage by teachers and its relation with ICT educational policy, teachers' perceptions towards the use of ICT in the teaching and learning process, and teachers' envisions of possible and future usage of ICT in education. These particular issues will be investigated because they are thought to be closely related and to influence each other; in fact, they create a closed circle. The circle starts from the educational policy which inevitably affects teachers' usage of ICT, their ICT usage is in turn influenced by their attitudes and perceptions of computers and their perceptions, either negative or positive, are likely to be influenced by the policy and how it introduces the concept of ICT in education to teachers. Teachers' perceptions of ICT will undoubtedly be reflected in their future views of ICT utilisation in education which, in turn, should be considered in any future ICT policy. Figure 3.4 shows the linkage between the research's three main issues.

*Figure 3.4 The research's three main issues and their linkage to each other*



### **3.4 Summary**

This chapter has reviewed relevant literature on the topics of teachers' ICT usage and their perceptions towards it, educational policy, and the future of education in order to set the research context, lay the foundation upon which this research is based, and define the academic and research areas of relevance to the research focus. Research evidence seems to indicate that ICT usage is increasing among teachers and their increasing contact and exposure to ICT has resulted in positive perceptions towards ICT because they are becoming aware of its potential benefits for their teaching. However, the literature review has shown that teachers are faced with obstacles to their ICT use, the most frequently cited in the literature being lack of time and training. Nevertheless, most teachers have been found to be self-motivated, with positive views of the future of education. The next chapter focuses on the research methodology used in the field work of this study.

## **Chapter Four: Research Methodology**

This chapter has one main aim: to provide an account of the study's design, research methodologies, and rationale for the choice of methods. It will include a description of the research instruments and data collection and analysis techniques. The first section focuses on the research paradigm and approach utilised to best address the research questions. It is followed by a description of the different data collection methods and their strengths and weaknesses, and then a detailed account of the data collection instruments is presented. The study setting, participants and sampling techniques are also described. Section 4.4 explains how collected data were analysed while sections 4.5 and 4.6 consider ethical issues and the study instruments' validity and reliability, respectively, and how they were addressed in the chosen approach.

### **4.1 Research Paradigm and Approach**

The research followed a naturalistic inquiry procedure and it took place within an interpretive research paradigm. This approach was utilised in the study because its purpose is to explore, understand, and give explanation of causes of a current situation (Bryman 2001). In addition, its aim is to look at multiple social interactions. Lincoln and Guba (1985, p.260) have stated that “for virtually all instances of sociobehavioral inquiry, the naturalistic paradigm is the paradigm of choice”.

The naturalistic inquiry is simply an inquiry conducted in natural settings, using natural methods, in natural ways by people who have a natural interest in what they are studying. A naturalistic researcher truly believes that “the social world can only be understood from the point of view of the individuals who are part of the ongoing action being investigated” (Cohen, Manion, & Morrison 2000, p. 19). Situations should therefore be examined through the eyes of participants rather than the researcher (Creswell 2003b). The researcher focuses on the contextual understanding of the historical and cultural settings of the participants (Bryman 2001). Since “events and behaviour evolve over time and are richly affected by context, they are situated activities” (Cohen, Manion, & Morrison 2000, p. 22).

Many researchers, such as Lincoln and Guba ( 1985), Robson ( 1993), and Creswell ( 2003b), have listed a range of characteristics of a naturalistic inquiry and set procedures to conduct such type of research, thereby creating a highly interdependent and coherent description to assist in undertaking a well established rigorous research method. This study is no different from other studies that have employed such an approach and its characteristics comprise: conducting the research in a natural setting, collecting information from people as the main source of data, employing qualitative methods, and grounding the theory in the data through constantly comparing emerging patterns and interpreting them.

Narrowing down the methodology employed in this study from the general, i.e. naturalistic inquiry, to the more specific, will lead us to the interpretive paradigm “that is sensitive to context, uses various methods to get inside the ways others see the world, and is more concerned with achieving an empathic understanding than with testing laws of human behaviour” (Neuman 2003, p. 80). It also emphasises the importance of understanding the social world by examining its interpretation from participants’ perspective and how they construct meaning in natural settings (Bryman 2001;Neuman 2003). In this paradigm, the researcher plays a crucial role. S/he goes through a detailed examination of a text which could be an oral conversation, written words, or even a picture, in order to discover embedded meaning in it and interpret the findings. Such interpretation is inevitably shaped by his/her own experiences and background (Creswell 2003b;Neuman 2003). Following the interpretation, the emergent theory should be grounded on data generated from the research, in other words, the theory should follow the research rather than precede it (Cohen, Manion, & Morrison 2000). However, it is worth mentioning here that in this paradigm any one situation may generate multiple interpretations which should be accepted and appreciated (Cohen, Manion, & Morrison 2000).

As I mentioned earlier, the data collected in this research was analysed using grounded theory. Grounded theory is so-called “because it is related to, emerges out of, is created through and grounded on empirical data” (Sarantakos 1998a, p. 200). It is “drawn from data, likely to offer insight, enhance understanding, and provide a meaningful guide to action” (Strauss & Corbin 1998b, p. 12). Grounded theory has been a subject of debate over



the years among social researchers regarding its utilisation as a research methodology or method. Generally speaking, grounded theory is an approach for looking systematically at qualitative data (for example, transcripts of interviews or protocols of observations) aiming at the generation of theory. While grounded theory is sometimes seen as a qualitative method, it reaches further: it combines a specific style of research (or a paradigm) with pragmatic theory of action and with some methodological guidelines.

In this study, grounded theory refers to a way of conducting analysis of qualitative data (Strauss & Corbin 1998b), in line with other social science researchers who have considered grounded theory as a qualitative method (Cohen, Manion, & Morrison 2000; Creswell 2003b; Nachmias & Nachmias 1996; Neuman 2003; Sarantakos 1998a), a framework for analysing qualitative data (Bryman 2001), and a set of procedures (Ibid). Grounded theory is more than grounding theory in data, it refers to a set of procedures that utilises a number of tools, such as theoretical sampling, coding, and constant comparison analysis, to produce outcomes such as concepts, categories, hypotheses, and theory.

It is generally accepted in many areas of research that decisions about research methods should be informed by the nature of the research questions, aims and objectives and that they will indicate what approach and methods should be used. This study has three aims: to look at teachers' current usage of ICT in the classroom and their perceptions towards this usage; to investigate the impact of educational policy on teachers' use of ICT in their teaching and their feelings about ICT in education; and to explore teachers' views on probable/preferable future utilisation of ICT in education. Hence, it can be seen that this study intends to look at the perceptions, feelings, and views of people. Such intention requires an understanding of how people construct meaning of situations, and this meaning is naturally conveyed via a discussion or interaction with people. A qualitative naturalistic approach was thought to be a suitable choice in this study because qualitative methods lend themselves to research that attempts to understand the complex nature of people's experiences, feelings, and emotions (Strauss & Corbin 1998b) which are known to be difficult to measure using quantitative methods (Babbie 2001b; Silverman 2001).

This methodological approach corresponds closely with the research aims and objectives of this study, and takes into consideration the importance of understanding the social, cultural, and historical context of the people under study in order to facilitate knowledgeable interpretations. Raising the researcher's awareness of the context can only be achieved through social engagement with participants obtainable through utilising qualitative methods. Neuman (2003, p.146) explains this clearly as follows:

*“Qualitative researchers emphasise the social context for understanding the social world. They hold that the meaning of a social action or statement depends, in an important way, on the context in which it appears. When a researcher removes an event, social action, answer to a question, or conversation from the social context in which it appears, or ignores the context, social meaning and significance are distorted.”*

Given the various research strategies and their underlying theoretical perspectives that have been developed in the sphere of social science, it is important to stress here that each methodological approach has its strengths and weaknesses, and the researcher's decision to choose a particular method(s) for a particular study will take into account a number of issues, including resources, but, most importantly, what s/he believes to be the best and most practical and ethical methods to achieve the research aims and objectives. The strengths of the naturalistic approach methodology chosen for this study include the fact that people are studied in their natural environments with the focus on eliciting deeper understanding of their meaning and construction of their world which, in turn, facilitates presentation of a more realistic view of the situation under study. However, the researcher should not limit him/her self to the interpretations and meaning of situations involved participants find themselves in; but should try to step back and consider the interpretations within a wider picture. The danger of a naturalistic approach arises from the researcher plunging into participants' interpretations and understanding of the world without investigating the factors which influenced their understanding (Cohen, Manion, & Morrison 2000).

## **4.2 Research Methods and Instruments**

The research here is concerned with teachers' views, feelings, and perceptions towards certain issues related to the usage of ICT in education. The most suitable way to explore and understand them is to utilise data collection tools usually associated with qualitative

approaches, such as, interviews since they concentrate on social interactions and socially constructed meanings, and have special focus on the individual. However, in order to obtain a wider picture of the current situation and to generalise the findings, a questionnaire was also used in this study. Combining interviews with questionnaires does not mean combining qualitative and quantitative paradigms in this study, it rather means integration at “a superficial level” within a single paradigm (Bryman 2001) and giving the study more breadth.

To gain a better understanding of the research methods it is worthwhile providing a description of the data collection procedures. The study comprised two phases: the first phase of the study was carried out through conducting semi-structured interviews with school teachers, both male and female. Interviews with teachers aimed to elicit information about their current usage of ICT in the classroom in their teaching practice and its relation to ICT educational policy, as well as their perceptions of this usage. In addition, their views on possible and new ways of using computers in teaching were elicited. Each interview lasted for 45 minutes, divided equally between the three main themes of the research, i.e. 15 minutes spent on each of the following: ICT usage, education policy, and the future of ICT in education.

The second phase of the study utilised the themes emerging from interview analysis to formulate the questions in the self administered questionnaire distributed among teachers who were randomly selected for this purpose. Through this selection process the researcher ensured that no one was excluded purposely by each school’s activity coordinator, who was in charge of distributing and collecting the questionnaire and was in direct contact with the researcher.

The purpose of the first phase was to give the researcher in-depth insight into teachers’ awareness of issues related to current usage of computers in their classrooms and ascertain what could be achieved or indeed what they would like to achieve. The second phase of the study helped in gathering a larger number of responses to emergent themes, which would result in generalisable results.

Detailed information on issues related to the research method, such as school selection, sampling technique, and ensuring the research's validity and reliability are discussed in later sections of this chapter. The following sections describe the research instruments. It should be noted that in order for both of the data collection instruments, i.e. interviews and questionnaire, to address the research questions, they had to be so structured as to cover as many aspects of the issues I wanted to focus on as possible. However, their structure was not overly rigid in order to maintain the characteristics of a naturalistic enquiry.

#### **4.2.1 Interviews**

##### ***Purpose***

Interviews were conducted in the preliminary stage of the study to provide important data on research issues and to act as a precursor to inform the development of the questionnaire (Cohen, Manion, & Morrison 2000). Interviewing teachers at an early stage would not only provide in-depth information crucial to the development of the questionnaire, but was also important since this study was thought to be the first on this particular setting dealing with the cited specific issues. Accordingly, little was known about the issues under investigation; and interviews would be helpful for eliciting teachers' views on various issues related to ICT in education.

##### ***Strengths and Limitations***

The strengths of interviewing arise from the fact that it:

- allows teachers to describe what is meaningful or important to them using their own words rather than being restricted to predetermined categories; thus they may feel more relaxed
- provides high credibility and face validity; results make intuitive sense to lay audiences
- allows the interviewer to probe for more details and ensure teachers are interpreting questions the way they are intended
- the interviewer has the flexibility to use his/her knowledge, expertise, and interpersonal skills to explore interesting or unexpected ideas or themes raised by interviewees.
- provides the interviewer with an opportunity to observe non-verbal behaviour

- provides the interviewer with an opportunity to correct and clarify misunderstanding
- Suitable for discussing more complex issues because the presence of the interviewer can assist in answering the questions

Despite its advantages, interviewing has its limitations, especially in the cultural setting of this study in which males and females are segregated:

- face to face interviews with teachers of the opposite gender were very difficult to conduct due to cultural considerations, therefore, phone interviews were carried out.
- may be considered inconvenient by teachers as it offers them less anonymity, and they also need to free up some time for the interview to take place
- may be more reactive to personalities, moods, and interpersonal dynamics between the interviewer and the interviewees.
- analysing and interpreting qualitative interviews is very time consuming

### ***Design***

The interview was a semi-structured interview with open-ended questions to provide more flexibility for both the researcher to ask extra questions and for the participant to offer more information (Kvale & Brinkmann 2009). It was divided into three parts covering the three main themes of the study. To elicit their spontaneous views, teachers were asked very general questions (i.e. general views on ICT in education), then they were introduced to the research themes (i.e. teachers' ICT usage and their perceptions of it, educational policy, and the future of education).

The questions asked in interviews were all derived from the study's research questions. The teachers' ICT usage part of the interview focused on eliciting teachers' views on the introduction of ICT in schools, their current usage, and factors enabling and/or hindering this usage. Their perceptions towards ICT and what influenced their feelings were also elicited. The second part concentrated on investigating the impact of the educational policy on teachers' ICT use. The third and final part of the interview was designed to enable teachers to share with the researcher their ideas of the probable future of ICT in schools as well as the preferable ideal future they wished for. The interview schedule is to be found in Appendix 3.

### ***Implementation***

Interviews followed a schedule and were recorded by a high quality digital recorder and limited to 45 minutes. For ethical reasons, all participants received a letter signed by the researcher, explaining the goal of the interview and assuring them of the confidentiality of their responses. As regards interviewing male teachers, it is not often possible in some Islamic states, especially Saudi Arabia, to conduct face-to-face interviews with the opposite gender. In this study, the researcher carried out interviews with all male teachers over the phone. An introductory information sheet was also issued to each teacher and head teacher being interviewed before the interview took place. It was thought important to introduce participants to the topics to be covered in the interview prior to the interviewing process for two main reasons: first, to ease any anxiety regarding the interview since interviewees would know in advance what it was all about and, second, to allow interviewees some time to reflect on the topics to be able to provide well thought out answers.

The number of interviewees and their roles were decided in advance. Details of participating schools and teachers are to be found in section 4.2.3. The researcher chose people playing the following roles in participating schools: head teachers, competent users of ICT teachers, and ICT coordinators. Being willing to participate and to free up some time for the interview to take place were important characteristics as well. All teachers were recommended by their head teachers as competent users of ICT in their teaching, while head teachers and ICT coordinators were chosen according to their position in the school. During each school visit, the researcher tried to gain a better understanding of the school environment by touring the school and being introduced to school infrastructure and equipment. She also had the opportunity to observe ongoing lessons that utilised ICT. During these school tours, the researcher had the opportunity to talk to the maintenance team, school deputy, and some other teachers, and such conversations offered an insightful view of the situation. However, only the scheduled interviews were recorded, other conversations were noted down in memos and notes at the end of the school visit. It is important to point out that these conversations and tours were very helpful during the analysis of interviews because they offered the researcher access to the environment the

teachers were referring to, resulting in a better understanding and interpretation of their responses.

Following the tours and general introduction to the setting of schools, the interviews were undertaken. All interviews followed the pre-planned schedule and prompting was used when necessary. As interviews were limited to 45 minutes, the researcher decided not to allow interviewees to stray from the interview topics. Some interviewees became excited and wanted to talk in-depth about their personal experiences and express their views on or criticisms of the school situation. While this was valuable information, it was not related to the interview focus.

#### **4.2.2 Questionnaire**

##### ***Purpose and rationale***

The purpose of using the questionnaire as a data collection method in this study was mainly to obtain generalisable results, since self-administrated questionnaires can reach a larger population than interviews. In addition, the use of a questionnaire would assist in fulfilling the aims of this research by providing descriptive data of the target population's attitudes, beliefs, practices, and relations (Cohen, Manion, & Morrison 2000).

##### ***Strengths and limitations***

As any tools used in social research, the questionnaire has its strengths and limitations. Its strengths were as a result of it being:

- useful in describing the characteristics of a large population, in this study, secondary school teachers in Riyadh City
- able to produce generalisable results
- suitable for utilisation in descriptive and explanatory studies such as this one
- able to provide greater anonymity to teachers which was deemed to be helpful since the questionnaire dealt with issues related to perceptions and feelings.
- a stable, consistent, and uniform measure without variation

However, its limitations were:

- Ambiguity and misunderstanding of questions could not be detected and clarified at the time
- Teachers might not have reported their true perceptions and feelings to show themselves in a good light.
- Questionnaire design and layout had to be attractive with a minimal number of pages, and the need to achieve this may have affected the questionnaire's content and the questions asked in terms of quantity and quality

### ***Design***

The questionnaire used in this study was a self-administrated questionnaire which was based on another tested and used questionnaire from another study and developed further to cover issues generated from interviews (Great Britain.Department for Education and Skills & Becta 2002;Hayward et al. 2002a;Hayward et al. 2002b;Tearle 2005). The questionnaire was carefully designed in terms of both content and style, and followed the general guidelines for questionnaire design to produce a simple, attractive, standardised data collection tool that would achieve its purpose, and to avoid any pitfalls that would reduce its effectiveness.

The questionnaire was divided into six sections covering varying issues. The sequence of sections and questions within was based on the sequence of the study's research questions which was considered logical, and also in line with Cohen and Manion's suggested questionnaire sequence which moves from "objective facts to subjective attitudes and opinions through justifications" ( 2000, p.257). The questionnaire's first section sought factual information (age, years of experience, qualifications...etc.). The following sections contained mainly closed questions, including multiple choice questions, dichotomous questions, likert scale, and rating questions. Some open ended questions were also included within each section that invited more thoughtful responses. The questions were kept short and clear instructions were given to guide participants through each question. The questionnaire contained 31 questions, nine of which were open ended questions. There was a concentration on closed questions because they are easy to analyse and quick to answer. Great attention was paid to the questionnaire's wording since it was first developed in



English and the final version then translated into Arabic because the study participants were Arabic native speakers (see piloting and implementation below for more information).

The questionnaire layout was kept simple and unified throughout. The font size used was clear, though it increased the number of pages. However, maintaining an attractive, uncramped presentation was considered more important. Instructions were written in bold type and there was adequate space between one question and the next. In the case of open ended questions, sufficient space was left for detailed responses.

### ***Content***

As mentioned earlier, the questionnaire was divided into six sections to elicit information on issues related to: personal information, teachers' use of ICT, barriers to and supporting features for ICT use, feelings towards ICT, policy and ICT, and, finally, the future of education in order to answer the research questions of the study. Questionnaire questions were drawn from three main sources: previously developed questionnaires, the literature, and data derived from qualitative interviews. Each questionnaire item was designed to answer a specific research question. For detailed information on questionnaire items and their corresponding research questions see Appendices 6 and 10.

The section 'teachers' use of ICT' aimed to elicit information that would assist in establishing an understanding of teachers' current ICT use in terms of application, method of usage in teaching, and reasons for its usage. This section also provided information about the level of ICT competency, ways of obtaining ICT skills, and ownership of computers in school and at home. The following section listed some factors that had been found in the literature and from qualitative interviews to be either supporting or hindering factors to teachers' ICT use. The open ended questions in this section gave teachers the opportunity to highlight or emphasise those factors particularly related to their own experience and situation. The feelings towards ICT section offered a list of statements so worded as to clearly elicit teachers' feelings towards it. The policy and ICT section deals with both school ICT policy and MoE ICT policy. Teachers were asked to provide information about policies known to them and explain the influence of MoE policy on their school. Their

feelings towards these policies and their influence on their feelings towards ICT were also examined through a list of statements worded for this particular purpose. The final section dealt with the future of education. It examined participants' views on the probability of some changes occurring in the future, including the changing nature of the teaching profession. The questionnaire ended with a final open-ended question that sought to elicit participants' hopes for change in the future.

### ***Piloting and Implementation***

The MoE sent a letter to Riyadh local education authority informing it of the aims and objectives of the study and asking for its cooperation and assistance in the matter. Riyadh local education authority, in turn, sent letters to all schools participating in this research, asking them to assist the researcher in her fieldwork activities, namely: interviews and questionnaire administration and data collection. Fieldwork activities were pre-planned to allow the researcher to embark on more than one activity at the same time. For instance, while the questionnaire was being reviewed by a translation committee to ensure the quality of the English/Arabic translation, the researcher engaged in final preparations for the full-scale administration of questionnaires to teachers. ICT activity coordinators were allocated by each school to help the researcher and were given detailed information on questionnaire administration. Although some of the activity coordinators involved in this study had been previously involved in similar studies, it was essential to provide such information to improve the quality of the data gathered and to minimise bias. The meetings covered the following areas: ethical considerations, sampling technique, tracking questionnaires' administration, inclusion and exclusion criteria, recording distributed copies of the questionnaire, and questionnaire collection. The contribution of the ICT activity coordinators to this study was extremely valuable. At the end of the fieldwork activities, the researcher handed a signed letter to all schools' head teachers expressing her appreciation for their cooperation and assistance.

The translation of the questionnaire was carefully conducted to ensure conceptual equivalence of the wording of the translated questionnaire. The researcher and the translation committee were aware of the pitfalls of word-to-word translation and adopted a

strategy whereby the translation aimed to ensure the meaning was not lost during the translation from English to Arabic and vice versa. Arabic standard language was endorsed as the platform for translation. This was deemed important to avoid any colloquial speech or slang phrases which might offend or limit understanding of the questionnaire's content. Ultimately, a final version of the Arabic questionnaire that took into account recommendations elicited from teachers during the pilot work and the translation committee was produced in two different versions. One was addressed to male teachers and the other to female teachers since the Arabic language is a gender based language that addresses males and females differently in terms of articles, verbs, and pronouns. In producing two versions, the researcher sought to avoid offending participants by addressing them in a grammatically incorrect style. Moreover, participants were thought more likely to be willing to participate in the research if such issues were sensitively considered beforehand.

Prior to distributing the questionnaire, it had to be piloted to check its validity and reliability. The questionnaire was purposively distributed to 10 teachers, comprising both genders, who had been previously contacted by the researcher and consented to participate in the pilot study. All teachers were interviewed by the researcher and asked to fill in the questionnaire while the researcher observed the procedure. This allowed the researcher to engage in a two-way feedback process between herself and participants. Teachers usefully contributed feedback that enabled the researcher to produce a final version of the questionnaire. Corrections included typo errors, clarification of wording, deletion of some overlapping questions, and change in some question sequences and content. For example, the following sentence was added to clarify question 27: "You may or may not be completely aware of the details of the Ministry of Education's ICT policy". Question 29 was reported to be ambiguous and therefore difficult to understand so pilot study participants were asked to compare the old and a new version of the question. The new one proved to be more clearly understood.

Having completed the pilot phase, the full implementation phase followed. The questionnaires were distributed in participating schools and the researcher met ICT activity

coordinators to explain the questionnaire to them and to answer any questions they might have. During the following two weeks the researcher kept close contact by phone with those coordinators assigned to help her in each school to answer questions asked by participants and to be updated on the progress of the questionnaire's distribution and collection.

#### **4.2.3 Sampling Technique**

Qualitative studies usually use a much smaller sample size than quantitative studies (Fraenkel & Wallen 2006). As Barbour points out, this is because “rather than aspiring to statistical generalisability or representativeness, qualitative research usually aims to reflect the diversity within a given population” (Barbour 2001, p. 1115). Moreover, qualitative data is time-consuming and expensive to acquire, transcribe, and analyse (Babbie 2001b;Cohen, Manion, & Morrison 2000). However, a range of different sampling techniques are available for qualitative researchers which include: convenience sampling, purposive sampling, “snowballing” and theoretical sampling (Cohen, Manion, & Morrison 2000;Creswell 2003a;Sarantakos 1998b). Teachers and head teachers interviewed in this study were selected using a purposive sampling technique. Purposive sampling increases the diversity of samples and enables the investigator to search for different properties. A total of 14 teachers were invited to participate. Individuals invited to participate were chosen from different backgrounds regarding their responsibilities in the school, therefore they included head teachers, teachers with ICT coordinating responsibilities, and classroom teachers. Head teachers and ICT coordinators were chosen because of their role within the school; however, classroom teachers were identified by their head teachers as being competent users of ICT in their teaching. During the interview phase of the study, 7 female teachers were interviewed face to face (2 ICT coordinators, 3 classroom teachers, and 2 head teachers) and another 7 male teachers were interviewed over the phone (2 ICT coordinators, 3 classroom teachers, and 2 head teachers).

With regard to the study's questionnaire sample, simple random sampling was chosen because this kind of sampling is suitable for large samples that are representative of the population under study (Cohen, Manion, & Morrison 2000;Fraenkel & Wallen 2006). To

ensure a random sample was obtained and all potential participants had an equal chance of being selected, participants were chosen from the registrar list, and every third person on that list was invited to participate in this study. In the second phase of the study, 300 questionnaires were distributed in 10 secondary schools, 30 questionnaires were distributed in each of the 10 schools.

### **School Selection Technique**

The study was carried out in ten secondary schools in Riyadh city, Saudi Arabia. Five were male schools and the other five were female schools. Schools were selected for participation in the study through the following school selection technique. First, all secondary schools (Boys and Girls) in Riyadh city were classified into two main categories: “Good Practicing Schools” and “ICT Co-ordinating Schools” based on information obtained from the Ministry of Education (Ministry of Education 2007). The categorisation was based on six themes: management and leadership, learning and teaching, professional development, maintenance and technical support, resources, and finance. The differentiation between “good practising schools” and “ICT co-ordinating schools” was important because practice differed in schools. Schools with better results under the themes were categorised as good practising schools while those with relatively lower results were categorised as ICT co-ordinating schools. Schools with very low results or none ICT practising schools were eliminated from the potential sample size because issues investigated in it would probably not have been relevant to their situation. The process of categorising schools is not new in educational research. This study drew its categorisation process from other studies such as Impact2 (Harrison et al. 2003) and the Becta school self-review framework (Becta 2007). The aforementioned themes were used to create a better understanding of the situation in each school and assisted in categorising them accordingly.

A good practising school should have a clear vision of ICT in the school that is reflected in its policies, guidelines, and annual plans. The school’s management engages all staff in the ICT implementation process and encourages teachers to use ICT in their teaching. Some time down the road of ICT implementation encouragement evolves to become obligation. Moreover, all subject teachers in a good practising school know how to use ICT to support their teaching in new and creative ways and do not merely present the text book content in

a digital format in a PowerPoint presentation. Teachers make the most of students' ICT skills obtained from ICT lessons and also share ideas and experiences with their colleagues and create a support network. In order to achieve this level of ICT use among teachers, a good practising school will have a professional development programme that does not depend on programmes provided by the MoE. The programme will be provided according to staff needs and develop their skills that will in turn assist in achieving the school's goals. Teachers in a good practising school will be supported by reliable in-school maintenance and technical support services and have good access to computers in the school. Such a school will have one or more computer labs, data show and a computer in each or most classrooms, printers, scanners, Internet connection, and a school website. All these will be fully financed by the school with little or no dependence on MoE funding.

An ICT co-ordinating school has similar characteristics to but is less sophisticated than a good practising school. The school management promotes ICT use in teaching and encourages and supports teachers use. However, it does not have a whole school plan of ICT implementation. Teachers' ICT use in their teaching varies in quantity and quality; they support each other and exchange experiences and skills and this process is led by the school's ICT co-ordinator. Professional development opportunities are available in the school and courses are delivered by the ICT teacher, in addition, the school depends partly on MoE courses. The school has at least one computer lab, resources room, data show in most classrooms, printers and, in some cases, Internet connection. This equipment is either supplied by the MoE or financed by the school. If supplied by the MoE it will be covered by maintenance and technical support services; if bought independently by the school it will be covered by warranty since there will be no maintenance and technical support services in the school. The school will finance its ICT purchases from the school budget, students' and teachers' donations, donations from charity, educational institutions, and large technology companies.

Having decided on the characteristics of school categorisation and eliminating incongruous schools, the remaining ones were categorised according to their geographic area North, South, West, East, and centre of Riyadh city. Ten schools (five boys' schools and five girls'

schools) were randomly selected from each side of the city. The researcher then approached chosen schools; in the case of refusal to participate in the research for any reason, another school was chosen randomly from the same geographic area. After several attempts, ten schools agreed to participate in the research, of which four were “Good Practising Schools” and six were “ICT Coordinating Schools”. Detailed information on their characteristics is presented in Table 4.1.

School	Equipment	Training	Maintenance & Technical Support	Management Guidelines
<b><i>Girl 1</i></b> <i>Good Practising</i>	<ul style="list-style-type: none"> <li>• One multimedia class</li> <li>• One computer lab</li> <li>• Data show in each classroom</li> <li>• PC in each classroom</li> <li>• PCs in staff room</li> <li>• Printers available for teachers and sometimes for students</li> <li>• Internet connection</li> <li>• School website</li> </ul>	<ul style="list-style-type: none"> <li>• In-school training by a trainer or ICT teacher</li> <li>• Teacher-teacher training</li> <li>• Continuous ICT training programmes all year round</li> </ul>	<ul style="list-style-type: none"> <li>• Maintenance department in school</li> <li>• ICT teacher provides technical support</li> </ul>	<ul style="list-style-type: none"> <li>• Promotion of teachers' ICT use</li> <li>• Promotion of effective utilisation of school website</li> <li>• New teachers should have minimum level of ICT skills</li> </ul>
<b><i>Girl 2</i></b> <i>Good Practising</i>	<ul style="list-style-type: none"> <li>• Central Library</li> <li>• One computer lab</li> <li>• Data show in each classroom</li> <li>• PC in each classroom</li> <li>• PC for each teacher</li> <li>• Portable data show</li> <li>• No printing facilities</li> <li>• Internet connection</li> <li>• Well maintained school website</li> </ul>	<ul style="list-style-type: none"> <li>• In-school training by maintenance department staff or subject teachers</li> <li>• Teacher-teacher training</li> <li>• Continuous tailored ICT training courses according to teachers' needs</li> <li>• Initial training course for new teachers</li> </ul>	<ul style="list-style-type: none"> <li>• IT department provides maintenance</li> <li>• In school technician available in each building</li> </ul>	<ul style="list-style-type: none"> <li>• Teachers must use ICT in teaching</li> <li>• Minimum level of ICT skills required</li> <li>• Laptops for teachers by easy to pay instalments</li> <li>• Software and websites subscriptions are provided</li> </ul>
<b><i>Girl 3</i></b> <i>ICT Co-ordinating</i>	<ul style="list-style-type: none"> <li>• One resources room</li> <li>• One computer lab</li> <li>• Portable data show</li> <li>• PC in library</li> <li>• No printing facilities</li> </ul>	<ul style="list-style-type: none"> <li>• Teacher-teacher training</li> <li>• Training provided by librarian when required</li> </ul>	<ul style="list-style-type: none"> <li>• MoE maintenance plus equipment warranty</li> <li>• Librarian offers technical support</li> </ul>	<ul style="list-style-type: none"> <li>• Encouragement of teachers' ICT use</li> <li>• Teachers should use resources room at least once in the term</li> </ul>
<b><i>Girl 4</i></b> <i>ICT Co-ordinating</i>	<ul style="list-style-type: none"> <li>• One resources room</li> <li>• Two computer labs</li> <li>• Data show in each classroom</li> <li>• Portable data show</li> <li>• Printer only available for teachers</li> </ul>	<ul style="list-style-type: none"> <li>• In-school training by ICT teacher</li> <li>• Teacher-teacher training</li> </ul>	<ul style="list-style-type: none"> <li>• MoE maintenance plus equipment warranty</li> <li>• ICT teacher provides technical support</li> <li>• Phone technical support is used</li> </ul>	<ul style="list-style-type: none"> <li>• Promotion of teachers' ICT use</li> <li>• Students allowed to bring laptops</li> <li>• Facilitate teachers' ICT training</li> <li>• Preferential treatment for teachers who use ICT</li> </ul>
<b><i>Girl 5</i></b> <i>ICT Co-</i>	<ul style="list-style-type: none"> <li>• One resources room</li> <li>• Two computer labs</li> <li>• Data show in each classroom</li> <li>• Portable data show</li> <li>• Limited printing facilities</li> </ul>	<ul style="list-style-type: none"> <li>• In-school training by a trainer and ICT teacher</li> <li>• Teacher-teacher training</li> </ul>	<ul style="list-style-type: none"> <li>• MoE maintenance plus equipment warranty</li> <li>• ICT teacher provides technical support</li> </ul>	<ul style="list-style-type: none"> <li>• Promotion of teachers' ICT use</li> <li>• Students allowed to bring laptops</li> <li>• Whole school plan for ICT implementation</li> </ul>



<i>ordinating</i>				<ul style="list-style-type: none"> <li>• Change in behaviour code in light of ICT introduction in school</li> </ul>
<b>Boy 1</b> <i>Good practising</i>	<ul style="list-style-type: none"> <li>• Two computer labs</li> <li>• Data show in each classroom</li> <li>• PC in each classroom</li> <li>• PC for each teacher</li> <li>• Portable data show</li> <li>• Printers available for teachers</li> <li>• Internet connection</li> <li>• Internal network</li> <li>• School website</li> </ul>	<ul style="list-style-type: none"> <li>• In-school training by a trainer</li> <li>• Teacher-teacher training</li> <li>• Continuous tailored ICT training courses according to teachers needs</li> <li>• Initial training course for new teachers</li> </ul>	<ul style="list-style-type: none"> <li>• Maintenance department in school</li> <li>• Technicians provide support for all the school</li> </ul>	<ul style="list-style-type: none"> <li>• Teachers must use ICT in teaching</li> <li>• Minimum level of ICT skills required</li> <li>• Laptops for teachers by easy to pay instalments</li> <li>• Paperless school management all school communication electronically</li> </ul>
<b>Boy 2</b> <i>Good practising</i>	<ul style="list-style-type: none"> <li>• Data show in each classroom</li> <li>• Two computer labs</li> <li>• PC in each classroom</li> <li>• PC for each teacher</li> <li>• Portable data show</li> <li>• Internet connection</li> <li>• Scanner &amp; printers in some classrooms</li> <li>• School website</li> </ul>	<ul style="list-style-type: none"> <li>• In-school training by maintenance department staff</li> <li>• Teacher-teacher training</li> <li>• Continuous tailored ICT training courses according to teachers' needs</li> <li>• Initial training course for new teachers</li> <li>• ICT training courses all year round evening classes available</li> </ul>	<ul style="list-style-type: none"> <li>• Maintenance department in school</li> <li>• Technicians provide support for all the school</li> </ul>	<ul style="list-style-type: none"> <li>• Teachers must use ICT in teaching</li> <li>• Minimum level of ICT skills required</li> <li>• School project to produce all subject books electronically</li> </ul>
<b>Boy 3</b> <i>ICT Co-ordinating</i>	<ul style="list-style-type: none"> <li>• One resources room</li> <li>• Data show in each classroom</li> <li>• Portable data show</li> <li>• PC in staff room</li> <li>• Two computer labs</li> <li>• Internet connection</li> <li>• School website</li> </ul>	<ul style="list-style-type: none"> <li>• Teacher-teacher training</li> </ul>	<ul style="list-style-type: none"> <li>• MoE maintenance plus equipment warranty</li> <li>• ICT teacher provides technical support</li> </ul>	<ul style="list-style-type: none"> <li>• Promotion of teachers' ICT use</li> <li>• ICT use in teaching is a school project all teachers share and exchange experience</li> <li>• Only Word processed document accepted</li> </ul>
<b>Boy 4</b> <i>ICT Co-ordinating</i>	<ul style="list-style-type: none"> <li>• One computer lab</li> <li>• Data show in each classroom</li> <li>• No printing facilities</li> </ul>	<ul style="list-style-type: none"> <li>• Teacher-teacher training</li> </ul>	<ul style="list-style-type: none"> <li>• MoE maintenance plus equipment warranty</li> <li>• ICT teacher provides technical support</li> </ul>	<ul style="list-style-type: none"> <li>• Encouragement of teachers' ICT use</li> </ul>
<b>Boy 5</b> <i>ICT Co-ordinating</i>	<ul style="list-style-type: none"> <li>• One resources room</li> <li>• Two computer labs</li> <li>• Data show in computer and sciences labs</li> <li>• Some PCs available in science labs</li> <li>• Printers available for teachers</li> <li>• Wireless internal network</li> </ul>	<ul style="list-style-type: none"> <li>• Teacher-teacher training</li> <li>• In-school training by ICT teacher</li> </ul>	<ul style="list-style-type: none"> <li>• MoE maintenance plus equipment warranty</li> <li>• ICT teacher provides technical support</li> </ul>	<ul style="list-style-type: none"> <li>• Encouragement of teachers' ICT use</li> </ul>

**Table 4.1 Schools' Characteristics**

### 4.3 Study Population and Participants

In total, fourteen teachers participated in interviews. Seven informants were male and seven were female. All informants had a minimum educational level of university or a teachers' colleges degree; one participant had a Master degree. Four of the fourteen participants were head teachers, four ICT coordinators, and six classroom teachers. The teachers taught different subjects: mathematics, physics, the social sciences and history. All interviews with females took place at their schools, whereas interviews with males were conducted over the phone. Table 4.2 presents details of participants' characteristics.

The study population in the second phase of this research utilising a questionnaire comprised teachers working in the ten schools participating in this study. Teachers on duty at any of the ten schools during the two-week period of the study were eligible for inclusion in this research. Thirty questionnaires were distributed in each of the ten schools, making a total of 300 questionnaires.

Interviewee code	Location	Job Title	Educational level
ICT-1	Girl 5	ICT teacher & Co-ordinator	University Degree in Educational ICT
T-1	Girl 2	Mathematics Teacher	University Degree in Mathematics
H-1	Girl 1	School Headteacher	University Degree in Computer Sciences
H-2	Girl 4	School Headteacher	Teachers College Degree in History
ICT-2	Girl 4	ICT teacher & Co-ordinator	University Degree in Computer Sciences
T-2	Girl 1	History Teacher	Teachers College Degree in History
T-3	Girl 3	Social Sciences Teacher	University Degree in History
ICT-3	Boy 5	ICT teacher & Co-ordinator	Teachers College Degree in Computer Sciences
H-3	Boy 3	School Headteacher	Teachers College Degree in Arabic Language
H-4	Boy 1	School Headteacher	Master Degree in Applied Linguistics
T-4	Boy 2	Mathematics Teacher	University Degree in Mathematics
ICT-4	Boy 4	ICT teacher & Co-ordinator	Teachers College Degree in Computer Sciences
T-5	Boy 1	Physics Teacher	University Degree in Physics
T-6	Boy 3	ICT teacher	Teachers College Degree in Computer Sciences

**Table 4.2 Participants' Characteristics**

## **4.4 Data Analysis Procedures**

The data analysis stage is a very important stage of the research, since it changes the raw data obtained from the data collection tools into meaningful information if the procedures and statistical tests used are suitable for answering the research questions. The following sections summarise the data analysis process for both data collection tools: interviews and questionnaires.

### **4.4.1 Interviews Analysis**

Qualitative data analysis is an iterative procedure (Creswell 2003a;Denzin & Lincoln 2003a). Data analysis starts from the moment the analyst transcribes, listens to, and reads interviews. In this study, the researcher had the opportunity to become well-acquainted with her data, as she interviewed and transcribed all interviews herself. The researcher also read the text and listened to the tapes many times to ensure she was thoroughly familiar with the material, prior to identifying categories using the constant comparison method. Based on the grounded theory principles developed by Glaser and Strauss,(Glaser & Strauss 1967;Strauss & Corbin 1997;Strauss & Corbin 1998a), the constant comparison method was important for this study because the researcher had to develop, using teachers' own views on ICT in education, a holistic perspective of the current situation and use these views to identify emerging patterns and develop a questionnaire (Babbie 2001a;Denzin & Lincoln 2003b), The constant comparison technique was adopted for constant comparison of emerging patterns and categories. As Glaser and Strauss note (Glaser & Strauss 1967), using the constant comparative method involves four stages:

- Comparing incidents applicable to each category.
- Integrating categories and their properties.
- Delimiting the theory.
- Constructing a theory.

In this study, the last two stages of Glaser and Strauss' approach were not used because of its exploratory nature. Developing and obtaining an in-depth understanding of teachers' views on ICT in education was the main focus of this study. Thus, the researcher applied the first two stages only in this research. The first stage, 'comparing incidents applicable to each category', was conducted using manual techniques. First, when the transcripts were

completed, the researcher used a hard copy of them to manually identify broad 'in vivo' and 'open codes'. This stage involved using coloured highlighters and writing notes in the margins of transcripts, as well as referring to the field memos made earlier. It also included identifying differences and contradictory views among informants. A crucial component of the constant comparison method is a systematic search for views, particularly contradictions (deviance) and cross-indexing them with the rest of the data to identify explicit or hidden similarities.

The constant comparison method enabled the researcher to constantly compare new emerging codes with existing codes and establish a conceptual link between codes. This initial stage produced a wide range of codes. Codes under each category were grouped into four major thematic sections, namely: Teachers' ICT use, teachers' perceptions towards ICT, ICT and policy, and the future of education. Chapter five will discuss these at length

#### **4.4.2 Questionnaire Analysis**

##### ***Data coding and entry***

Prior to the analysis stage, data was checked for completeness, i.e. to ensure there was an answer to most questions, and then checked for accuracy, i.e. that questions had been answered as accurately as possible. Finally, questions were checked to ensure they had been understood correctly by respondents. Answers that were not in any way related to a question were considered void. The next stage in data analysis preparation was data reduction, which meant coding the responses to questionnaire items and deciding procedures to be taken for missing or contradicting values. Data from completed questionnaires was entered into the computer using the Statistical Package for Social Science Software (SPSS 13). The entered dataset was saved and data analysis subsequently undertaken.

##### ***Analysis***

A descriptive analysis of the data obtained from the questionnaire's closed questions was carried out using frequencies and percentages. No other statistical tests were performed since the main objective of the questionnaire was to obtain generalisable results. In addition, answering the study's research questions did not require statistical tests.

However, there were nine open-ended questions in the questionnaire which required another data analysis approach to fulfil the purpose of the questionnaire. The process started by recording responses and categorising similar ones together. The exact wording was not considered, rather the general meaning of the responses. For example, “insufficient computers in the lab”, “students’ computer ratio”, and “unsuitable hardware” were all categorised under “Lack of ICT resources”. Performing counts and ranking responses according to the most mentioned followed the categorisations step.

#### **4.5 Ethical Issues**

Ethical issues related to the study were carefully considered and the researcher complied with the standards advised by BERA and Exeter University, because any action regarded as unethical could have jeopardised the study’s reliability and consistency. In addition, Saudi people are not acquainted with social science research to the same extent as people in Europe or the USA therefore, the researcher had to take steps to assure people of her genuine intentions in carrying out the research. Before the empirical work commenced, the researcher clearly informed the participating schools’ head teachers about the aims and purposes of the research, and their permission was sought for the researcher to gain access to the school teachers. She gave detailed information and full explanations to those wanting to know more about the nature of the study. She and her assistants made every effort to ensure the data collection process went smoothly.

The teachers were informed about the aims and purposes of the research in two ways: first, verbally from the researcher and, second, in written form in the covering letter accompanying the questionnaire and invitation to invite potential interviewees to participate in the interviewing process. The letter’s contents assured teachers that their identity would be withheld, sought their approval for recording the interviews, explained their right to withdraw from the research at any time, and reminded them of the importance of answering questions honestly to ensure the research’s validity. The researcher and all others involved in the research complied with Exeter University’s ethical requirements, and assured all research participants that data elicited from them would be treated in the strictest confidence and any information gathered would be used for research purposes only.

Permission for the study was sought from the University's Ethics Committee. The research proposal contained full details of the research methods and emphasised the researcher's awareness of the need to carefully consider ethical issues in relation to the study. Her stated endeavour to comply with the standards advised by the University led to the study being approved by the University's Ethical Committee. The permission of the local educational authority in Riyadh was also sought to gain access to schools which received letters from the authority asking them to cooperate with the researcher.

#### **4.6 Validity and Reliability**

In this study issues related to validity and reliability were thoroughly considered in both phases of the study: interviews and questionnaires.

##### ***Interviews***

The validity or truthfulness of any research is the extent to which an account accurately represents the social phenomena to which it refers (Hammersley 1990). This study's validity was ensured through performing the constant comparative method which is one of several techniques that aim to look critically at data in order to come up with more valid findings (Silverman 2000; Silverman 2001). In practice, the analysis started with small chunks of the interview transcripts and identifying emerging themes and then trying to find other instances where the same theme occurred. For instance, one teacher mentioned time as a factor hindering his ICT usage. I searched through the data to find other instances where time was also considered a hindering factor. Hammersley defines reliability as "the degree of consistency with which instances are assigned to the same category by different observers or by the same observer on different occasions" (1992, p.67). The study's reliability was maintained by pre-testing the standardised interview schedule to ensure that all participants would understand the questions similarly and answers elicited would be analysed on the basis that they did not have any kind of uncertainty or ambiguity. The study's reliability was further confirmed by comparing the researcher's analysis of some chunks of the interview transcripts with another qualified researcher's analysis of them (Silverman 2001).

### ***Questionnaire***

In testing the questionnaire's validity, the researcher was aiming to find out whether she could "draw meaningful and useful inferences from scores on the instrument" (Creswell 2003b, p.157), as well as ascertain whether the questions were understandable and caused no confusion to participants when answering them. Testing a questionnaire's reliability assesses the internal consistency of items, that is, "the degree to which the items that make up the scale are all measuring the same underlying attribute" (Pallant 2001, p.6). Cohen, Manion and Morison ( 2000, p.117) stated that "for a research instrument to be reliable, it must demonstrate that if it were to be carried out on a similar group of respondents in a similar context (however defined), then similar results would be found".

The questionnaire's content and face validity were confirmed as follows:

- The literature review: the study's questionnaire was an extended version of another tested and used questionnaire from another study. This questionnaire was selected from amongst other questionnaires after an intensive search and review of the available literature and proven to have a high level of internal validity.
- A second draft of the study's questionnaire was piloted on 10 teachers. Participants' remarks were addressed and taken into account when producing the final copy.
- A third and final draft of the questionnaire was handed to three Saudi Education academics who had good skills in both spoken and written Arabic and English. In what is known as a face validity check, the researcher asked them to check the Arabic translation, and the words and phrases used, etc. The researcher's supervisors also provided valuable comments for enhancing the questionnaire's effectiveness.
- The final version of the questionnaire was subsequently produced and implemented in the study.

### **4.7 Summary of Study Objectives, Design, and Methods**

Every effort was made to ensure the study's consistency and comprehensiveness. Aims, objectives, and research questions were carefully linked to a suitable research design and methods that would assist in fulfilling the aims, addressing the objectives, and answering the questions. The study had seven objectives:

*“To investigate the current use of ICT by teachers in their teaching”*

*“To identify the reasons why teachers are using ICT in their teaching”*

*“To identify the supportive influences on ICT use”*

*“To identify the motivators and incentives for using ICT in teaching”*

*“To identify the factors and agencies hindering teachers’ use of ICT in teaching”*

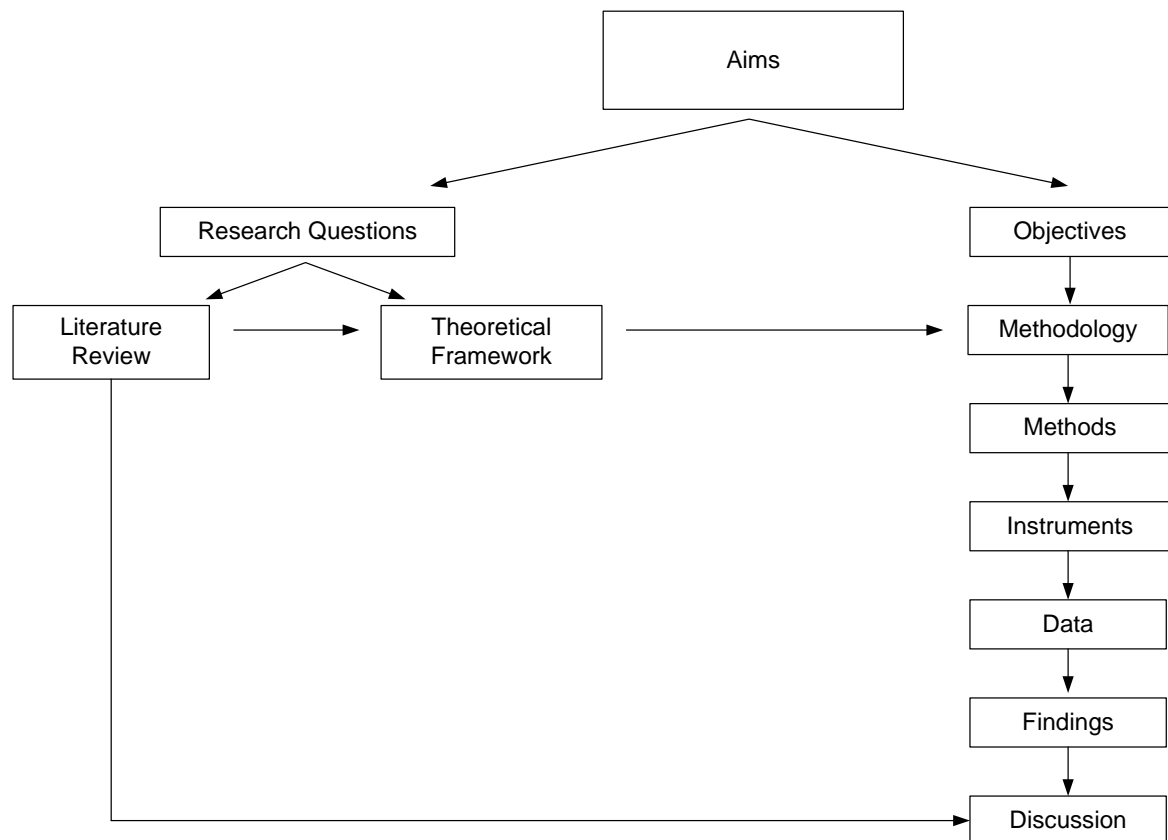
*“To explore the relationship between educational policy and teachers’ use of ICT and their feelings about ICT in education”*

*“To identify teachers’ views on probable/preferable future utilisation of ICT in education”*

The research’s objectives were addressed twice. First, by using semi-structured interviews with teachers and head teachers, which also aimed to inform the development of the questionnaire; and, second, using a self-administrated questionnaire distributed among a sample of teachers.

Figure 4.1 below shows the link between the different parts of the study.

**Figure 4.1 Link between study parts**

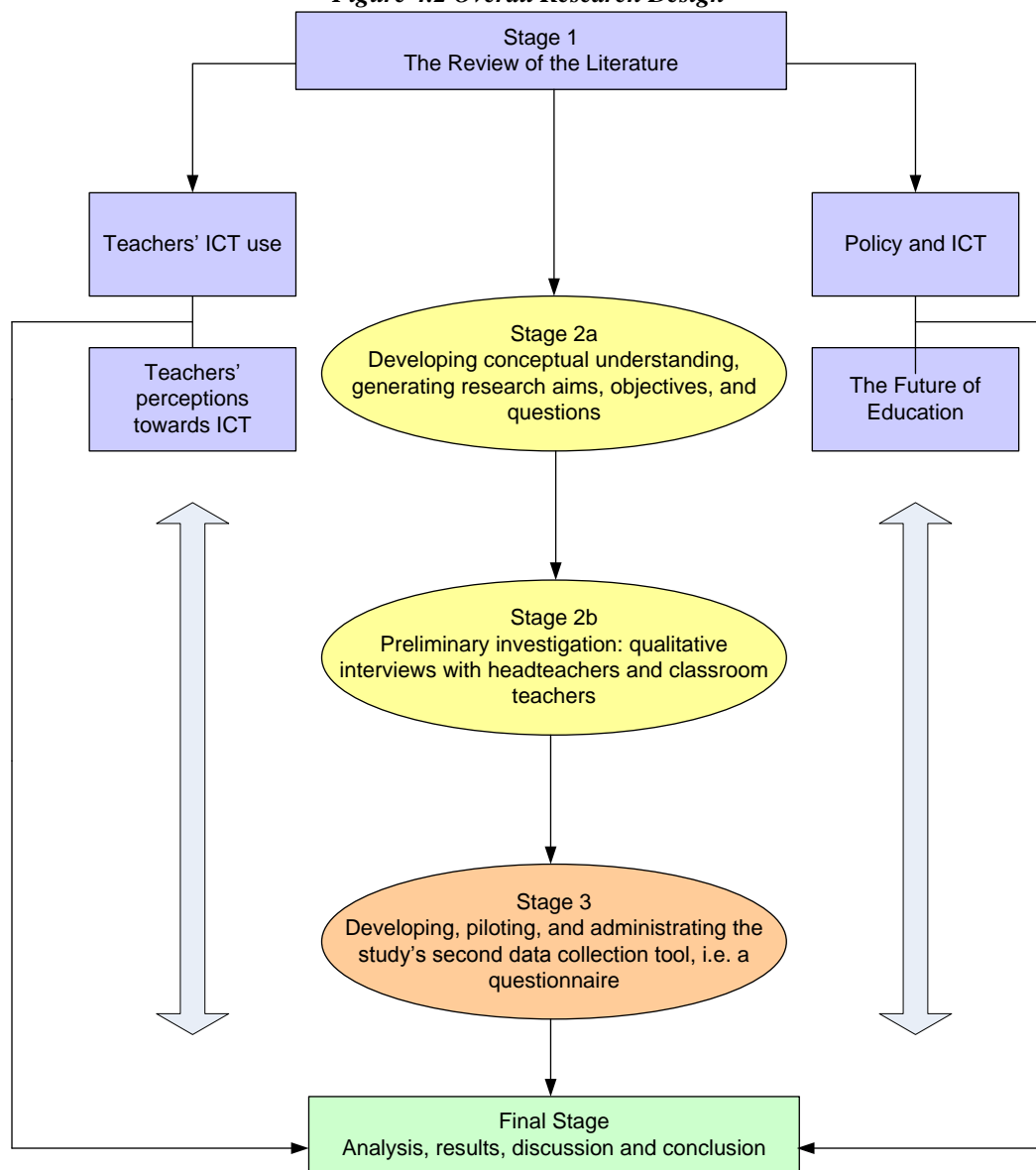




## 4.8 Summary

This chapter has presented an account of the study's methods, design, and rationale. It has also presented a detailed account of how the empirical work was carried out, including a description of the research's two main phases: a preliminary qualitative phase, followed by survey development and administration. Data analysis methods have also been explained. Figure 4.2 presents the overall research design. The next chapter embarks on the analysis of data derived from interviews with teachers and head teachers. It also presents the findings derived from the data generated by the questionnaire.

*Figure 4.2 Overall Research Design*



## **Chapter Five: Data Analysis**

The previous chapter focused on the methodological framework, methods and instruments used in this study, and the methods for data analysis. This chapter presents the findings derived from the interview and questionnaire data gathered from teachers in secondary schools in Riyadh, Saudi Arabia. The chapter is divided into two main sections: the first deals with the interview data (14 interviews) and the second with the questionnaire data (266 participants).

### **5.1 Analysis Strategy**

As has been explained in the previous chapter, codes, code descriptor, and categories were identified using the constant comparison method. The first stage involved identifying a sentence in a text related to a specific issue that generally described the whole text; this sentence was labelled a “code” which, in this instance, meant a system of words used to represent others. Codes were then categorised into four categories related to the four major thematic sections associated with the research questions, namely: teachers’ ICT use, teachers’ perceptions towards ICT, ICT and policy, and the future of education. Under each section there were many codes which were examined closely, and similar codes were grouped together in two subsequent stages. First, they were grouped under a general code descriptor that described all entries in this category. Second, the entries were further examined and similar ones were grouped together and assigned another precise code descriptor. Descriptors were derived from the data to maintain compatibility with the constant comparison method based on the grounded theory principles developed by Glaser and Strauss (Glaser & Strauss 1967; Strauss & Corbin 1997; Strauss & Corbin 1998a). The process of interview data analysis involved four stages of categorising and describing, starting from codes, followed by category, then general code descriptor, and finally, the precise code descriptor. The following Table 5.1 provides an example of this process.

Code
Ability to embody concepts, experiments, and natural phenomena
Category
Teachers' Usage of ICT in Teaching
General Code Descriptor
Advantages of ICT use in Teaching
Precise Code Descriptor
Advantages for the teaching and learning process

**Table 5.1 Analysis Descriptor**

During the interview data analysis process the researcher had to make several decisions regarding issues raised from the data. Preliminary analysis indicated that participants had confused *supporting factors*, *incentives*, and *motivators* and had used these terms interchangeably. In the interview schedule, *supporting factors* were meant to represent those things that if teachers had them in their school or environment would assist their ICT usage in teaching (such as training and better equipment), whereas *incentives* were the tangible benefits that perhaps drove or encouraged teachers to use ICT in their teaching (such as teacher annual assessment). *Motivators* on the other hand, included both intrinsic and extrinsic incentives, but with no expectations of gain (such as belief in ICT benefits in education). Consequently, the decision was made to assign suitable codes to the supporting factors category, even though they may not have been directly mentioned in an answer to a question. It was, however, thought best to merge incentives and motivators and consider them as one category because of their close meaning, especially after consulting the Oxford English dictionary which describes an *Incentive* as *a thing that motivates or encourages someone to action or increased effort* and a *Motivator* as *something which provides an incentive; moves to action; impels* (Oxford Dictionary 2007).

## 5.2 Interview Findings

To assist the reading of this section, headings are designed to be consistent with the study's research questions, whereas subheadings convey the overall idea of the tables. Above each table is the original question asked in the interview, while the table presents the codes which emerged from the interviews grouped and put into categories. The tables have two columns; the first shows the general code descriptor and the second shows the responses

within this category. These responses are presented in the most frequently mentioned order. The most frequently mentioned comment comes first followed by the least. On some occasions the number of responses in a category is mentioned as it was thought it would add extra information.

### 5.2.1 Teachers' Usage of ICT in Teaching

#### *Teachers' views on ICT in Schools*

*What do you think about the introduction of ICT in schools?*

<b>Strongly Agree</b>	Total support – Necessary – Natural - The correct next step in education Very, very important - Cannot do without ICT - Very positive thing Indisputable – Excellent – Fundamental
<b>Agree</b>	Good in schools - Great for some subjects

*Table 5.2 Teachers' views of ICT in schools*

All teachers had positive views about the importance of ICT introduction to schools. While, more than two-thirds strongly agreed, the rest agreed with less assertion on ICT importance in schools. Teachers provided detailed answers to the question, which indicated they were trying to convince the interviewer of ICT advantages, giving some examples from their teaching experiences that supported their positive view. None of the comments was limited to teachers' views on ICT in schools, they extended to cover advantages of ICT, therefore, there was a strong link between teachers' views on ICT in schools and the advantages they believed it offers the teaching and learning process. This correlation is illustrated in the following quote by a teacher (ICT-2): *"Introducing ICT to schools is considered to be a positive step for us because through it we can embody concepts and that is very important. Things that you cannot embody in reality you can embody using ICT or simulate a special environment."*

#### *How and what are teachers' ICT uses*

*How are you currently using ICT in your teaching?*

<b>ICT uses</b>	Writing documents – Presentations - Internet websites - Special software - SPSS - Design own website
<b>Application</b>	<b>General</b> MS Word - PowerPoint - Excel - Flash - Net Support - Switch - Photoshop - SPSS - Access - Outlook
	<b>Educational</b> Graph Metica – Capri – Geometry - Derive Six - Graph Math

*Table 5.3 Teachers' current ICT use*

Teachers used ICT differently, however, all of them mentioned using ICT for writing documents and designing presentations. Only one teacher had his own website which he used purely for educational purposes. The applications used varied as well, but the most frequently mentioned were the ones that served the former uses, i.e. MS Word and PowerPoint. Only Mathematics teachers were found to use special educational software designed specifically to assist in explaining and illustrating mathematical processes and concepts.

### ***Types of ICT usage***

*To which category do you consider your ICT usage belongs*

- a) *Using ICT as a supplement to the curriculum*
- b) *Using ICT as a reinforcement of the curriculum*
- c) *Using ICT as a facilitator for an emerging curriculum*

<b>Types of ICT Usage</b>	ICT as a supplement to the curriculum (4 comments)
	Using ICT as reinforcement of the curriculum (8 comments)
	Using the Internet as a method of continuous communication (4 comments)

***Table 5.4 Type of ICT usage***

It was suggested to teachers that their use of ICT fell into one of the three categories. The first was using ICT as a supplement to the curriculum and teachers who fell into this category would use traditional teaching methods in addition to using ICT occasionally. Teacher H-1 commented: *“I am going to use computers as long as they are going to add something different to the lesson, new dimension that cannot be added without using them, because the interaction between the teacher and student is far better and cannot be replaced.”* The second was using ICT as a reinforcement of the curriculum through which teachers would use ICT as a medium to convey information, either by using educational software, presentation, stimulation, etc. The absence of ICT in a lesson delivered in this way would hugely affect the quality of it or at times jeopardise its delivery. Teacher ICT-3 expressed his fear of technical problems: *“I deliver lessons in the computer lab using NetSupport software. The whole lesson is prepared to be presented electronically. I feel excited and happy about this type of usage, but I always fear any technical problems because I will be in big trouble.”* The third way was to use the Internet as a method of continuous teacher-student and student-student communication. This communication would take place either by email, school website, or the teacher’s own website. Teacher T-1 stated

that this usage has many advantages: *“I am able to make use of students’ excitement about using computers. They feel so excited communicating with me or their classmates via school website discussion forums, so I have extended my teaching role to cover their time at home by sending group homework, and electronic assessment, as well as responding to their posts. It has been a great success.”*

Teachers insisted that it is not applicable to favour one type of usage over other; one has to take into consideration the subject taught, the school environment and, above all, the benefits gained from using ICT. One teacher T-2 said, *“The best way of using ICT is a little bit when it is really needed to make the point. It is as simple as that.”*

### ***Rationale for ICT use***

*Why are you (not) using ICT in your teaching?*

<b>Global Influence</b>	Accompanying advancement in technology Catch up with developed nations It’s a symbol of modernisation Era of technology use and the illiterate one is the one who does not know how to use ICT
<b>To Benefit the Teaching Process</b>	Effective method to convey information Change of routine to keep boredom at bay Method of improving and developing teaching Professional way of teaching Convinced of its benefits Some students cannot understand new scientific concept at first. ICT offers the possibility of repeating lesson explanation by saving it on CDs
<b>Pragmatic</b>	Make use of available equipment Pressures to change from students, teachers, and parents

***Table 5.5 Rationale for ICT use***

Teachers used ICT for several reasons, either because of global influence, to benefit the teaching process, or for pragmatic reasons. Under the influence of globalisation and widespread use of technology, teachers felt either motivated or forced to use ICT in their teaching. Motivated teachers’ view was reflected in teacher T-3’s comment, *“School has a major role, that is, to help in educating students to be good citizens who participate fully in the economic and social environment of the country. As you can see, computers are everywhere, they are used all the time in companies and working places so it is part of the*

*school role to help in educating students to be able to function properly in their future working environment.” Teacher ICT-3 agreed with his colleague, saying “Saudi Arabia is heading towards e-government. In 2010, all government services will be delivered electronically. How can people benefit from this if they cannot use computers? I think it is important to teach them not only how to use them but also how to fully interact with them.” Teachers who felt forced to use ICT because of global influence felt this way because as one teacher T-4 explained “This is the era of technology and if one wants to survive he must use ICT and speak English.”*

Some teachers used ICT to benefit their teaching. One teacher, ICT-2, believed using ICT to be the right way to take education to the next level towards development, whereas teacher T-4 viewed using ICT as the professional way of teaching, because it is an effective tool to convey information. From the wider context of teachers’ comments, it can be seen that teachers viewed ICT either as a tool or as a method. This difference intuitively implied a difference in practice of using ICT in their teaching. The teaching practice of those teachers who viewed ICT as a method was hugely affected in terms of pedagogy. On the other hand, teachers who viewed ICT as a tool used it merely as an addition to their teaching practice. Some teachers mentioned that their ICT use was due to the pressure they faced to use it from different parties, such as head teachers, parents, and students. It was also due to the fact that they wanted to make use of available equipment. It is important to note that teachers who mentioned these two reasons for using ICT did not limit themselves to these two reasons; but mentioned others as well.

### ***Advantages of ICT use in Teaching***

*What do you perceive to be the usefulness of using ICT in teaching?*

<b>Advantages for Students</b>	Improves students’ level Increases independence among students Assists in self education Offers continuous student-teacher communication Improves students’ research skills
<b>Advantages for Teachers</b>	Time saving Effort saving Better class management, use of ICT attracts attention ICT is a tool that can lift the burden from the teacher’s shoulders

	Increased cooperation among teachers Offers easy and quick access to all sorts of information Makes use of students advanced skills in offering technical support Teacher acceptance and willingness to learn from their better skilled students Assists teacher in mental preparation of the lesson Neat presentation of the lesson Helps teachers stick to planned lessons (presentations) Willingness to change Encourages teachers to search and read more Advances teachers' knowledge through research Teachers' ICT use will have a psychological influence on students who will view their teacher as modern
<b>Advantages for Teaching and Learning Process</b>	Changes routine and keeps boredom at bay Ability to embody concepts, experiments, and natural phenomena Attracts students' attention Students' interaction and attention Information reinforcement Maintains quality in all lessons delivered during the day Flexible and better teacher-student relationship Improves technical skills for teachers and students Student skills acquired during ICT lessons can be used in other subjects Students can help teachers prepare lessons Possibility of electronic assessment using Net Support or other software

**Table 5.6 Advantages of ICT use**

As has been mentioned above, there was a link between teachers' views on ICT in schools and the advantages they believed it offers the teaching and learning process. Students, teachers, and the teaching and learning process are all beneficiaries of these advantages. Teachers viewed students as being more independent, achieving better, and developing better studying skills as a result of them using ICT in their teaching.

As regards teachers, time and effort saving was the most frequently mentioned advantage of using ICT in their teaching. However, most teachers emphasised the fact that for new ICT users, time and effort saving would not be as tangible and have such a big impact as for experienced teachers because, as one teacher, T-3, explained, *"Time was a hindrance for me when I started using ICT in my teaching, but sometime down the road and especially since I have taught the same subject and classes for sometime now I only need to add or update information, and this gives me time to do other new things."* Teachers also indicated that ICT use in teaching was advantageous to them before and during the lesson, in terms of



its preparation and presentation, particularly because of the ease of access to information which encouraged teachers to search and read more. Willingness to change and learn from others was viewed as yet another advantage of ICT use. Teachers pointed to a changing attitude in their teaching practice after using ICT in their teaching. Teacher ICT-2, said *“The use of ICT in education has had an effect on teachers. After they used ICT and experienced the change, they started changing in other small things like studying outdoors; they even started competing with each other in changing and developing and renewing their practice even without the use of ICT.”*

Teachers believed ICT use to be advantageous to the teaching and learning process. The three most mentioned advantages were: changes routine and keeps boredom at bay, the ability to embody concepts, experiments, and natural phenomena, and, it holds students’ attention. Teachers also emphasised its benefits regarding information reinforcement by offering different methods to convey information using pictures, sounds, videos, and practical application. Teacher T-1 said, *“I use ICT to reinforce the lesson. From my experience, I find that when students are concentrating on something with all their senses, they never forget what they have learned.”* Her colleague T-2 agreed with her and added *“I use ICT to obtain and retain information when I teach a history lesson. I add a picture of a famous leader and students never forget the name since they link it to the picture which assists them in recalling the information.”*

### **Factors and Agencies Supporting ICT Usage in Teaching**

*What are the influences supporting ICT usage?*

<b>Supporting Factors</b>	Availability of professionally developed software
	Training
	Application of ICT in teaching
	Basic ICT skills
	Internet use
	Using hardware (smart boards, projectors...)
	Class management skills
	Encouraging school environment
	The new curriculum

***Table 5.7 Factors supporting ICT use***

Teachers mentioned a number of factors supporting their ICT use in teaching. The availability of professionally developed educational software was considered the most important one. Teachers expressed their need for software that is interactive and designed on a pedagogic and scientific basis. Teacher T-2 added another important specification, that it should be in the Arabic language and criticised Arab software companies for not fully participating and taking the lead in this arena. Another teacher, H-4, contended that lack of professionally developed software resulted in increasing teachers' workload since they were left having to design their own programs. Given the limited programming experience of most teachers, this led to increased use of uncreative PowerPoint presentations as the easy option for quick programming.

Training was another factor supporting ICT use mentioned by teachers. They specified five types of training they considered to be supportive of their ICT use. All teachers mentioned either their need or the importance of training in the application of ICT in teaching. Teacher T-2, said, *"The most important thing is training in how to use ICT in teaching, because general ICT skills can be obtained easily in a one week training course but the difficult bit is to use it in my teaching."* Training to use available hardware was also mentioned. Teachers expressed their need to be trained specifically in new equipment introduced in school, such as scanners, printers, digital camera and so on, and not to assume that teachers with good ICT skills could use other electronic devices without instruction or training.

By an encouraging school environment as a supporting factor was meant the availability of hardware, software, school management support, resources room, students' acceptance and all other causes of successful use of ICT in teaching. Teacher T-2 made clear that her ICT use was greatly influenced by the school environment, *"I taught in another school before and I never used ICT in my teaching, but in this school it is different because the environment is so encouraging. It is sad that some teachers are not making the most of it."*

Finally, the new secondary school curriculum was also mentioned as a supporting factor by some teachers because it is published electronically on CDs, which makes it easier for teachers to borrow texts, pictures, and diagrams and use them in their lessons. It also

contains some ideas for lessons and they mostly depend on ICT. Therefore, teachers as they said found themselves encouraged to use ICT.

### **Incentives and Motivators of ICT Usage in Teaching**

*What incentives are there in relation to using ICT in teaching?*

<b>External Incentives</b>	School Policy School guidelines and policy Head teacher encouragement and motivation Peer Approval Letters of gratitude and appreciation from head teacher Encomium and appraisal Competition among teachers Students Students' acceptance and support Students' advanced competence with ICT Leaves a good impression on students and parents Life experiences Tangible benefits of ICT use in teaching First hand experience Own success Using ICT is an indicator of teachers' competency Considered school expert and asked for help Another enthusiastic teacher
<b>Internal and Personal Incentives</b>	Personal Incentives Teacher annual assessment Good for my CV To keep my job ICT course certificate is a condition for promotion Internal Incentives A desire to develop I like computers Do not want to be ignorant Beliefs Belief in ICT benefits ICT is a necessity

***Table 5.8 Incentives and motivators of ICT use***

Teachers mentioned some incentives and motivating factors for their ICT use. They could be categorised as external incentives and internal and personal incentives. Although school policy was mentioned as the top motivating factor, many teachers combined the policy with teacher's internal incentives. One head teacher, H-4, said, "*Teachers' use of ICT is a*

*combination of internal incentive from the teacher, since no one likes to appear ignorant among colleagues, and external from the school policy which is very clear and strict about teachers with no ICT skills. I think it is important to have both the external and internal motivating factors in order to achieve something.*” Peer approval was mentioned as an incentive, however, one teacher pointed out that life experiences and internal incentive could result in more motivated teachers than depending totally on external incentives. Teacher T-3 commented, *“My sense of achievement is my main incentive, I do not wait for external incentives because a lot of people around me are still hesitant about the use of ICT so I think the MoE should not depend on incentives to encourage teachers to use ICT, they should be obliged to do so.”* Teacher T-4 asserted, *“I like to view the use of ICT in schools as a formula: internal incentive + school encouragement = good use of ICT.”*

Some teachers stated that internal incentives were more motivating for them. Teacher T-1 explained that teacher annual assessment was the main incentive for her since the result of this assessment would determine the renewal of her contract. Belief in ICT benefits was another internal incentive that was mentioned by most teachers. Teacher H-4 stated, *“The benefits of using ICT in teaching are the main incentive for its use for me. Incentives are strongly related to benefits, if ICT is advantageous and beneficial, that is good enough reason to use it.”*

## **Hindrances to ICT Usage in Teaching**

*What do you think hinders your use of ICT in teaching?*

<b>School Setting</b>	Technical problems (failures and break down) Scheduling problems Too many students using one computer Not enough hardware Limited access Old hardware Lack of Maintenance Lack of technical support Lack of learning resources (software) Lack of printing facilities No access to the Internet Slow dial up Internet connection Need lab assistance
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<b>Training</b>	Lack of time for training Lack of ICT experience for teachers (ignorance creates fear) Taking ICT courses is not beneficial moneywise Lack of class management skills Free Ministry courses are very short, 2-3 days Longer courses are not free and not subsidised Courses not directed for varying skills
<b>School Management</b>	Lack of school support Assigning managerial responsibilities to teachers Financial difficulties
<b>Time and Effort</b>	Teaching many lessons per week and several levels Time constraints Need tremendous effort put into it Increased workload Home obligations
<b>External</b>	Resistance to change Lack of awareness of ICT advantages Some teachers are a bad influence on others To some students do not have ICT access at home

**Table 5.9 Hindrances to ICT use**

Teachers were very clear about the factors they considered hindered their ICT usage. They provided detailed explanations of these hindrances and their implications for their ICT use. Issues related to the availability of ICT in school and maintenance and technical support were mentioned as hindrances by all teachers who found it difficult to work with groups of two or more students on one computer, none or limited Internet access and, most importantly, the lack of professionally developed educational software. Teacher H-4 stressed the importance of supplying educational software to schools' resources rooms *"I think that the major obstacle or roadblock in the way of electronic education is not the lack of equipment or teacher training, though they are important, it is the lack of educational software because the use of PowerPoint for presenting lessons is no different than using the blackboard. The real difference is a software that presents the information or exercise in a way that is not obtainable without using computers and here we can say that we have true electronic education. Professionally designed educational software will overcome the problems of teacher training since it will be ready made software and teachers will only need to know how to use it."* This hindrance was linked to teacher training, which was mentioned by five teachers as the most influential hindrance to their ICT use. Teacher T-6

viewed student teachers' training as focused either on ICT as a subject or on pedagogic issues and not both. He believed their integrating to be the most important part of teacher training in ICT use in teaching. Most teachers wanted to learn more about how to integrate ICT in teaching, while some wanted to master class management skills because the use of ICT requires special class control and dynamics.

Time was another major obstacle to ICT use cited by teachers. Eleven teachers mentioned time constraints as the most important hindrance, relating them to in and out of school factors, such as assigning managerial responsibilities to teachers which reduced the time they could spend on their own work and home and family obligations which, in turn, affected the time spent on lesson preparation. Head teachers in particular pointed out a number of hindrances that teachers omitted: teachers' resistance to change and financial difficulties facing schools were the ones most frequently mentioned by them. With regard to financial difficulties it was found that schools financed their ICT implementation plans in different ways: through finance from the MoE, finance grants and donations from commercial bodies, and school employees' and students' contributions and donations towards the cost of the ICT hardware and software.

### **Teachers' Feelings towards ICT Usage in Teaching**

*How does ICT use make you feel?*

<b>Positive Feelings</b> (23 comments)	Excited – Happy – Enthusiastic – Love it – interested – relaxed – positive experience- fruitful experience – Successful – Forget myself – feel great – very proud – best time ever
<b>Negative Feelings</b> (7 comments)	Scared – Do not like it – Nervous – fear of technical problems – exhausting – Have to use it

***Table 5.10 Teachers' feeling towards ICT***

As can be seen from the table above, more positive comments were reported than negative ones. However, it is important to mention that when examining all the interview transcripts, it was found that negative feelings were more associated with teachers who were less confident about their ICT skills, whereas more confident teachers reported positive feelings. Teachers who reported negative feelings tried to explain the reasons for their feelings and related them to specific situations, such as teacher ICT-1 who said, “*I feel*

*scared when using computers in my teaching. I have a constant fear of technical failure and, as you know, technical support is non-existent, which makes the situation even worse.”*

## 5.2.2 ICT Education Policy

### School Policy

*What is your school ICT policy?*

<b>Basic Implementation</b>	Exam questions should be written using word processors Teachers should use the learning resources room at least once in a term Students' Internet use should be supervised by teachers Students are allowed to bring their laptops Appointing a coordinator
<b>Intermediate</b>	Integration of ICT in all subjects All teachers should have a minimum level of ICT skills Lesson plans in electronic format New lab with wiring, networking, and Internet connection Changing rules of behaviour
<b>Advanced</b>	Using ICT is a must All homework, worksheets, exercises uploaded to school website All lessons delivered electronically and archived in school library

**Table 5.11 School ICT policy**

Schools' ICT policy could be categorised into three successive implementation levels. The first included actions related to basic ICT implementation in the school not requiring a great deal of change in teaching and learning activities. The intermediate level of ICT implementation involves the introduction of new and organised activities that promote the incorporation of ICT in teaching. The advanced level of implementation takes a further step along the road to full ICT implementation. School ICT policy was used as a tool to distinguish between non practising, ICT coordinated, and good practising schools, however, it should be noted that classroom teachers and head teachers interviewed were not able to list, point out, or describe their school ICT policy in clear precise sentences. In fact, on some occasions, the researcher had to deduce the policy from their responses. They were also not able to place their school in any of the categories correctly, they either overestimated their ICT practice or underestimate it.

### ***School Support***

*How is the whole school involved in and supportive of using ICT in teaching?*

<b>Training</b>	Experience exchange In-service training Helping teachers attend training courses during school time Evening free training courses for teachers
<b>Facilities and Equipment</b>	Provision of equipment, although it is expensive Providing teachers with PCs in staff rooms Wiring for school network Buying software In school wireless network to ease file exchange and use of printing facilities
<b>Maintenance &amp; Technical Support</b>	ICT teacher provides technical support Availability of technical support by phone In school maintenance department with technical support responsibilities
<b>Innovative Support</b>	Offers teachers laptops through monthly instalments A particularly competent teacher filmed during lessons and film distributed among other teachers on DVD to benefit from their colleague's expertise.

***Table 5.12 School support of ICT use***

School support of ICT implementation comes as an integral part of its ICT policy and it plays a great role in placing the school in any of the above mentioned implementation level categories. In addition, in the execution phase of a school's ICT policy, the mechanism of implementation should be taken into consideration and how all the parties involved are to interact with the new policies. This is possible as one head teacher H-4 explained by good school management, *"School policies and especially new ones related to ICT should be backed up by good management, support, and clear vision."*



## Ministry Policy

### *Known Policy*

*How do you interpret the Ministry of Education's ICT policy?*

<b>National Projects</b>	Learning resources rooms and effective use of them Offering teachers computers through monthly instalments Electronic curriculum Electronic school Computer for each student Watani project
<b>School Management</b>	Students' assessment Marks Ultimatums
<b>Policy Aims</b>	Improve education by using ICT Spreading the use of ICT in schools Take schools into the technology age Integrating ICT skills with other subjects

*Table 5.13 Known MoE policy*

Participants' knowledge of MoE ICT policy was limited among both classroom teachers and head teachers. Only one teacher mentioned a well known and important national ICT project: the Watani project. The others assumed and inferred MoE ICT policy from its actions. Teacher T-6 stated, *"I do not know anything about the MoE policy but I think it aims to spread the use of ICT in schools and the training courses offered to teachers to undertake this are evidence of their desire to raise ICT awareness among teachers."* Another teacher, T-1, made a similar logical assumption, *"I do not know exactly what the MoE policy is. All what I know about it, I heard in the news. There will be electronic school books on a CD and this, as far as am concerned, implies that the MoE will provide schools with computers, a data show in each classroom, as well as train teachers so they can use these CDs effectively."* She also said that the MoE supervisors' remarks and suggestions all flow in the direction of ICT usage in teaching and as supervisor is a representative of the Ministry his/her comments should reflect its policies, therefore, the remarks and suggestions made all indirectly reflect the MoE policy. Another teacher, H-2, expressed a similar view when she said, *"The new secondary school curriculum hugely depends on the use of ICT, it is impossible to deliver it without ICT. Where did this curriculum come from? From the Ministry, so it should reflect its policies, even though they have not reached us clearly."*

From a close examination of teachers' responses, it can be seen that they expressed a great lack of awareness of MoE ICT policy, which they were not comfortable about. This quote from teacher ICT-1 illustrates how uncomfortable teachers were about this unawareness, *"All what we know about MoE policies, and they try to make sure we read about them, are the ones related to students' assessment, marks, and ultimatums, whereas their projects and plans are only mentioned at important meetings with senior employees. As for us, the teachers, their policies executors, the people on the ground, they do not care to let us know what they are. I know about them generally from newspapers like any other member of the public"*. Another teacher, T-3, gave another example of teachers' lack of awareness of important policies directly influencing them, *"I have just learnt that 4 marks out of 44 of teacher's assessment are dedicated to teachers' use of ICT in their teaching. This lack of awareness of the policy is a fault of the Ministry. They should raise awareness among teachers to ensure that their policies are implemented correctly and achieve their aims. It is not only ICT policies that we do not know about, all Ministry policies are not clearly explained to teachers. "*

***Indirect indicators of the Ministry's ICT policy in education***

<b>MoE Actions</b>	<ul style="list-style-type: none"> <li>• The new curriculum requires students to produce PowerPoint presentation, use Excel and Publisher . It is impossible to teach the new curriculum without ICT therefore knowledge about ICT is required and this I assume reflects the Ministry's policy</li> <li>• School use of ICT is influenced by Ministry policy because if the ministry was not convinced of its benefits they would not provide us with these new machines</li> <li>• The Ministry training courses offered to teachers show its desire to raise technological awareness among teachers</li> <li>• Supervisors' comments all directed towards ICT use, supervisors are from the ministry and should reflect its policy</li> <li>• The Ministry conveys its policies via the text book</li> <li>• The Ministry of Education is part of e-government so they are preparing students to become better citizens in the future by teaching them ICT in schools</li> </ul>
<b>Ratiocination Inference</b>	<ul style="list-style-type: none"> <li>• There are still many schools that do not apply ICT in teaching, if it is Ministry policy that influenced our school then there schools should be influenced too</li> <li>• Increasing numbers of schools are using ICT. It should be the Ministry's policy that guides and directs them</li> </ul>

***Table 5.14 Indirect indicators of MoE policies***

It can be seen from the above that as a result of teachers' need for reliable information on MoE policy they used a combination of logical assumption and evidential reasoning of MoE actions to deduce its policies, especially those ones related to ICT. The above table lists those quotes where such techniques were used.

***Ministry policy information source***

<b>Source</b>	Word of mouth (4 comments)
	Newspapers (3 comments)
	Text books (2 comments)
	Internet (1 comment)
	TV news (1 comment)
	Research (1 comment)

***Table 5.15 MoE policy information sources***

As can be seen from the above table, 4 teachers obtained their information about MoE ICT policy through word of mouth, 3 teachers read this information in newspapers. These were the most frequently mentioned information sources. Two teachers reported absence of knowledge related to this issue and were not able to specify their information source as they said they had no information. Teachers did not mention any source of information related directly to the MoE, such as its official website, brochures, seminars, lectures and other methods of reaching teachers to enlighten them about the MoE's policies.

***Expressions used in interpreting policy***

<b>Assertive</b> (10 comments)	I heard
	I read once
	I know
<b>Unaware</b> (15 comments)	I do not know
	I am not aware
	I did not read about it
	I heard no news
	No precise information
	I did not see or hear anything
<b>Indecisive</b> (13 comments)	I am not sure
	I do not know exactly
	I assume
	The hearsay is
	I understand it is
	In my view
	I have some information I am not sure about

***Table 5.16 Expressions used in interpreting policy***

Teachers used different expressions for interpreting and expressing their understanding of MoE policy. Only ten comments were assertive comments, whereas 28 comments were unaware or undecided. This supports teachers' complaints of being unaware of the policy.

### ***Ministry Policy V School Policy***

*How do you feel about ICT educational policy?*

<b>Influence</b>	Use influenced by school policy Some teachers' use of ICT is encouraged by the Ministry's policy
<b>Scope</b>	Ministry policy is more concerned with managerial aspects of schools School policy is ahead of Ministry policy therefore not important for our school
<b>Awareness</b>	Teachers and head teachers do not know the Ministry of education's ICT policy All Ministry policies lack explanation and teachers have to apply them without fully understanding them
<b>Feelings</b>	School policy resulted positive perception Ministry policies are all theories not applied in reality with no tangible results

***Table 5.17 MoE policy vs school policy***

The comparison between MoE and school ICT policy was undertaken by categorising responses into four categories: influence, scope, awareness, and feelings. In all categories, teachers favoured their school's policies over those of the MoE. On one occasion, a teacher ICT-2 mentioned that her ICT use was encouraged by the MoE's policy, while another teacher, T-1, expressed a different viewpoint, *"The MoE's and schools' ICT policy should be integrated, for, as they say, one hand cannot clap alone. We see some traditional schools with ICT facilities such as smart boards. Why did they think of having them? They've undoubtedly been influenced or supported by the MoE, otherwise they would still be standing still and not moved on."*

### 5.2.3 Future of Education

#### Probable Future

*Based on the current situation, how do you see ICT being used in secondary schools in the future?*

<b>ICT Related</b>	Facilities & Equipment Smart board Wireless Internet connection Better hardware DSL Internet connection Internet access No house without Internet access School internal network Computer for each student Activated school website All hardware will be available at schools Technology spread Teaching Learning Process Homework by Email Assessing things that have not been assessed before (entering school website and participating) Virtual classrooms No school bag Distance learning Paperless education ICT will dominate our lives Electronic assessment
<b>Education Related</b>	Curriculum change Assessment via class discussion and projects Provide students with a curriculum plan and they will prepare and search for information No more traditional teaching Fulfilment of educational goals Not optimistic the gap will decrease between us and developed nations

**Table 5.18 Probable future**

Teachers' expectations of the probable future were focused on two issues: ICT related and educational issues. As regards ICT related issues, teachers had humble expectations that all that had been implemented and was being practised in developed countries and a limited number of good practising schools in Saudi Arabia would some day be practised in all schools. They did not see a major change in the future as teacher, T-6, indicated, *"I have a negative view since I do not expect a dramatic change in the future. I think things will remain the same, maybe a little better equipment, but not something that will have a great*

*impact on education.” Teacher T-3 agreed with her colleague and further added, “If things remain the same, honestly speaking, our situation will be very bad since the rest of the world will be ahead of us and students will be totally disconnected from things delivered to them at school because they will not be related to their lives.” Due to concerns about their country’s position among other developed countries in relation to education, teacher ICT-1 commented, “Instead of concentrating on developing education via using ICT in teaching we should concentrate on developing other teaching skills for teachers. I think if we run multiple intelligence, creativity, social thinking, class management, and adolescence psychology courses for teachers this will have a huge positive impact on their teaching and will be far better than concentrating on ICT as a solution to our educational problems.”*

### ***Changing Teacher Role***

*How is this change going to affect the teacher’s role?*

<b>Teaching Role</b>	Change to facilitator and advisor Share directing the learning experience with students Change effort from classroom to planning and searching for suitable electronic material Teacher will not have a text book If the teacher will not change to fit his/her new role in the future s/he will be left out
<b>Pedagogic Role</b>	Teaching is not the only role the teacher has, s/he has a pedagogic role as well Change in relationship with students
<b>No Change</b>	Should not change Will not change since students need someone to teach and guide them where to find information

***Table 5.19 Teachers’ changing role***

Almost all teachers saw a change in their role as teachers in the future from being the main source of information in the teaching and learning process which gives them control over all aspects of this process to becoming facilitators and advisors as a result of the easy access to specialist information from different sources. Only two of the fourteen teachers who were interviewed thought that a change should not come about because teachers should be in control all the time change could be considered a sign of weakness in the teacher’s role, or could lead to a change in other roles the teacher plays in the school environment, such as their pedagogic and behavioural roles, and any change in these roles will result in social problems. Teacher T-1 contended that whatever may change in the teacher’s role, the

teacher will always be part of the teaching and learning process: *“The teacher has always been the core of the educational process and the day when a teacher is no longer needed will not come, it is just impossible. If there was not a teacher this would mean there was no school because self education is not like learning with a teacher because a student still needs someone to teach him/her how and where to find information.”*

### Preferable future

*What would you like to see in your classroom in the next ten years?*

<b>Facilities and Equipments</b>	Virtual schools Link all schools with a network Experience exchange among teachers at a greater level via bulletin boards and teachers' websites Easy access to ICT Availability of educational software in Arabic
<b>MoE ICT Policy</b>	School head teachers and teachers should be obligated to integrate ICT in their teaching not leave it to their choice (enforce policy) Include any changes in Ministry of Education policies in teachers' assessment to force them to apply those policies Government support for development of special educational software Policy change is needed
<b>Teacher Training</b>	Teacher training programmes should merge teaching skills with ICT use and not teach pedagogic issues separately from ICT topics Invest more in teacher development as nothing will improve if the teacher is not adequately trained and equipped
<b>Students</b>	Need more flexibility for the benefit of students Students will participate in creating the learning experience and not be passive learners Students will seek information and come to school to pursue knowledge

**Table 5.20 Preferable future**

Teachers' vision of their preferred future cannot be characterised in any way as a fantasy, since everything they wished for exists these days, but they wished they would become available in their schools. I personally feel they were not able to free themselves, and especially their imagination, to see a rosier situation in the future, so they kept themselves chained to the current situation and their knowledge about it. However, two comments attracted my attention as I thought they were ground breaking in terms of viewing the future by tackling the problems of the present. Teacher ICT-1 said, *“My only wish is to eradicate bureaucracy and replace it with self governance for schools,”* and both teachers

H-3 and H-4 wished that students' attitude towards education would change positively so that they came to school because they wanted to learn and pursue knowledge instead of feeling they were being forced to do so. Technology plays an important role here as it greatly assists self education.

### **The Link between Past, Present, and Future**

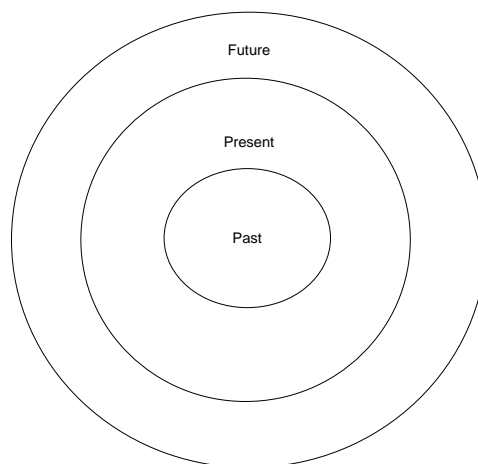
*How would you perceive the relationship between the past, present, and future?*

<b>Chronological</b> (2 diagrams)	A linear relationship between past, present, and future
<b>Cyclical</b> (1 diagram)	A cyclical relationship between past, present and future. This implies the reoccurrence of events when the first cycle ends and a new cycle starts.
<b>Cumulative</b> (11 diagrams)	A relationship between past, present and future as things increase or decrease gradually as more events happen

**Table 5.21** *Link between past, present, and future*

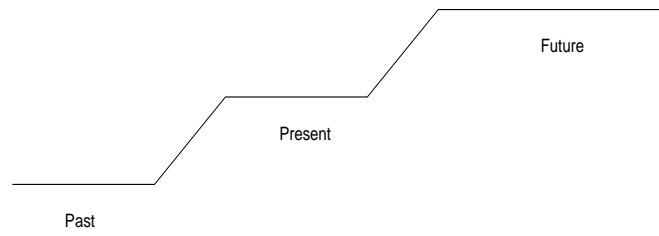
Teachers expressed their view of the link between past, present and future by means of diagrams which could be categorised as chronological, cyclical, and cumulative. The table above 5.21 explains the meaning of each category. The majority of teachers viewed the relationship between past, present and future as a cumulative relationship. However, the way they presented this differed from one participant to another: one drew it as a flight of stairs (Figure 5.2), another illustrated it as an inverted triangle (Figure 5.4), while another showed it as a soaring arrow. An example of each category is presented below.

**Figure 5.1** *Cumulative Relationship*

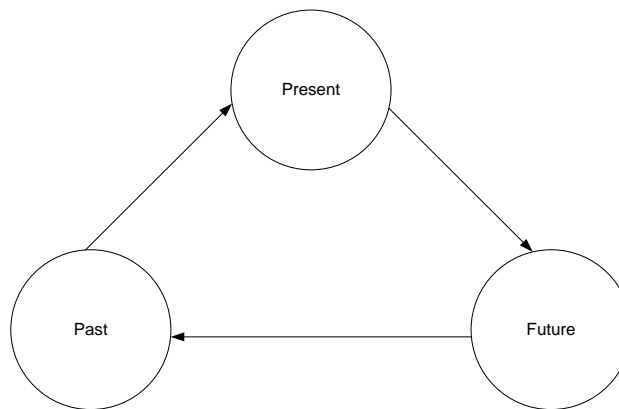




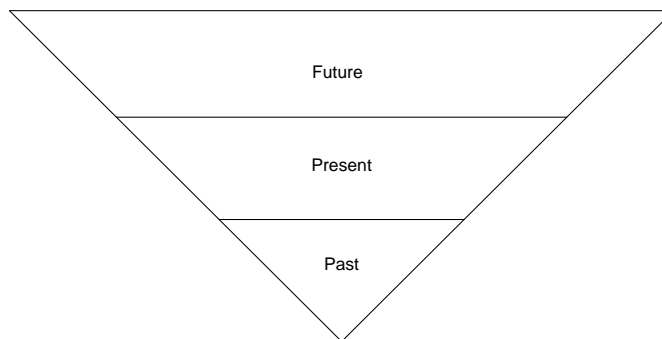
***Figure 5.2 Chronological Relationship***



***Figure 5.3 Cyclical Relationship***



***Figure 5.4 Cumulative Relationship***



### **5.3 Questionnaire Findings**

The questionnaire designed for this study aimed to provide a collective view of the issues discussed in the interviews. Three hundred questionnaires were distributed in 10 secondary schools, and 266 questionnaires were returned, processed and analysed.

#### ***Response Rate***

The response rate is a very important factor when conducting an investigation. Studies in Saudi Arabia in the past have faced problems regarding the non-return of questionnaires. The researcher in this study therefore decided to distribute the questionnaires in schools and assigned a member of staff to collect them. The response rate was therefore high, since questionnaires were distributed and collected from someone who knew the teachers and chose a suitable time to collect completed ones. Cohen and Manion ( 2000) state that the response rate for postal questionnaires should be at least 40%, yet the common rate stands between 10% and 50%. However, the response rate for the questionnaire in this study was 88.6%, consistent with group administered questionnaires (Babbie 2001b;Punch 1998).

#### **Analysis Strategy**

As noted previously, the questionnaire was based and designed according to interview results. The questions were grouped into sections representing the main themes of the research: teachers' use of ICT, barriers and features supporting ICT use, feelings towards ICT, policy and ICT, and the future of education. In addition to closed questions the questionnaire contained ten open questions. The researcher used the Statistical Package for Social Science SPSS 13 software to perform all percentages and frequencies required for analysing closed questions, which started with coding the variables, then deciding procedures to be taken for missing or contradicting values, data cleaning, and data entry. Descriptive analysis was used to describe and reveal the sample's characteristics and to answer specific research questions. Descriptive analysis included frequencies and percentages for categorical variables. The analysis was simple and straightforward. Some numbers were aggregated for ease of reporting, to distinguish them they will not have the number of responses beside them.

The ten open questions were approached using a procedure similar to that used for analysing interviews. The analysis went through two stages. First, I wrote down on another document the responses to each question. Second, I went through the questions one by one and examined the responses closely and merged similar responses together, while grouping them and eliciting general descriptors for each group. In some questions such as 27 and 34, the responses in each group used different wording but conveyed the same general idea, therefore, all responses were merged in one sentence while keeping the count. It is important to mention here that open questions did not have a high response rate. I personally attribute this to the fact that some teachers said the questionnaire's closed questions asked them about everything and they did not have any extra information to add. In addition, people usually prefer ticking boxes rather than writing answers (Babbie 2001b; Nachmias & Nachmias 1996). In the following sections, only the most common responses in open questions are listed.

**Participants' characteristics (socio demographic variables)**

1. Gender: Male 47.7%		Female 52.3%		
2. Age range (years):				
21.1%	49.2%	21.8%	7.5%	0.4%
20-29	30-39	40-49	50-59	60+
3. Number of years in teaching (at start of term):				
7.1%	3.0%	7.9%	27.1%	54.9%
First Year	1	2-4	5-9	10+
4. What is your main teaching subject?				
Islamic Studies 12.4%		Arabic 14.3%		English 16.5%
Maths 11.3%		Science 20.3%		ICT 5.6%
Geography 4.5%		History 4.5%		Humanities 5.6%
Art 1.1%		PE 1.9%		Cooking 0.8%
Business Administration 0.4%				
5. What is your highest qualification?				
High School Diploma 3.0%		University Degree 91.0%		
Master Degree 5.3%		PhD 0.4%		

*Table 5.22 Participants' characteristics*

The data in the above Table shows that nearly half of participating teachers fell into the 30-39 age group, and that more than half of teachers had more than ten years teaching experience. The majority of teachers were university graduates and their specialties covered all main subjects.

### 5.3.1 Teachers' Usage of ICT in teaching

6. *In your view, why should teachers if at all use ICT in their teaching?*

<b>Education</b>	<ul style="list-style-type: none"> <li>• Its use is very important to improve education and raise standards (20 comments)</li> <li>• To use new teaching methods and shift from traditional methods which hve a positive effect on students (19 comments)</li> <li>• Its use creates enjoyment and attraction during lessons (8 comments)</li> </ul>
<b>Teacher</b>	<ul style="list-style-type: none"> <li>• To save time and effort (16 comments)</li> <li>• To assist the teacher in the teaching and learning process (12 comments)</li> <li>• To further the teacher's knowledge and develop his/her teaching techniques and free him/her from the restraints of the current education system (15 comments)</li> </ul>
<b>Student</b>	<ul style="list-style-type: none"> <li>• It makes the lesson enjoyable and attractive because it attracts students' attention and encourages them (19 comments)</li> <li>• Permanently impresses information because it can be embodied and related to daily life (18 comments)</li> <li>• Changes routine to keep boredom at bay (13 comments)</li> <li>• It assists in developing students' intellectual capacities and improves their skills (11 comments)</li> </ul>
<b>Information</b>	<ul style="list-style-type: none"> <li>• Facilitates the delivery of information in a clear, attractive, and enjoyable way (87 comments)</li> <li>• To obtain up-to-date information in a simple, quick, accurate way (13 comments)</li> </ul>
<b>Communication</b>	<ul style="list-style-type: none"> <li>• Easy and quick communication between teachers and students (4 comments)</li> <li>• Easier communicating with parents (1 comment)</li> </ul>
<b>ICT benefits</b>	<ul style="list-style-type: none"> <li>• Using ICT in education is beneficiary for both the teacher and the student (10 comments)</li> <li>• Using ICT has a positive effect on students (2 comments)</li> </ul>
<b>External Influence</b>	<ul style="list-style-type: none"> <li>• To accompany the era of technology and keep pace with developed countries (50 comments)</li> <li>• To accompany international advancements in the field of education (5 comments)</li> <li>• It is the era of technology, and education should keep abreast of advancements and relate students to them (5 comments)</li> </ul>

*Table 5.23 Reason for ICT use*

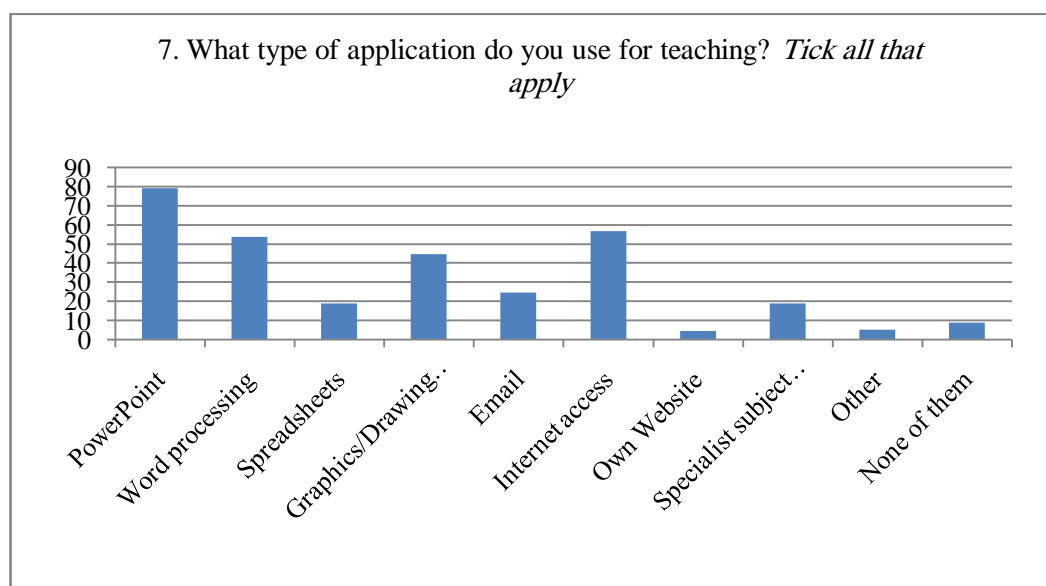
Teachers reported that ICT should be used because of its benefits to students, teachers, and the teaching and learning process. Other rationales were mentioned in terms of information,

communication, and ICT benefits, and external influence. The most frequently mentioned reason was that *the use of ICT facilitates the delivery of information in a clear, attractive, and enjoyable way*. Teachers emphasised that the use of ICT enabled students to be enriched with up-to-date attractive and exciting information and present it in a modern way. From the comments, it can be seen that the ease of access to a wide range of information in different forms and in a quick, simple, and accurate way was the most appealing factor in teachers' ICT use.

Given their growing responsibilities of teaching students and preparing them in all possible means for the outside world, teachers felt ICT should be used in teaching because they believed the technological advancements should be introduced into education and related to students so that they can function properly and participate actively when they finally join the economic and social cycles in their country. In addition, teachers thought Saudi Arabia should keep up-to-date with advancements in technology in order to be able to compete with developed countries and benefit from their successful experiences of using ICT in education.

Teachers felt ICT could be used to deal with some issues encountered daily. For example issues such as students losing interest during lessons, boredom, difficulty in explaining scientific concepts, and ineffective traditional teaching methods could be successfully resolved by using ICT. Its use attracted students' attention, excited them, made easier the embodiment of scientific concepts and renewed their teaching practice. Reinforcement of information subsequently resulted in better student performance.

**Figure 5.5 Applications used in teaching**



8. I use ICT in my teaching as: *Tick all that apply*

**68.4%** A Supplement to the curriculum, i.e. video, pictures, sound, etc

**52.6%** A reinforcement of the curriculum i.e. inference theories, practical application and to convey information in a different way

**28.6%** Use the Internet as a method of continuous teacher-student and student-student communication

9. In this question we want to find about your use of ICT for teaching, for lesson preparation, for other duties relating to teaching

For these questions use the guidelines: **Regularly** = most days (3 or 4 times a week)

**Quite often** = once or twice a week.

	Regularly	Quite often	Sometimes	Not very often	Never/ hardly ever
How often, if at all, do you use ICT for preparing lessons?	43.6	18.4	14.3	15.4	8.3
How often, if at all, do you access the Internet for retrieving information, (e.g. research, information, ideas etc.)?	27.1	32.7	19.5	9.8	10.9
How often, if at all, do you use ICT for administration purposes (e.g. record keeping, reports, etc.)?	30.5	12.8	21.8	15.4	19.5
How often, if at all, do you use Email for professional purposes?	7.9	18.0	20.7	20.3	33.1
How often, if at all, do you use ICT when you are teaching classes?	27.8	21.1	18.8	13.5	18.8
How often, if at all, do your students use ICT in lessons you are teaching?	12.0	10.9	26.7	22.9	27.4

**Table 5.24Type of ICT use by teachers**

From the above figure (5.5) it can be seen that PowerPoint was the most used ICT application, then the Internet, followed by Word Processing which was reported to be used by over half of participants. The least mentioned application was “owning a website”, with only 12 teachers owning their own website that they used for educational purposes. Regarding the way teachers used those applications in their teaching practice, 68.4% used ICT as a supplement to the curriculum to add extra information either by using video, pictures, or sound, etc., but the actual delivery of the lesson was not affected by the use of ICT, its use was an add on. More than half of teachers (52.6%) reported using ICT as a reinforcement of the curriculum, i.e. inference theories, practical application and to convey information in a different way. ICT use for this purpose is indispensable and its absence will hugely affect the delivery of lessons. However, the large percentage of teachers claiming to use ICT in this way raised some serious questions about the extent of this practice, especially as the question offered respondents an opportunity to tick all applications listed. In my view, the high percentage of responses did not reflect the true day-to-day practice of teachers.

Teachers were asked to indicate the extent of their ICT use which served the needs of their teaching activities. From the above table (5.24), it can be seen that 62% of teachers used ICT at least once a week or more for preparing lessons. The percentage dropped to 48.9% for ICT use in class. Half of teachers (50.3%) reported that students’ hand-on time was limited to once in most weeks or less. A careful examination of question 9 showed that most teachers’ ICT use was out of class. In addition to the previously mentioned high percentage of teachers using ICT for lesson preparation, they also used the Internet (59.8%) and ICT for administration purposes (43.3%) at least once a week or more. Generally, the responses showed a spread of ICT use among teachers in and out of class.

10. Please list the 3 main ways you use ICT in relation to your role as a teacher.
a. Internet Search ( <i>157 comments</i> )
b. Work Sheets and Exam Papers ( <i>155 comments</i> )
c. PowerPoint Presentations ( <i>70 comments</i> )
d. Writing Lesson Plans and Reports ( <i>66 comments</i> )

**Table 5.25 Main ICT uses**

Performing an Internet search was the most frequently mentioned way of using ICT, followed by writing work sheets and exam papers, then designing PowerPoint presentations. This question, similar to question 9, provided valuable information about the nature of teachers' ICT use, and apparently the majority of their use and its focus was on out of class activities, in other words, related to preparing lessons, searching for information, writing documents as work sheets and handouts, and writing lesson plans.

11. Do you have good access to a computer at home?	Yes <b>97.4%</b>	No <b>2.6%</b>
12. Do you have good access to a computer at school?	Yes <b>63.5%</b>	No <b>36.5%</b>
13. How useful is it (or would it be) to have a personal computer at school?	<b>86.8%</b> Very useful <b>13.2%</b> Somewhat useful <b>0%</b> Not at all useful	
14. How would you describe your computer skills? <i>Tick one</i>	<b>3.0%</b> Non-existent <b>16.2%</b> Beginner level <b>37.2%</b> Intermediate level <b>32.7%</b> Advanced level <b>10.5%</b> Expert	
15. How did you gain skills in using computers? <i>Tick all applicable</i>	<b>66.9%</b> By trial and error <b>43.2%</b> Assisted by a colleague, family member, or friend <b>28.9%</b> Attended private training course <b>27.1%</b> Attended in school training course <b>16.5%</b> Attended Ministry's training courses <b>6.4%</b> Other	
16. Why are you using ICT in your teaching?	<b>74.1%</b> Change of class routine to maintain interest <b>66.9%</b> Method for improving and developing teaching <b>65.4%</b> Effective method to convey information <b>57.1%</b> Keeping abreast of advancement in technology <b>31.6%</b> It is the era of technology use; the illiterate one is the one who does not know how to use ICT <b>27.8%</b> Professional way of teaching <b>22.9%</b> Its use is a symbol of modernisation <b>22.2%</b> Make use of available equipment <b>18%</b> To catch up with developed nations <b>4.5%</b> Pressures to change from students, teachers, and parents <b>1.9%</b> Other	

**Table 5.26 Teachers' skills, access, and reason for ICT use**



The results presented in table (5.26) show that almost all teachers (97.4%) had good access to ICT at home. The percentage decreased to 63.5% regarding school ICT access which can be considered an indicator of good access to ICT in schools and spread of the availability of ICT in homes. However, it is important to bear in mind that the availability of ICT at school and home does not indicate good usage of it. Nevertheless, none of the participants regarded having a personal computer at school as “not at all useful”, indeed, all of them thought it useful in some way.

Using ICT more frequently requires computer skills. When teachers were asked to rate their computer skills, only 10.5% of them regarded themselves as experts, and 37.2% thought they had an intermediate level of skills. Interestingly, only eight of two hundred and sixty-six participants considered their skill level to be non-existent. When asked where they had gained skills in using computers, two-thirds of teachers, 66.9%, reported gaining their skills by trial and error. The next method of gaining ICT skills mentioned by 43.2% was being assisted by a colleague, family member or friend, 28.9% had attended a private training course, while only 16.5% had attended MoE training courses, which points to the inconsiderable role the MoE plays in educating and training teachers.

From table 5.26 it can be seen that teachers used ICT in their teaching for many different reasons. The most frequently mentioned one favoured by 74.1% of teachers was to change class routine to maintain interest, 66.9% used ICT as a method for improving and developing teaching, and 65.4% used it because it is an effective method to convey information. The reason least cited, by only 4.5%, was “pressure to change from students, teachers, and parents”.

## Supporting Factors, Incentives and Motivators of ICT Usage in Teaching

17. In this section we want to find out anything which you feel encourages you, supports you, is an incentive for you in making good use of ICT for teaching and other professional duties.

<i>All these statements are for incentives and supporting factors</i>	<b>Agree combined</b>	<b>Strongly Agree</b>	<b>Agree</b>	<b>Neutral</b>	<b>Disagree</b>	<b>Strongly Disagree</b>
Believe in ICT benefits	<b>95.1</b>	51.1	44.0	4.1	0.0	0.8
My desire to develop my skills	<b>94.8</b>	51.9	42.9	4.5	0.4	0.4
Tangible benefits of ICT use in teaching	<b>92.9</b>	42.9	50.0	6.4	0.4	0.4
Students' acceptance and support	<b>92.1</b>	37.6	54.5	4.9	2.6	0.4
My own success creates an incentive for continuing using ICT	<b>89.1</b>	47.4	41.7	9.4	1.1	0.4
First hand experience of using ICT convinced me of its importance	<b>88.7</b>	38.7	50.0	8.6	2.3	0.4
Whole school view of the importance of ICT, guidelines and policy	<b>85.7</b>	41.0	44.7	11.3	2.3	0.8
Encouraging school environment i.e. good access to computers, training, technical support, management support	<b>85.7</b>	41.7	44.0	6.4	1.9	6.0
Support, encouragement, and motivation of senior management	<b>84.2</b>	41.0	43.2	10.9	4.1	0.8
It is good for my CV	<b>83.1</b>	40.2	42.9	12.0	4.1	0.8
Students' advanced competence with ICT	<b>82.7</b>	32.7	50.0	8.6	7.5	0.8
I like computers	<b>80.9</b>	30.1	50.8	14.7	2.6	1.9
Using ICT is an indicator of teachers' proficiency	<b>69.6</b>	25.2	44.4	22.2	6.4	1.9
Teacher annual assessment	<b>69.1</b>	28.9	40.2	17.3	9.8	3.8
Training	<b>68.4</b>	24.4	44.0	17.3	11.3	2.6
The new curriculum requires ICT use in teaching	<b>68.1</b>	25.6	42.5	22.6	8.3	1.1
Competition among teachers	<b>65.8</b>	22.9	42.9	21.8	9.8	2.6
Leaves a good impression on students and parents	<b>65</b>	28.2	36.8	24.4	7.5	3.0
Letters of gratitude and appreciation from head teacher	<b>63.1</b>	27.4	35.7	25.2	9.4	2.3
Do not want to be ignorant	<b>62.7</b>	27.4	35.3	22.2	10.2	4.9
Availability of professionally developed software	<b>61.2</b>	18.0	43.2	22.9	11.7	4.1
Another enthusiastic teacher	<b>57.9</b>	24.8	33.1	28.6	11.3	2.3
ICT course certificate is a condition for promotion	<b>41.7</b>	15.0	26.7	28.6	22.2	7.5
To keep my job	<b>31.2</b>	8.6	22.6	30.5	23.7	14.7

*Table 5.27 Supporting Factors, Incentives and Motivators of ICT Usage in Teaching*

Teachers were presented with twenty-four statements relating to the supporting factors, incentives, and motivators of the use of ICT in education. They were asked to indicate the extent to which they agreed or disagreed with each statement using a 5-point scale. The percentage of teachers selecting each of the response options was calculated for each

statement, and the results, presented in the above table, are arranged in ranked order on the basis of the combined *strongly agree/ agree* percentages.

Although teachers considered all items mentioned in the above table as incentives for ICT use, items related to personal beliefs, desires, and experiences elicited most agreement. As can be seen, four of the statements attracted *strongly agree/agree* responses from 92% or more of teacher participants. Almost all teachers (95.1%) agreed that their belief in ICT benefits was an incentive for their ICT use. The other three statements that met with high agreement levels were *My desire to develop my skills* (94.8%), *tangible benefits of ICT use in teaching* (92.9%), and *students' acceptance and support* (92.1%). Only two of the remaining statements attracted an agreement level less than 57%. The statements with the lowest agreement levels were *ICT course certificate is a condition for promotion* (41.7%) and *to keep my job* (31.2%).

18. *In your own words list the 3 things which have had the most positive influence on your use of ICT in your teaching.*

<b>External</b>	Encouraging school policy (30 comments)
	The desire to develop and convey age of technology (29 comments)
	The spread of ICT use (7 comments)
<b>Internal</b>	My desire to improve my abilities and gain new skills (29 comments)
	Awareness of the benefits of ICT use and positive results (28 comments)
	Students' acceptance, enthusiasm, and enjoyment about ICT use (24 comments)
<b>Surrounding Environment</b>	Spread of ICT use in teaching among my colleagues (6 comments)
	Spread of ICT use at students' homes which has raised their technical skills (2 comments)
	I attended lessons delivered using ICT and students interacted very well (2 comments)

**Table 5.28 Positive influence on ICT use**

In two different questions, teachers were asked to indicate those things that had had the most positive influence on their ICT use as well as to list the three main reasons for this use. Some participating teachers confused the terms "positive influence" and "reason", which had an effect on the analysis process. Similar to the action taken to resolve the interchangeable use of the terms "incentive" and "motivator" previously described in section (5.1), a decision was made to assign misplaced answers to the category they

belonged to according to the actual meaning of "positive influence" and "reason" in the questionnaire. According to the questionnaire design, "positive influence" meant someone or something having the power or the ability to positively affect someone's beliefs or actions, whereas "reason" meant a cause, explanation, or justification. In addition, there was some confusion between "positive influence" and "incentives". This was resolved using the same technique based on the definition previously explained in the Analysis Strategy section 5.1.

Teachers' responses indicated that the most positive influence was either internal, external, or from the surrounding environment. Internal influence was mentioned the most frequently as responses emphasised teachers' desire to improve and gain new skills as well as increase their awareness of the importance and benefits of ICT use in teaching. Teachers also wanted to use new teaching methods to attract students' attention and keep boredom at bay. External influences were mentioned as well, though were somewhat less emphasised. However, the most frequently mentioned single item was "encouraging school policy" which, in my view, indicates the integrative role that the external and internal influences played in promoting a better ICT use by teachers. One teacher stated that his ICT use was positively influenced by the Islamic religion because it respects knowledge and education and always encourages the use of new things.

19. What are the main three reasons why you use ICT in your teaching?

<b>Teacher Personal Benefits</b>	Saves time and effort (8 comments) Search for new and important information for lesson explanation (8 comments) ICT is a teaching tool to explain scientific concepts in new and useful ways (5 comments)
<b>Lesson</b>	Facilitates teaching and information delivery (28 comments) Changes routine to keep boredom at bay (26 comments) Attracts students' attention (22 comments)
<b>Information</b>	Ease of searching and obtaining information and presenting it in different advanced and easy ways (10 comments) Delivery of information in a simple, clear, and easy way (9 comments) Searching for new and useful things for my work (3 comments)
<b>Technical</b>	Ease of ICT use (2 comments) To activate useful use of ICT at students' homes (2 comments)
<b>Resources Preparation</b>	Lesson plans are in a neat and organised way (4 comments) Lesson plans and work sheets can be saved and amended. This will help save time and effort for next year (3 comments) Lessons are ready for delivery without the need for rewriting lesson plans or writing on blackboards (3 comments)

**Table 5.29 Reasons for ICT use in teaching**

Teachers pointed to several reasons for their ICT use. The most frequently mentioned reasons were related to lesson delivery and explanation because ICT can save time and effort and it is a new developed way of teaching that reinforces information. The second most frequently mentioned reason was the ease of searching for, obtaining, and presenting information using ICT. The benefits gained from ICT use was the third most frequently mentioned reason. Teachers mentioned that they used ICT to communicate with their students and to be a role model of good ICT use to them.

20. What would you like to learn more about	
<b>37.6%</b> Technical skills	<b>56.8%</b> Application of ICT in teaching
<b>19.2%</b> Management skills	<b>38.7%</b> ICT skills
<b>35.7%</b> Internet searching skills	<b>4.1%</b> Other

**Table 5.30 Preferable extra skills**

More than half of teachers (56.8%) wanted to learn more about the application of ICT in teaching, while relatively the same number of teachers wanted to gain extra ICT skills as well as technical skills (38.7% and 37.6%, respectively). Only 19.2% wanted to learn more

about management skills. Some teachers wanted to learn about time management and some wanted to learn about class management.

### Hindrances to ICT Usage in Teaching

21. In this section we want to find out anything which you feel hinders you, or puts you off making good use of ICT for teaching and other professional duties.						
<i>All these statements are for factors that hinder your ICT use</i>	<b>Agree combined</b>	<b>Strongly Agree</b>	<b>Agree</b>	<b>Neutral</b>	<b>Disagree</b>	<b>Strongly Disagree</b>
Time constrains i.e. need tremendous effort put into preparing lessons, teaching many lessons per week and several levels, too many other demands on your time.	<b>77.8</b>	38.7	39.1	11.7	9.4	1.1
Lack of time for training	<b>70.3</b>	22.9	47.4	15.8	11.3	2.6
Free Ministry courses are very short, 2-3 days and longer courses are not free and not subsidised and they are not directed for varying skills	<b>65.8</b>	35.0	30.8	25.6	6.8	1.9
Taking ICT courses is not beneficial salary wise	<b>62.7</b>	22.9	39.8	20.7	13.2	3.4
Teachers' lack of ICT experience	<b>61.3</b>	18.4	42.9	18.0	16.2	4.5
Whole school shortage of equipment (old hardware, lack of printing facilities, etc.)	<b>60.5</b>	26.7	33.8	15.0	15.0	9.4
Lack of learning resources (software)	<b>59.1</b>	22.6	36.5	18.4	16.9	5.6
Lack of awareness of ICT advantages	<b>58.7</b>	16.2	42.5	17.3	17.3	6.8
Lack of professional development opportunity	<b>57.9</b>	21.1	36.8	20.7	18.0	3.4
Teachers' resistance to change	<b>56</b>	8.6	47.4	24.1	15.4	4.5
Scheduling problems	<b>54.9</b>	24.1	30.8	27.4	14.7	3.0
Lack of technical support and maintenance	<b>54.9</b>	20.3	34.6	21.8	16.9	6.4
No or slow Internet access	<b>53.8</b>	26.7	27.1	18.4	21.1	6.8
Home obligations	<b>53</b>	20.7	32.3	26.3	15.0	5.6
Some students do not have ICT access at home	<b>51.1</b>	18.8	32.3	20.3	19.5	9.0
School financial difficulties	<b>48.5</b>	26.7	21.8	28.2	14.3	9.0
Assigning managerial responsibilities to teachers	<b>47.7</b>	16.5	31.2	30.8	18.8	2.6
Using ICT will increase work load	<b>47</b>	12.4	34.6	17.7	23.7	11.7
Some teachers create a bad influence on others	<b>35.7</b>	10.9	24.8	29.3	28.2	6.8
ICT not seen as a whole school priority.	<b>34.2</b>	13.9	20.3	17.3	35.7	10.8
Lack of class management skills	<b>31.2</b>	5.6	25.6	26.3	32.7	9.8

**Table 5.31 Hindrances to ICT Usage in Teaching**

Teachers were presented with twenty-one statements relating to the things which hinder teachers, or put them off making good use of ICT for teaching and other professional duties. They were asked to indicate the extent to which they agreed or disagreed with each statement using a 5-point scale. The percentage of teachers selecting each of the response options was calculated for each statement, and the results, presented in the above table, are arranged in ranked order on the basis of the combined *strongly agree/agree* percentages. Fifteen statements of the twenty-one attracted agreement levels more than 50%, and three of the fifteen attracted agreement levels more than 65%. They were: *time restrains* (77.8%), *lack of time for training* (70.3%), and *Free ministry courses are very short, 2-3 days, and longer courses are not free and not subsidised and are not directed for varying skills* (65.8%). *Lack of class management skills* elicited the lowest level of agreement (31.2%). A holistic view of the above Table reveals three main factors hindering teachers' ICT usage: time, training, and financial issues.

22. *In your own words, list the 3 things which have most **hindered** you in terms of using ICT in your teaching*

<b>Time</b>	Time constraints (48 comments) There is not enough time to plan a lesson using ICT (4 comments) Teaching with ICT needs time and periods are not long enough (4 comments)
<b>School Facilities</b>	Technical problems with computers, projectors, and printers especially during lessons (18 comments) Too Few computers compared to students' numbers (16 comments) Unavailable or slow Internet connection in classrooms (9 comments)
<b>Training</b>	Few training and career advancement opportunities (22 comments) Long training courses are unavailable (3 comments) No in-school training courses (2 comments)
<b>Student</b>	Students' low ICT skills (7 comments) Students do not accept ICT use and get bored (6 comments) Some students do not have computers at home (5 comments)
<b>Curriculum</b>	The subject is not suitable for presenting using ICT (14 comments) Dense Curriculum (10 comments) The unavailability of a pre-designed electronic curriculum (2 comments)
<b>Information Sources</b>	Few educational software (11 comments) Difficulty of finding lesson plans on the Internet (3 comments) Educational Software is weakly designed (2 comments)
<b>Managerial Issues</b>	Poor maintenance and technical support services (24 comments) Busy resources room schedule (17 comments) Unconcerned school management (3 comments)
<b>Work</b>	Teaching many lessons per week and several levels increases workload

<b>Pressure</b>	(34 comments) Assigning managerial duties to teachers (8 comments)
<b>Personal Reasons</b>	I am not a confident ICT user (27 comments) Lack of experience using ICT in teaching (10 comments) Lack of incentives and encouragement (6 comments) Home obligations (6 comments)

*Table 5.32 Most frequently cited hindrances to ICT use*

Teachers listed a wide range of things that hindered their ICT use. Time constraints, managerial issues, and personal reasons were the top three hindrances. A total of 56 comments viewed time as a major hindrance of ICT use because there is insufficient time to prepare lessons or deliver them using ICT. Regarding managerial issues, 41 comments showed that teachers suffered from poor maintenance and technical support services as well as scheduling problems. Teachers also encountered other hindrances to their ICT use that were of a personal nature. Thirty-seven comments indicated that being an unconfident ICT user with lack of experience in using ICT in teaching was considered an obstacle by teachers. One teacher thought her poor English language skills were a hindrance to her ICT use as most good ICT resources are in English whilst another teacher said being older hindered her usage of ICT. Lack of school facilities was ranked fourth according to teachers' comments. They included lack of school advanced hardware, specialist educational software, Internet connection and insufficient resources rooms. Increasing work pressure on teachers, especially being assigned some managerial responsibilities, was ranked fifth.



23. What are the main three reasons why you **don't** use ICT in your teaching (or use it very little)?

<b>Education</b>	The subject is not suitable for presentation using ICT (8 comments) Students do not accept or appreciate ICT use (3 comments) Mathematical signs are difficult to write (3 comments)
<b>School Management</b>	Few school computers (6 comments) Computers, printers, scanners etc. are not enough in school (5 comments) Lack of facilities and resources (3 comments)
<b>Time</b>	There is not enough time to plan lessons (9 comments) There is not enough time to use ICT (4 comments)
<b>Work Pressure</b>	Too many lessons, classes, and students (8 comments) Assigning managerial responsibilities to teachers (5 comments)
<b>Personal Reason</b>	Lack of experience in ICT use (12 comments) Lack of training courses (6 comments) Lack of knowledge of educational software specialising in my subject (4 comments)

**Table 5.33 Reasons for little or no ICT use**

Teachers were asked to justify and explain their little or non use of ICT. Their comments mainly emphasised the negative effect of lack of ICT experience and training courses as well as lack of awareness of available educational software in the market. Two teachers blamed their late start learning ICT skills on their little use of ICT in their teaching, while three teachers mentioned home and family obligations and another one said she was keen on doing other activities, such as reading. Some teachers, such as Physical Education and Business Administration teachers, thought their subjects unsuitable for presentation using ICT, and some teachers found it difficult to control classes when using ICT. As can be seen from the above two tables (5.32) and (5.33), some comments were mentioned as hindrances as well as reasons for little or no use of ICT in teaching. Taking this into consideration could be of help when trying to promote more ICT use among teachers, since the reasons mentioned for little or no use were the very same hindrances teachers encountered.

### 5.3.2 Teachers' Perceptions towards ICT Usage in Teaching

24. We want to get your views about ICT use in <b>education in general</b> , not specifically in your own subject, and also find out how you see your own ICT use.						
<i>All these statements are about <b>general</b> ICT use in education</i>	<b>Agree combined</b>	<b>Strongly Agree</b>	<b>Agree</b>	<b>Neutral</b>	<b>Disagree</b>	<b>Strongly Disagree</b>
ICT has an important part to play in teaching and learning generally.	<b>98.1</b>	66.5	31.6	1.1	0.8	0.0
Offers easy and quick access to all sorts of information	<b>94.4</b>	48.9	45.5	3.8	1.9	0.0
ICT use improves teacher & students' research skills	<b>94</b>	51.5	42.5	3.0	2.3	0.8
ICT use helps in information reinforcement	<b>92.9</b>	51.5	41.4	6.8	0.0	0.4
ICT makes teaching enjoyable, changes routine and keeps boredom at bay	<b>91</b>	53.8	37.2	7.1	1.1	0.8
ICT use improves teachers' and students' technical skills	<b>91</b>	45.5	45.5	8.6	0.4	0.0
Ability to embody concepts, experiments, and natural phenomena	<b>90.2</b>	51.5	38.7	9.4	0.0	0.4
ICT offers neat presentation of the lesson and helps the teacher stick to the planned lesson	<b>89.9</b>	51.9	38.0	9.4	0.8	0.0
Using ICT helped me be at ease with new changes	<b>89.4</b>	46.2	43.2	7.9	1.9	0.8
ICT makes work easier	<b>89.4</b>	47.7	41.7	6.0	3.8	0.8
Better class management use of ICT attracts attention	<b>88.7</b>	43.6	45.1	7.9	2.3	1.1
ICT use assists teachers in mental preparation of the lesson	<b>88.3</b>	46.6	41.7	7.5	3.4	0.8
Students can help teachers prepare lessons delivered using ICT	<b>88</b>	46.6	41.4	7.9	3.8	0.4
ICT has a positive influence on students' interaction and attention	<b>87.2</b>	45.5	41.7	9.4	2.6	0.8
ICT use increases independence among students and assists in self education	<b>86.8</b>	40.2	46.6	7.1	4.5	1.5
ICT use maintains quality in all lessons delivered during the day	<b>86.1</b>	44.7	41.4	11.3	1.9	0.4
I am very interested in learning about ICT	<b>83.5</b>	39.1	44.4	14.7	1.5	0.4
Teacher use of ICT will have a psychological influence on students who will view their teacher as modern	<b>82.7</b>	40.6	42.1	14.3	1.9	1.1
ICT use offers continuous student-teacher communication resulting in a flexible and better relationship	<b>81.2</b>	33.8	47.4	13.5	4.9	0.4
ICT use results in teacher acceptance and willingness to learn from their better skilled students	<b>80.4</b>	43.2	37.2	13.5	6.0	0.0
ICT improves students' result performance	<b>78.9</b>	41.7	37.2	16.2	4.1	0.8
Using ICT can save time and effort	<b>78.6</b>	41.0	37.6	12.4	7.5	1.5

Too much emphasis is placed on ICT use.	<b>74.8</b>	36.1	38.7	16.5	6.4	2.3
ICT is a tool that can lift the burden off the teacher's shoulders	<b>71.4</b>	32.7	38.7	13.2	10.5	4.9
I feel frustrated when using ICT*	<b>65.4</b>	8.3	13.5	12.8	39.1	26.3
Using ICT is a dull activity*	<b>62.8</b>	7.5	7.9	21.8	38.7	24.1
ICT increases cooperation between teachers	<b>56</b>	23.7	32.3	32.7	10.5	0.8

**Table 5.34 Teachers' Perceptions towards ICT Usage in Teaching**

\*Polarity has been reversed in the summary statistic for the two shaded rows

To determine teachers' feeling and perceptions towards the use of ICT in education, teachers were presented with twenty-seven statements and asked to indicate the extent to which they agreed with each, using a 5-point scale, ranging from *strongly agree* to *strongly disagree*. The percentage of teacher participants opting for each response category was calculated and is reported in the above table. The statements are set out in ranked order of the agreement levels, based on the combined percentages of *strongly agree/agree* responses. For the two negatively phrased items, the aggregate was based on the combined *strongly disagree/disagree* percentages.

Generally speaking, teachers had positive perceptions towards ICT use in education. This can be recognised from the fact that all statements achieved an agreement percentage of no less than 55%. The statement with the lowest agreement level: *ICT increases cooperation between teachers* elicited agreement from just over half of participants. The statement eliciting the highest agreement level supported teachers' positive feelings towards ICT, since nearly all teachers (98%) agreed that *ICT has an important part to play in teaching and learning generally*. A close look at the above table shows that teachers' positive feelings towards ICT was an outcome of the possibilities and advantages it offers. ICT for those teachers offered ease of access to information which can be presented neatly to explain difficult concepts. It also attracts students' attention and increases their interaction which makes class management an easier task for teachers. Finally, and among other advantages, ICT can save time and effort and lift some responsibilities off teachers' shoulders as it makes work easier. A high percentage of teachers (83.5%) were interested in learning about ICT, (62.8%) did not think using it to be a dull activity, and 65.4% did not feel frustrated when using it.

25. In three different words how would you describe your feelings towards ICT?

<b>Happy &amp; Relaxed</b>	Enjoyable (65 comments) Pleasant (23 comments) Interesting (22 comments) Relaxed (14 comments) Exciting (7 comments) Happy (5 comments) Cool (3 comments) Entertaining (2 comments) Enthusiastic (2 comments) Bug-eyed, passionate, lively, happy when I find what I am looking for (1 comment each)
<b>Modern &amp; Advanced</b>	Up-to-date (15 comments) Modern (6 comments) Advanced (4 comments) Fast (4 comments) Developed (2 comments) Convoy technology (2 comments) New (2 comments) Up-to-date technology, change, good for development (1 comment each)
<b>Proud &amp; Confident</b>	Self confident (10 comments) Proud (4 comments) Prideful (3 comments) Independent (2 comments) Security (2 comments) Satisfied, sometimes confident, not very confident about my experience (1 comment each)
<b>Worried &amp; Anxious</b>	Anxious (4 comments) Worried (2 comments) Unknown (2 comments) Frustrated, strange, some worries, I want to finish the work quickly, ambiguous (1 comment each)
<b>Positive Comments</b>	Easy (71 comments) Important (10 comments) Great (9 comments) Attractive (5 comments) Communication (5 comments) Change (3 comments) Good (3 comments) Discipline (2 comments) Necessary (2 comments) Future (2 comments) Needed (2 comments) Nice (2 comments)

	Renewal ( <i>2 comments</i> ) Active, full of new things, machine that should be used for good purposes, wide range of teaching possibilities, creativity, suitable, social openness, nourishing, stimulating, practical, excellent ( <i>1 comment each</i> )
<b>Beneficial &amp; Useful</b>	Beneficial ( <i>25 comments</i> ) Saves time and effort ( <i>22 comments</i> ) Educational ( <i>8 comments</i> ) Effective ( <i>7 comments</i> ) Supporting ( <i>6 comments</i> ) Information enrichment ( <i>5 comments</i> ) Time organiser ( <i>4 comments</i> ) Search ( <i>3 comments</i> ) Attracts attention ( <i>3 comments</i> ) Fulfill aims ( <i>2 comments</i> ) Makes life easier ( <i>2 comments</i> ) Creative teaching ( <i>2 comments</i> ) Expansion ( <i>2 comments</i> ) Provides information in a simple way ( <i>2 comments</i> ) Transfers information ( <i>2 comments</i> ) Has a positive influence ( <i>2 comments</i> ) Great method of informing ( <i>2 comments</i> ) Save my ideas ( <i>2 comments</i> ) Indispensable ( <i>2 comments</i> ) Sea of information ( <i>2 comments</i> ) Makes work easy, Change of teaching style, Information reinforcement, Attract students' attention, especially those with visual intelligent, Assists self-education, Stimulates the brain, You give it everything so it will give you something, Elaborate on the curriculum, Change of routine, It is a means not a goal, Close to students ( <i>1 comment each</i> )
<b>Personal Feelings</b>	Sincere desire to gain ICT skills and learn more about it ( <i>11 comments</i> ) I love using it ( <i>10 comments</i> ) Educated ( <i>3 comments</i> ) Accept change ( <i>3 comments</i> ) Concerned ( <i>3 comments</i> ) Benefited ( <i>2 comments</i> ) Regenerates my energy, flexible, sincere interest in ICT, enlightened, ICT for me is like a son that I really care about but he is tiresome and undutiful, my husband's enemy, became one of my children, more important than my jewelry, one of my family members ( <i>1 comment each</i> )
<b>Negative Feelings</b>	Tiring ( <i>10 comments</i> ) Bored ( <i>7 comments</i> ) Consumes time and effort ( <i>6 comments</i> ) Exhausting ( <i>5 comments</i> )

	Difficult (3 comments)
	Not beneficial (2 comments)
	Needs extra effort (2 comments)
	Headache (2 comments)
	I have to use it even if I do not like it, inevitable evil, falling behind, unnecessary, mental stagnancy, no interaction, inevitable, complicated, uninteresting (1 comment each)

**Table 5.35 Feelings towards ICT use**

Teachers expressed their feelings towards ICT using a wide range of adjectives, most of which indicated positive feelings. In total, 494 comments expressed positive feelings compared to only 60 comments that expressed negative feelings. As can be seen from table 5.35, the adjectives used were put into groups. The "positive feelings" group contained all 129 comments that did not fit in any of the other groups. Apart from this group, the highest number of comments was in the "happy and relaxed" group with 147 comments, followed by 116 comments in the "beneficial and useful" group. The "negative feelings" group ranked third with 46 comments. Some participants used short sentences to express their feelings such as female teachers who expressed their high ICT usage and strong relationship with their computers using meaningful expressions such as "my husband's enemy", "became one of my children", "more important than my jewelry", and "one of my family members".

### 5.3.3 ICT Education Policy

26. As far as I am aware our school ICT policy addresses the following issues:
44.4% Using ICT is a must for all teachers
29.3% Well maintained, actively used school website
25.6% Students are allowed to bring their personal laptops
50.8% Teachers should make use of the learning resources room at least once in a term
48.1% Full support for use of ICT in all subjects
55.6% All teachers should have a minimum level of ICT skills
71.4% Exam questions should be written using word processors
30.5% Students' Internet use should be supervised by teachers
1.5% Other policies

**Table 5.36 School ICT policy**

Teachers were presented with a list of policies and asked to point to the ones practiced in their schools. The most common ICT school policy statement was *exam questions should*

be written using word processors (71.4%), followed by *all teachers should have a minimum level of ICT skills* (55.6%), and *teachers should make use of the learning resources room at least once in a term* (50.8%). The least practiced ICT policy was allowing students to bring their personal laptops to school (25.6%). Although teachers were given the opportunity to add extra information regarding their school's ICT education policy not mentioned in the list, only 4 teachers provided such information. The policies mentioned did not differ from the ones in the list but did suggest flexibility, in that teachers were not obliged to write exam questions themselves using word processeors, implying that the school's interest was in the product, i.e. exam questions, and not teachers' ICT skills.

27. *How do you think these school policies are influenced by the Ministry of Education's policy?*

<b>Greatly Influenced</b>	The school is greatly influenced and it is a good ICT user (15 comments) The school is very influenced but faces difficulties in policy implementation (6 comments) The school is very influenced by MoE policies (37 comments)
<b>Influenced</b>	The school is slightly influenced but faces difficulties in implementation (8 comments) The school is influenced by MoE policies but it improves them (7 comments) The school is influenced positively (6 comments) The school is slightly influenced by MoE policies (11 comments)
<b>Not Influenced</b>	The school is not influenced because its policies precede MoE policies (22 comments) The school is not influenced because the MoE lacks procedures that assure implementation of their policies (11 comments)
<b>I do not know</b>	I do not know (11 comments)
<b>Total Implementation</b>	MoE policies are totally implemented but by self effort (8 comments) The school totally implementes MoE policies (18 comments)
<b>Implemented</b>	The school is trying to implement all MoE policies but is encountering difficulties (11 comments)
<b>Not Implemented</b>	The school has not implemented MoE policies (4 comments)

**Table 5.37 MoE influence on school policies**

Teachers were asked to indicate the extent to which their school ICT policies were influenced by MoE policies. Their responses showed that they interpreted the question in two different ways, the intended meaning "the extent of MoE policy influencing school policy" and "the extent of implementing MoE policies". The researcher made the decision to analyse responses according to both understandings and put them in two tables to

emphasise the difference between "implementation" and "influence". The difference between these two words on which the analysis was based was that "influence" was the effect of MoE policies on school policies and whether they were taken into consideration when schools were forming their policies. Whereas "implementation" was the next step after being influenced by MoE policies, that is, putting them into effect. The differentiation is illustrated in the following comment which uses both words in the same sentence *"The school is very influenced but faces difficulties in policy implementation".*

Most responses showed that participating schools were greatly influenced or influenced by MoE policies, however, they still faced difficulties implementing these policies. School not influenced explained that they were not influenced because their policies had preceded MoE policies. Moreover, the MoE lacks procedures that assure implementation of their policies. The difficulty of implementing MoE policies raises questions about those policies and how the MoE assists schools to step forward from being influenced to going on to implement and activate such policies. Some participants provided extra information on the problems faced by schools regarding implementation of MoE policies. Their comments point to the deficiencies of MoE policies, in short they are: lack of financial support, guidance and supervision. They are presented in the following table (5.38) in the form of bullet points.

- |   |
|---|
| <ul style="list-style-type: none"> <li>• MoE does not facilitate the implementation of all policies</li> <li>• Schools implement MoE policies without financial support</li> <li>• The policy collides with lack of finance and facilities</li> <li>• MoE policy does not take into consideration how it will be implemented</li> <li>• MoE policy is ink on paper to be read in newspapers with no actual implementation</li> <li>• There is a gap between school policies and MoE policies</li> <li>• There is no MoE procedure for financial support or supervision of policy implementation</li> <li>• MoE does not support implementation because it does not provide enough ICT equipment</li> <li>• MoE demands change from schools without offering training for staff</li> </ul> |
|---|

***Table 5.38 Deficiencies of MoE policies***



28. Do you know any detail of or even an overview of the MoE ICT policy?
Yes <b>37.6%</b> No <b>62.4%</b>
29. You may or may not be completely aware of the details of the Ministry of Education's ICT policy. Please respond to these questions according to your understanding. Which of these if any do you think are the Ministry of Education's ICT policy? <i>Tick all Applicable</i>
<b>42.9%</b> ICT will be integrated in educational development plans
<b>21.8%</b> Electronic curriculum
<b>22.9%</b> Electronic school
<b>41.7%</b> Integrating ICT skills with other subjects
<b>56.8%</b> Take schools into the technology age
<b>35.7%</b> Providing the Internet in all schools
<b>20.7%</b> Computer for each student
<b>56.4%</b> Spreading the use of ICT in schools
<b>50.4%</b> Offering teachers computers by means of easy to pay monthly instalments
<b>28.2%</b> Watani project
<b>60.2%</b> Promotion of effective use of learning resources rooms
<b>11.3%</b> Electronic learning project
<b>66.2%</b> Offers ICT training for teachers

**Table 5.39 Awareness of MoE ICT policy**

Continuing the subject of policy, teachers were asked about the extent of their knowledge of MoE ICT policy. The results showed that the majority of teachers (62.4%) were not aware of it. Only 37.6% were aware of this policy. A following question asked teachers for details regarding their knowledge of MoE ICT policy by indicating the policies they were aware of or thought were policies. The results revealed that only a few teachers were aware of current and important MoE ICT policies such as the *Watani project* (28.2%), *electronic curriculum* (21.8%), and *electronic learning project* (11.3%); although, these policies have been widely publicised through daily news papers and national TV talk shows.

There were four most frequently mentioned policies, with no less than 56% of teachers referring to them. However, only two were actual practical policies that directly affect teachers: *offer ICT training for teachers* (66.2%) and *promotion of effective use of learning resources rooms* (60.2%). The other two: *take schools into the technology age* (56.8%) and *spreading the use of ICT in schools* (56.4%) guessed by teachers but not known for sure, are in my view, more aims than policies.


30. We want to get your views on your school ICT policy versus MoE ICT policies and also find out about their influence on your perceptions towards ICT					
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
My ICT use is influenced by school policy	24.4	43.6	22.9	4.1	1.9
Our school ICT policy has positively influenced my feelings and perceptions towards ICT	22.6	50.4	17.7	6.0	2.3
Our school ICT policy is ahead of the Ministry's ICT policy therefore it is not important for our school	15.0	27.8	28.2	19.9	5.6
The Ministry's ICT policy is more concerned with managerial aspects of schools	14.7	51.1	26.7	5.3	0.8
Ministry policies are all theories not applied in reality and with no tangible results	12.8	33.1	37.6	12.4	3.0
All Ministry policies lack explanation and teachers have to apply them without fully understanding them	16.5	39.8	34.6	6.0	1.5
I am encouraged to use ICT in teaching by the Ministry's policy	4.5	18.0	37.6	28.6	6.8
Teachers and head teachers do not know the Ministry of education's ICT policy	15.8	38.3	30.8	12.4	2.6
The Ministry of Education raises awareness of its ICT policies among teachers	2.3	19.2	39.1	28.9	10.2
The Ministry of Education sets goals and guides teachers to fulfil them	3.0	20.3	37.2	25.6	13.5
I am put off using ICT in teaching because of the unclear ICT policies of the Ministry of education	22.6	50.4	17.7	6.0	2.3

**Table 5.40 School ICT policy vs MoE policies**

Teachers were presented with eleven statements related to their school's ICT policy versus MoE ICT policies and their influence on their perceptions towards ICT. The analysis and presentation of these statements does not include aggregation of *strongly agree/agree* responses because the question did not aim to rank factors or list the most mentioned ones. Instead, each statement was looked at and put into context to gain a better understanding of the link between school ICT policy and MoE policies. A close look at the above table shows that many participants were hesitant about the statements and chose to express a neutral response. This may indicate their lack of awareness and knowledge of MoE policies since related statements also elicited a high number of neutral responses. Therefore, I decided to report responses in the agree scale as I took into consideration teachers' hesitation.

Generally speaking, teachers reported being positively influenced by their schools' ICT policy in terms of use (43.6%) and perceptions towards ICT (50.4%). Not many teachers reported being positively influenced by MoE policies (18%) This may be a result of the ICT policies of the MoE being unclear given that only a few teachers agreed with the statement *the MoE raises awareness of its ICT policies among teachers* (19.2%). More teachers agreed that *teachers and head teachers do not know MoE's ICT policy* (38.3%). In addition, teachers pointed to the lack of explanation of MoE policies as a negative influence because they had to apply them without fully understanding them (39.8%), which it is suggested is likely to result in not achieving MoE aims.

### 5.3.4 Future of Education

31. We want to get your views on the possibility of these things happening in the future. Please indicate whether the statement is highly likely to happen, Likely, or highly unlikely to happen.				
				
	Highly Likely	Likely	Unlikely	Highly Unlikely
Send home work by Email	49.6	29.7	14.3	6.4
Activated school website	45.1	43.6	9.4	1.9
The curriculum will change	25.6	57.5	12.4	4.5
Assessment via class discussion and projects	22.6	56.0	18.8	2.6
Assessing things that have not been assessed before (entering school website and participating)	22.2	45.9	25.6	6.4
Introduction of distance learning	24.4	33.5	25.6	16.5
No school bag	21.4	31.2	29.3	18.0
Computer for each student	20.7	35.7	27.1	16.5
Use of smart boards in teaching	38.3	47.7	10.5	3.0
Wireless Internet connection	28.9	44.7	23.7	2.6
Paperless education	17.3	45.1	26.7	10.9
ICT will dominate our lives	32.0	53.4	10.9	3.8
All hardware will be naturally available at schools	36.1	50.8	11.3	1.9
Provide students with curriculum plan and they will prepare and search for information	28.2	43.6	24.4	3.8
Virtual classrooms	12.8	38.0	27.4	21.8
No more traditional teaching	18.8	33.8	29.3	18.0
Better hardware is available for teachers	23.3	58.3	17.3	1.1

I am not optimistic that gap will not increase between us and developed nations	26.7	36.5	30.1	6.8	
DSL Internet connection	36.5	53.4	7.9	2.3	
No house without Internet access	25.6	58.6	13.2	2.6	
School internal network	33.1	54.1	10.5	2.3	
Electronic assessment	18.4	48.9	25.9	6.8	
Fulfilment of educational goals	20.7	55.3	15.8	8.3	

**Table 5.41 Possibilities in the future**

To evaluate and understand teachers' views of the future they were presented with a number of statements and asked to indicate the probability of them happening in the future. All the possibilities related to new technologies, such as "smart boards" or practices influenced and facilitated by these technologies, for example, "no more traditional teaching". Considering the spread of responses across the four columns provided, it can be seen that teachers had a positive view of the future. In general the highly unlikely column had the lowest percentages while the likely column had the highest percentages.

The top three highly unlikely items were *virtual classrooms* (21.8%), then *no more traditional teaching* (18%), and *no school bag* (18%). The items with the highest percentages in the highly likely column are all new technologies such as *send home work by email* (49.6%), *activated school website* (45.1%), *use of smart boards in teaching* (38.3%), and *DSL Internet connection* (36.5%). Moreover, the highest percentages in the likely column were for items related to better practice. The top three items were *no house without internet access* (58.6%), then *better hardware is available for teachers* (58.3%), and *the curriculum will change* (57.5%).

32. What do you think will happen to the role of the teacher? <i>Tick as many boxes as you want</i>
<b>68.0%</b> Teaching is not the only role of the teacher s/he has a pedagogic role as well
<b>64.3%</b> Teachers will not have a text book
<b>57.5%</b> Change effort from classroom to planning and searching for suitable electronic material
<b>57.1%</b> Teachers will share directing the learning experience with students
<b>50.8%</b> Will not change, students need someone to teach and guide them where to find information
<b>42.9%</b> Change to facilitator and advisor
<b>26.7%</b> Computers will be used for much of the assessment rather than being marked by a teacher
<b>24.4%</b> Change in terms of relationship with students
<b>21.8%</b> If the teacher will not change to fit his/her new role in the future he will be left out
<b>18.4%</b> Will learn from the computer and not the teacher

**Table 5.42 Future role of the teacher**

Changes in the future will have an effect on teachers and the role they play in school. However, this change ranged, as participating teachers viewed it, from a slight change such as *teachers will not have a text book* (64.3%) and *change effort from classroom to planning and searching for suitable electronic material* (57.5%), to a dramatic one in which *students will learn from the computer and not the teacher* (18.4%). However, 68% of teachers believed that even if others mentioned that the role of teachers would be less important, it would remain the same because there is a need for their pedagogic role as well.

### 33. Things you think will happen.

<b>Education</b>	An increase in the spread of ICT use in all year levels (9 comments) Weakness in reading and writing skills among youth (2 comments) More recognition of ICT use in teaching (2 comments)
<b>Training</b>	Continuous training for educationalists (6 comments)
<b>Teacher</b>	Increased interest among teachers to gain ICT skills (3 comments) Teachers' role will be secondary in electronic teaching (2 comments)
<b>Education Policy</b>	Improve MoE policy to incorporate ICT use in teaching (1 comment) Oblige teachers to use ICT in their teaching (1 comment)
<b>School Facilities</b>	Use of smart boards (5 comments) Availability of electronic curriculum (4 comments) Availability of Internet connection in schools (3 comments)
<b>Pessimistic View</b>	I do not think the future will be better but hope it will be (1 comment) I am not optimistic if the MoE remains playing the same role as nowadays (1 comment) Will be invaded by Western ideology, especially if the parents and school's instructive role is absent (1 comment)
<b>Global Effect</b>	Widespread ICT use in teaching (3 comments) Revaluation of ICT use (2 comments)

**Table 5.43 Probable future**

Based on the current situation, teachers viewed a bright future for ICT use in education. They anticipated better state of the art equipment, hardware, and software accompanying a widespread use of ICT. However, due to the few responses to this question it was not possible to draw out information about which aspects of the future interested teachers more, or they were concerned about. However, some comments were interesting as they were not expected, such as foreseeing a weakness in reading and writing skills among youth as a result of the spread of ICT use, and concern about being invaded by Western ideology, especially if the parents' and school's instructive role is absent because of the popularity of

distance electronic learning and the anticipated changing role of teachers from educators to facilitators of the learning process.

34. *What do you hope will happen in the future?*

<b>Education</b>	Comprehensive improvement of education (28 comments) Renew and improve the curriculum (28 comments) New methods and means to improve education (27 comments) Spread of ICT use in all schools (15 comments) Design professional educational software (8 comments)
<b>Teacher</b>	Take care of teachers and not pressure them with responsibilities (26 comments) A teacher who is aware of ICT importance and a competent user of it (11 comments) Take care of teachers' preparation in Education College (4 comments)
<b>Student</b>	A positive change in students' personalities (15 comments) Students' respect for knowledge and the desire to seek it (10 comments) Students will be well-acquainted users of ICT (8 comments)
<b>School Issues</b>	Advanced school facilities and infrastructure (132 comments) Electronic curriculum (9 comments) Maintenance and technical support (2 comments) Resources room management (1 comment)
<b>Training</b>	Continuous ICT training in and out of school for teachers (40 comments)
<b>MoE Policy</b>	Execute all MoE policies related to ICT (6 comments) Generalisation of successful experiences and equal distribution of opportunities (12 comments) Improve the curriculum and evaluation methods (16 comments) Comprehensive improvement of education in all the Kingdom's regions (9 comments)
<b>Wishes</b>	ICT related wishes (20 comments) Hope for peace, prosperity, and development (10 comments)

*Table 5.44 Preferable future*

This question received more attention than the previous one, in my view, due to the opportunity teachers were given to paint a rosy picture of their preferable future in which all problems would be solved and all solutions would be implemented. Although the wording of this question did not imply ICT related wishes, many respondents assumed that it was referring to ICT issues. However, some respondents focused on general issues, such as peace, prosperity and development.

Concerning the use of ICT in education, teachers hoped that widespread use of ICT would extend to all urban and rural educational areas and all schools would be obliged to use ICT in their teaching as well as pay extra attention to teaching ICT and the English Language since, as teachers said, they are the primary means of communication in the 21<sup>st</sup> century. Teachers also specifically hoped that their managerial duties and other duties not related to their educational role would be lifted which would save them time and effort and enable them to focus on much more important issues, such as spending the saved time on gaining ICT skills, planning ICT lessons, and training. Moreover, teachers hoped that Teacher Colleges would focus more on student teacher preparation, which should include both acquiring good ICT skills and training in utilising ICT in education.

A total of 25 comments concentrated on hoping that students would change their attitude towards learning and instead of being pushed and forced to go to school they would come to school wanting to learn, seeking knowledge and not certificates. These hopes for change indirectly implies a change in students' role from being passive learners to active researchers of information and knowledge, wherever it may be found, a change, as one teacher pointed out, supported by the widespread use of ICT and the ease of access to knowledge through Internet.

Generally speaking, teachers had a positive attitude towards the future, either probable or preferable, yet, they were able to recognise the threats that ICT use might carry, especially to youth. A number of responses highlighted the importance of teaching ICT skills to students and teaching them the correct and safe use of it as well; of educating them that ICT can be used for educational purposes as well as for fun; and of encouraging them to use it purposively and beneficially. Two teachers viewed ICT as a threat to their established religion, traditions, and culture. They feared that the use of ICT with all the endless possibilities it offers will make people forget their culture and religious practice. In my view, they were afraid of globalisation.

In brief, teachers hoped for comprehensive improvement of education, radical change of the curriculum, and continuous teacher training.

## **Chapter Six: Discussion**

In recent years, and as a result of the increasing pace of advances in technology and especially developments in the use of ICT in schools, Saudi teachers are now encouraged to make routine use of ICT in their teaching. This research sought to obtain deeper insight into Saudi secondary school teachers' ICT usage and the relationship between this and ICT educational policy, teachers' perceptions towards the use of ICT in the teaching and learning process, and their envisions of possible and preferable usage of ICT in education. These particular issues were chosen for investigation because they are thought to be closely related and to influence each other. Potentially, they create a circle. The circle as discussed in section 3.3 starts from the educational policy which will predictably affect teachers' usage of ICT. Their ICT usages is also influenced by their perceptions of computers, and these perceptions, either negative or positive, are influenced by policy and how it introduces, plans, and implements the concept of ICT in education. Teachers' perceptions of ICT are likely to be reflected in their future views of ICT utilisation in education, which should therefore be considered in any future ICT policy.

A close look in this study at the aforementioned issues showed a stronger link between them at sublevels. Teachers use ICT in their teaching for many different reasons. Some usage may be a result of the supporting influences, motivators, and incentives they encounter in a school environment that encourages and supports their ICT use. However, teachers may also face some hindrances and difficulties that result in little or no use of ICT in their teaching practice. Whether positive or negative influences, supporting or hindering factors, all will directly or indirectly affect teachers' feelings towards ICT. In addition, through its policies and especially the ICT policy, the Ministry of Education exercises its governing role of the educational scene, of which teachers are a fundamental part. These policies are reflected on teachers' usage of ICT as well as their feelings towards this usage. Based on their experiences, feelings, and the influence of MoE policies, teachers expressed their views on both probable and preferable futures. Accordingly, policy makers should take these into consideration in their attempt to make both ends meet reality and expectations.



The previous chapter presented the findings from data generated from interviews and questionnaires distributed to a sample of teachers in ten boys' and girls' secondary schools in Riyadh, Saudi Arabia. A total of fourteen teachers were interviewed and 266 teachers completed the questionnaire. The data gathered from teachers provided a clear picture of the current status of ICT use in Saudi secondary schools. The study findings indicated that ICT use is popular among secondary school teachers; however, its use in the classroom is mostly a supplement to the curriculum and its use out of class is to prepare lessons. Teachers use ICT because of its promised advantages to the teaching and learning process, particularly its assistance in saving time and effort. In addition to ICT advantages, there are motivators and incentives that encourage teachers to use ICT and although internal and personal incentives are the most influential for teachers, they noted the importance of external influences, especially encouragement from the school management. One teacher suggested a formula for good ICT use which other teachers agreed with, it is:

*Internal incentive + School encouragement = Good use of ICT in education*

Internal incentives include such things as a teacher's wish to be a successful, distinguished teacher, his/her wanting to use ICT, and belief in the benefits of ICT for learners. Factors associated with encouragement from the school management include supporting teachers ICT use by providing suitable hardware and software, facilitating good maintenance, resolving scheduling and timetable problems with regards to labs and resources room booking, and distinguishing and appreciating teachers who use ICT in their teaching. The findings stress the importance of balancing internal and external motivators and incentives in order to encourage and support better ICT utilisation in teaching.

However, teachers also mentioned some hindrances that affected their ICT use. These were mainly time constraints, training, and financial issues. Not surprising, the hindrances to teachers' ICT use are the very same reasons for little or no use of ICT in their teaching. Despite mentioning some hindrances, teachers maintained a positive feeling towards ICT use, and all of them considered ICT to be useful. This positive feeling was found to be related to the advantages teachers believed ICT offers to the educational process, such as attracting students' attention, maintaining students' interest, students' interaction with

information presented on the computer, and the ability to embody concepts, experiments, and natural phenomena. In addition, teachers' feelings towards ICT were not only influenced by the positive or negative aspects they encounter in school, they are also influenced by the ICT policy of either the MoE or the school. Teachers favoured their school's ICT policy over MoE's policy and reported being positively influenced by the former for several reasons which ranged from problems in implementing MoE policies to a low awareness level of these policies. Under the influence of their feelings, ICT policies, and previous experiences, teachers generally had a positive vision yet humble expectations of the future as they were not expecting a dramatic change from the current status of ICT use in schools. In brief, teachers hoped for comprehensive improvement of education, radical curriculum change, and continuous teacher training.

Having presented a brief overview of the findings in this introduction to the chapter, the following sections' purposes are to discuss and interpret the findings in relation to the research questions underpinning the fieldwork conducted for the study. For clarity, the main findings and discussion will be presented in relation to the research's main themes: teachers' use and perception of ICT, ICT policy, and the future of education. Section 6.1 discusses findings relating to "How are teachers currently using ICT in their teaching?", "Why are they using ICT in their teaching?", "What are the influences supporting ICT usage?", "What are the motivators and incentives for using ICT in teaching?", and "What hinders teachers' usage of ICT in teaching?" Section 6.2 addresses the question "How do they feel about this usage?" Section 6.3 focuses on educational policy and its influence on teachers' ICT use in their teaching and their feelings towards this use. The research question "What are teachers' views on probable/preferable future usage of ICT in education?" is discussed in section 6.4.

## **6.1 Teachers' Usage of ICT in Teaching**

Generally speaking, and after reading previous Saudi based studies such as (Al-Ghamdi 2001; Al-Obaid 2002; Al-Saif 2006; Al-Showaye 2002) it can be said that ICT use among Saudi teachers is increasing, both in and out of class activities, including lessons' preparation. In this study it was found that teachers' ICT use mostly related to lesson

preparation activities. In class, most teachers used ICT as a supplement and add on to the curriculum which was mainly delivered using traditional methods but new ways of presenting information, such as showing video, pictures, and sound were also used. Many of the teachers justified this reserved integration of ICT in their teaching by stating that they preferred to use ICT when it could add an extra dimension to the lesson and not all the time, simply for the sake of using it. Subscribers to this type of ICT use view ICT as a tool, although it is a very important tool (Cuckle & Clarke 2003; Granger, Morbey, Lotherington, Owston, & Wideman 2002) that can assist them in achieving educational and pedagogical goals. Other teachers, who were found to be a minority, viewed ICT as a method that will have a great influence on pedagogy and how students learn. This was in keeping with the views of others such as Downes et al. (2001).

Whichever way teachers in this study used ICT, i.e. as a tool or method, they used it for its promised advantages to the teaching and learning process. More than three-quarters of participating teachers believed that ICT saves time and effort, assists in lesson delivery and explanation, and is a new and developed teaching tool that reinforces information. Teachers pointed to an interesting influence of ICT, namely, their willingness to change, improve, and develop their teaching practice, as well as their willingness to learn from their better skilled students. This finding is interesting as it highlights the positive influence ICT use in schools has had socioculturally as well as educationally. Saudi Arabia, like other Middle Eastern and oriental nations, gives teachers a special respectful status and the relationship between teachers and their students is a one way relationship, in which students are lectured and instructed with little space for dialogue. Importantly, this status has discouraged teachers from change and from admitting their need to learn and follow up advances in their speciality fields, let alone learning from their own students. However, since the introduction of ICT in schools, teachers have begun to feel comfortable about using this new technology, admitting and recognising their need for new teaching approaches and special training. This was demonstrated in this study as all participating teachers viewed ICT as useful in some way. Thus, although ICT for Saudi teachers may have been viewed as a symbol of Western teaching practice, which differs fundamentally from eastern teaching practice, a willingness to use this symbol indirectly indicated a willingness to

change to western teaching practice. A close examination of the Saudi educational scene revealed many changes had occurred as a result of the introduction of ICT to school. These changes included, as the study showed, students good conduct policy, students' improved result performance, interaction and attention, teacher and social advisors training to meet teaching and learning goals, and educational planning (Ministry of Education 2006). One example of teachers' adaptation was their use of the Internet as a method of continuous communication between teachers and students through email, bulletin boards, and teachers' own websites. The fact that Saudi teachers mentioned such new employment of the Internet demonstrated their willingness to change.

Introducing ICT in education, as Granger et al. ( 2002, p.480) have stated, "is complex, shaped by pedagogical philosophies, curricular requirements, and the proliferation of ICT in society at large". Moreover, it is influenced by external and internal factors that either support and motivate or hinder ICT implementation in education. Participating teachers in this study emphasised the importance of integrating external and internal factors to promote better ICT use by teachers because one thing can be prioritised over another. One teacher suggested a formula to illustrate this and many others agreed with it: internal incentives + school encouragement = good ICT use in education. It was found in this study that a supportive school environment, which includes good access to computers, training, technical support, management support, and school policy, are the most important supporting and motivating factors. Participating teachers believed whole school policy on ICT use, the most frequently mentioned external factor, combined with internal incentives will together provide the best environment for encouraging good practice. Scrimshaw ( 2004) in his study of enablers of successful ICT use among teachers pointed to a similar emphasis on the interrelationship between external and internal supporting and motivating factors. The most frequently reported motivating internal factors in this study were benefits of ICT use in teaching and teachers' belief in those benefits. Although teachers emphasised the importance of integrating external and internal factors, they reported that internal motivators and supporting factors mattered most to them. They were means to overcome the external difficulties they encountered in their schools' environment.

Training was one of the most mentioned factors supporting and motivating ICT use. Teachers varied in their training needs, however, they all emphasised the importance of and the benefits they would gain from specialised ICT training to meet their teaching and learning goals. A high percentage of teachers endeavoured to use ICT in their teaching but with no suitable ICT and pedagogical training their practice is more trial and error. Moreover, lack of training often resulted in weak practice of ICT use such as using PowerPoint presentations to merely present the book content in electronic format, concentrating on using just one application, such as word processors, or using educational CDs as a reward for good student behaviour. In line with participating teachers' emphasis on the importance of training, much research has considered training as an "external support" for ICT use and a solution to overcome usage barriers. It is important that training should focus on both sides of the issue: training in basic ICT skills and also on ICT implementation in the educational process (Becta ICT Research 2003;Scrimshaw 2004). However, it is also important to point out when discussing ICT training that Saudi teachers, unlike their British counterparts, are disadvantaged by the lack of grand schemes for teacher training, such as the New Opportunities Fund scheme for providing ICT training for all teachers (NOF 2009) and this is likely to have an influence on teachers' practice and ICT use.

In light of the above, it can be seen that many of the supporting and motivating factors for Saudi teachers' ICT use are similar to those for ICT use by their counterparts in other countries. However, the internal incentives or motivators are influenced by the Islamic religion, which is a religion that respects knowledge and encourages Muslims to pursue it wherever it is found. Many verses in the Holy Quran address this issue *"Are those who know equal with those who know not? But only men of understanding will pay heed"* (Az-Zumar 9:75) *"Allah will exalt those who believe among you, and those who have knowledge, to high ranks. Allah is Informed of what ye do"* (Al-Mujadila 11:22) *"say: My Lord! Increase me in knowledge"* (Ta-Ha 114:135) (Holy Quran 2008). To appreciate the extent of the influence of Islam on teachers one has to understand the history of the Kingdom of Saudi Arabia and its political, economic and social development. It is necessary to realise that Islam, which permeates every aspect of a Muslim's life, also

permeates every aspect of the Saudi Arabian state. In addition, Saudi Arabia is the location of Islam's two of holiest places, Mekkah and Medina. Saudi society, as a result of practising Islam in all aspects of life, is a very conservative and religious society and, to a large extent, people are spiritually rather than materialistically motivated. Values such as integrity, fidelity, perfectibility, and accomplishment are deeply rooted in Islam and, hence, Saudi teachers. Therefore, taking into consideration this cultural and religious background when first introducing ICT into schools is important for two reasons. First to reassure teachers that this new technology, usually associated with Western culture, with all the possibilities it offers to the teacher and to the educational process, is compatible with their values, faith, and beliefs. Second, to encourage teachers to use ICT by promoting the idea that by using ICT in teaching the teacher is not only likely to be a better teacher but s/he will also be a better Muslim, since Islam encourages learning and the acquiring of new knowledge. Such consideration will, I think positively influence their perceptions towards ICT.

As well as reporting supporting factors, motivators and incentives for ICT use, teachers also reported hindrances to ICT use in teaching, as these two are important since they affect teachers' motivation to engage with ICT. In this study the presence of some factors was considered to be motivating and incentivising, whereas their absence was regarded as a hindrance to ICT use in teaching. Moreover, there was a link between hindrances to ICT use and reasons for little or no use of ICT in teaching. These findings have implications for the ICT policy making process at the school management level and MoE level. Being aware of the interrelationship between motivators and hindrances may save time and focus effort on promoting good ICT use among teachers and finding solutions to hindrances.

In this study, three main factors were found to be hindering teachers' ICT use: time constraints, training, and financial issues. Teachers revealed that time constraints resulted in an increasing and burdensome workload which left no time for them to learn new ICT skills, develop professionally, try new hardware and software, and prepare ICT resources for lessons. Teachers in Western studies similarly identified time as a barrier, obstacle, and hindrance because lack of time will make good use or implementation of ICT difficult

(Grainger & Tolhurst 2005;Granger, Morbey, Lotherington, Owston, & Wideman 2002) and will also negatively influence ICT integration into the curriculum (Mumtaz 2000;Smerdon, Cronen, Lanahan, Anderson, Iannotti, & Angeles 2000). Moreover, adequate time for training has also been noted as a condition for good ICT implementation in schools (Ensminger, Surry, Porter, & Wright 2004).

The availability of good quality effective ICT training for teachers was considered by participating teachers very important for good implementation of ICT in teaching. Williams et al. ( 2000a) found training as well as access and support to be major contributors to successful ICT implementation. Teachers in this study suffered from many problems related to training: lack of time for training, short training courses, inappropriate training styles, lack of training in using new hardware and software introduced in their schools, and lack of pedagogical training, all of which result in low levels of ICT use by teachers. However, teachers stressed the importance of pedagogical training and claimed that whilst ICT basic skills are easy and can be simply acquired in a one week course, training in how to use ICT effectively to manage students' learning is an ongoing process that demands specialised continuous professional development programmes. As regards training, many have suggested solutions to help balance teachers' demands and their experiences in ICT use. Snoeyink and Ertmer ( 2001) suggested that the first stage of training should focus on basic ICT skills and operation of widely used software applications. Once teachers have acquired the required skills they can move on to pedagogical training. The training suggested will take into consideration teachers' varied skills and experiences in using ICT.

ICT training can overcome many hindrances, such as low self confidence (Granger, Morbey, Lotherington, Owston, & Wideman 2002) and ineffective ICT use in teaching, such as using computer applications such as Word processors without prior planning for the activity to achieve the lesson's pedagogical aims or using educational software related to the subject but not to the lesson presented. This is similar to what happened to one English language teacher, who I came across during my visits to schools. She used English Grammar software during the lesson but did not limit its use to exercises related to that day's lesson "tag questions". Instead, students chose exercises which were not related to the

lesson and this influenced the anticipated positive outcome from using the software, namely, reinforcing newly acquired information and practising it.

Teachers' views should be taken into consideration when designing training courses to maximise benefits gained from them and increase teachers' acceptance levels. Teachers in this study preferred to receive continuous training around the year to assist them during their first steps in implementing ICT in their practice, keep motivation levels high, and provide them with objective feedback. This training should be in school to save teachers' time and reduce 'drop out' resulting from difficulties in commuting or allocating suitable time to attend courses. Moreover, school based training should be designed specifically to meet the needs of the teachers in that school (Preston 2007) especially since in school training has been found to be significantly associated with higher ICT use (Mulkeen 2003). These school courses should take different forms, such as basic skills courses with actual hands-on time for teachers, lectures on the logic of and rationale for using ICT in teaching, how ICT helps learning, ideas for using ICT in the classroom, attending colleagues' lessons and learning from each other, and allocating specialist training time for each teacher at their own pace which they can use to access learning resources and the Internet to practise their newly obtained skills without adding an extra workload on them (Smerdon, Cronen, Lanahan, Anderson, Iannotti, & Angeles 2000). It is also important to note that teachers value many different forms of training and that the content of training courses should meet the needs of teachers in accordance with their ICT skills and experience, professional roles, and access to ICT resources (MirandaNet 2008).

The final main hindering factor was the financial difficulties schools face when implementing ICT in their practice. The financing source for schools is mainly the MoE; however, they receive donations from commercial bodies, such as companies and banks, as well as staff and student contributions. In the literature I did not find references to the financing of school development plans by means of staff and students' contributions. Moreover, lack of finance or financial difficulties are referred to in the literature indirectly, for example, as lack of hardware and software, poor quality hardware (Jones 2004), lack of



resources (Ensminger, Surry, Porter, & Wright 2004), and lack of financial support (Mumtaz 2000).

Apart from the hindering factors just noted, teachers mentioned some other ones which they felt to be important. These included a lack of maintenance and technical support, shortage of computers and other hardware, and a lack of learning resources, especially Arabic software. Jones ( 2004) stated that there are some barriers to ICT use that are strongly influenced by other key issues that can be considered barriers themselves. For example, lack of maintenance and technical support was considered by many teachers as a hindrance which has a direct effect on teachers' confidence as a result of their constant fear of technical breakdowns or failures. Wood and Mueller ( 2005) focused on the importance of external support offered to teachers because it plays a critical role in their comfortableness with computers. Teachers' lack of confidence can be resolved by the availability of reliable in-school or locally based technical support. This can assist in making teachers feel secure during their ICT use as technicians will make sure everything resumes normally and disruption is reduced. Ensminger et al. ( 2004) also emphasised the importance of full time technical support to assist in the process of ICT integration as well as its benefits to teachers through informal 'just-in-time' learning. The lack of appropriate material resources was also found in this study to be a hindrance to ICT use. Granger et al. ( 2002) found such lack inhibits learning and causes frustration and resistance among teachers. Jones ( 2004) also noted that inappropriate software does not enhance learning in any way. As well as the inappropriate learning resources participating teachers suffered from, they also experienced problems in finding suitable Arabic resources. Lack of such resources was considered a barrier for both the teacher and the student who is the target end user of these resources. Albirini ( 2006, p.385) emphasised the importance of developing software that "better suites the Arabic culture and identity."

Participating teachers pointed to a number of issues which can together lead to the design of a CD that suits the Saudi culture and education system. The CD should be most importantly, in the Arabic language and developed for use specifically in Saudi classrooms and compatible with the MoE curriculum. These are important issues since if they are not

considered, the teacher may consider the software unsuitable and decide not to use it or use it with some reservations which will reduce its benefits. For example, if a Maths CD is designed for year one students in Saudi schools, the designer of the software needs to be mindful of the fact that these students do not learn multiplication tables. A CD developed for a wide age range will include a diverse range of activities for different student years. The CD should use a culturally based stories related to Saudi folklore and Islamic history, and use Saudi characters, i.e. men dressed in white garments and kaffieh, and women wearing head scarves.

As has been mentioned earlier, teachers view ICT as a symbol of Western teaching practice. As a result of some conservative resistance to change, many teachers were reluctant to use ICT because they feared being influenced by Western ideology. ICT in general and the Internet in particular are seen as an access point for Westerners to attack Islamic culture and Arab identity and negatively influence youth. I believe that the dominance of the English language and the extensive presence of Western websites contributes to this misunderstanding. Although only a few teachers in this study mentioned this, it is still important and should be taken into consideration. Such very personal reasons for not using ICT are the hardest to tackle because as Jones ( 2004) has pointed out, it is the teachers themselves who need to bring about the required changes.

### **Supporting Factors, Incentives, and Motivators: Vocabulary Misuse**

In the process of data analysis, it was found that teachers used some terms interchangeably, such as "supporting factor", "incentive" and "motivator", and confused between "positive influence" and "reason" (for detailed information see sections 5.1 and 5.4.1). This meant that either they considered these terms were synonymous or they could not differentiate between them. Whatever the reason, if teachers cannot make a distinction between these terms this might impact on their practice. Teachers ICT use is a new introduction to their teaching routine and practice and they need different forms of motivation and incentives as well as supporting factors to initially use ICT and then carry on using it in their teaching. If teachers cannot recognise which factors support, assist, and encourage their ICT use then this will likely influence policy implementation at school level and at the MoE level.

Because failing to recognise factors which assist and support their ICT use will make policy makers' job difficult as they have to decide which factors have the most positive influence and which are not as influential as expected. By not collecting firsthand information from teachers about their ICT experience, policy makers might try different approaches, such as observation and using students' exam results as indicators, which might not yield reliable information. The importance of knowing the supporting and motivating factors arises from the fact that teachers are not always internally motivated, they sometimes need supporting factors or as Ormrod ( 2003) has labelled it, "situated motivation", which is found in the surrounding school environment. Motivation can have several effects on how teachers accept and interact with ICT, it can lead to increased effort and energy, lead to improved performance, and direct behaviour towards particular goals (Ibid).

There are several means by which teachers' motivation can be maintained. However, it is essential to know what types of motivator drive them, internal or external, because each type can be approached differently. One of the most effective ways of maintaining motivation is reward, which can be extrinsic, for example, praise or money; or intrinsic, such as sense of satisfaction and accomplishment.

Personally, I see the relationship between "motivators" and "incentives" as part of a three level hierarchy in which "inspiration" is at the top, then "motivators", followed by "incentives". Incentives come at the bottom of the hierarchy because they stimulate materialistic results through the expectation of tangible benefits, i.e. they are *"something, such as the fear of punishment or the expectation of reward, that induces action or motivates effort"*. In the middle come motivators which act as an intermediaries between inspiration and incentives because their role is *"to impart courage, inspiration, and resolution"* through the use of internal and external incentives, but with no expectation of tangible gains. Inspiration is at the top because it is a *"stimulation of the mind or emotions to a high level of feeling or activity"*, (The American Heritage Dictionary 2007). In the context of ICT use in education, some teachers will be inspired to use ICT without any need to provide them with incentives or motivators. Other teachers, however, will start using ICT as a result of offered incentives, and then having used it for a while will come to

appreciate the advantages it offers to the teaching and learning process. This moves them to be motivated to use ICT rather than be encouraged by incentives. However, in my view, it requires a great deal of belief in ICT to assist those willing teachers to move to the top of the hierarchy as inspired and inspirational teachers.

## **6.2 Teachers' Perceptions towards ICT Usage in Teaching**

In general, all participating teachers had positive views regarding the introduction of ICT in education. They emphasised these positive feelings through the wide range of adjectives they chose to describe their feelings towards ICT. The analysis of the adjectives and vocabulary they used indicated that teachers' positive feelings were closely related to the advantages and possibilities they believed ICT will offer for their teaching practice. Teachers in Demetriadis et al.'s ( 2003a) study were interested in using ICT to improve their professional profile and make use of all possible learning benefits ICT offers. Saudi teachers views revealed a relationship between ICT's usefulness and their positive feelings. This finding is not new to research in this field as Cox ( 2003) found that the perceived usefulness and ease of use of ICT will affect attitudes towards its use. Positive feelings towards ICT are very significant for educationalists because research shows that teachers who have positive attitudes towards ICT feel more comfortable in using it. In fact, they usually incorporate it in their teaching practice (Kersaint et al. 2003; Mumtaz 2000). Further, "teachers who have a high value for ICT and perceive it to be useful completely transform their teaching"(Mumtaz 2000, p.337).

The present study found that positive feelings towards ICT were expressed by teachers who were confident users of it; less confident users tended to have negative feelings as a result of their previous experiences with ICT. A noteworthy relationship has been reported between perceptions and level of confidence by Grainger & Tolhurst ( 2005) who found that teachers' attitudes towards ICT significantly affected their use of those technologies in the classroom. Apprehension, lack of confidence and competence, and phobia about ICT are main reasons for favouring traditional learning methods. Therefore, providing suitable and effective training for teachers that focuses on both ICT skills and their utilisation in teaching and developing competence, confidence and perceived ease of use of ICT is

predicted to result in more positive feelings towards it. Through this training, it is anticipated that teachers are likely to become more convinced of the value, usefulness, and importance of using ICT in their teaching. However, there are other factors that are important for the development of teachers' ICT competence and confidence, and hence, their positive feelings. These include, as this study's findings indicate, good access to ICT, availability of sufficient time, and reliable technical support. Dawes ( 1999) and Demetriadis et al. ( 2003a) have reported similar findings.

Teachers' perceptions and attitudes towards ICT have attracted increasing attention, as recent studies have shown that successful implementation of ICT depends to a large extent on the attitudes of teachers which basically determine their ICT use in the classroom (Albirini 2006). Moreover, teachers' perceptions have been found to be a major enabling/disabling factor in the process of ICT implementation (Ibid). In fact, Woodrow ( 1992) asserted that any successful change in educational practice requires the development of positive teacher attitudes towards the new technology.

### **6.3 Education Policy**

Education policy is formed and executed at two levels: the MoE level and the school level. The former is implemented nationally, and the latter locally/individually. Policies at the school level are usually MoE policies in an interpreted form, and are supplemented with new policies that fill in the gaps and add an extra dimension to ICT implementation in schools. Generally, teachers participating in this study favoured and were familiar with their schools' ICT policies rather than the MoEs' policies and asserted that their feelings and perceptions towards ICT were more influenced by their own school's policies than the MoE's. This can be attributed to the fact that school policies are especially tailored for a specific school whose current situation, staff perceptions, and students' abilities are known and taken into consideration when forming policies. Therefore, it is likely they will appeal more and better suit individual needs, whereas MoE policies provide general guidelines that all schools should build upon in their internal policies.

Although teachers favoured their school policies they still pointed to some problems related to them. School management must have a clear ICT policy alongside a practical implementation plan in order to utilise and integrate ICT successfully. This plan teachers emphasised should involve procedures and methods to facilitate management support of ICT use. In addition, school management should raise teachers' awareness of these policies, provide implementation plans and procedures and involve teachers in the process of policy formation and execution. Teachers' involvement in such process is likely to increase their acceptance and positively influence their perceptions towards ICT. Cox ( 2003) listed a number of factors that influence teachers' attitudes and behaviour, which included local education authority and school policies on using ICT. However, some teachers in this study stated that school policy alone is not enough for successful ICT implementation; teachers should have internal motivators or incentives that will assist them in maintaining their interest in good ICT use in their teaching.

Findings regarding MoE policy revealed that schools as well as teachers were not much influenced by MoE due to two main factors: first, low awareness of MoE policies in general and among school management and teachers in particular. Second, the difficulty in implementing policy procedures. Lack of awareness of MoE policies and difficulties in implementing policy procedures will impact on the teaching and the learning process because teachers will attempt to implement the MoE's ill-defined policies according to their understanding of them, resulting in wrong practice. Al-Mengash ( 2006) confirmed the finding of this study in her study which found that the lack of awareness of educational policies was one of several reasons for not applying the policies correctly, therefore not achieving their aims.

In the present study, three main deficiencies of MoE policies were identified; lack of financial support, guidance and supervision. Schools suffer from lack of financial support and policies are expected to be fully implemented without sufficient provision of hardware and software or continuous flow of finance. Further, schools do not have direct access to their budgets and are therefore not allowed to spend them on their particular needs, rather, they are provided with the hardware and software to initially introduce ICT and left to

manage the remaining phases of ICT implementation on their own. This leads to the interrelated second and third problems associated with MoE policy: lack of guidance and supervision. Unqualified and untrained school management staff are left with no informed guidance or supervision of how to deal with the processes of introducing and implementing ICT in their schools. The guidance required by teachers should involve offering detailed plans and procedures, continuous and reliable maintenance and technical support, and effective training. Guidance should be accompanied with supervision of the implementation process, teachers' practice, and further improvements that help in the evaluation process and improvement of policies to assist in maintaining equal learning opportunities for all students regardless of their school capabilities and facilities. Thus, the MoE should, as teachers advised, focus on three factors, i.e. financial support, guidance and supervision, to ensure even spread of ICT use in schools.

It is important to note here that Saudi ICT educational policy is formulated and produced by several governmental bodies, namely: the Department of Educational Planning, the Department of Curriculum Development, the Department of Educational Inspection, and the Computer and Information Centre. Each of these bodies work separately and does not cooperate with the other bodies responsible for policy formulation. Each one aims to be the regulator of issues related to ICT in education. The lack of coordination and cooperation between the aforementioned bodies has resulted in inconsistencies in policies, inadequate funds and scattered efforts and finances among agencies and bodies. The "Introducing ICT in Primary and Secondary Boys' Education" and "E-Learning for boys and girls" projects are good examples of this. The former is funded and supervised by the Department of Educational Inspection while the latter is affiliated to the Department of Educational Curriculum Development. Despite continuous efforts to merge those two projects together since they have identical aims and procedures, problems still exist and have not been solved as yet (Al-Saied 2006). The problem of lack of coordination could be solved by assigning to one governmental body responsibility for formulating and executing educational policy which will assist in uniting efforts and finances. These overseeing this new agency should be a mix of academics and educationalists in order to combine theory with practice to ensure the fruitful results promised from ICT use in education are realised. Tawalbeh (

2001, p.139) contended that "ICT effectiveness in education depends on the policies that ensure adequate levels of resourcing, such as the coordination of hardware and software; the employment of qualified personnel, and the provision of in-service training".

It would be beneficial if the new agency in charge of educational policy in general and ICT policy in particular took into consideration teachers' views on current ICT and training policy. As the policy executers and people in the field, if teachers were aware of MoE policies they would be more likely to be well informed about the application and implications of current policies and have a clear vision of ways to improve them. Teachers pointed out that the MoE role in teacher training is not as effective as it should be and there are variances between schools and among teachers. The pitfalls of the current policy include a lack of emphasis on teacher training before or during service and lack of training specifications (Al-Mengash 2006). Since the MoE manages all local education authorities and schools centrally, no school or education authority is able to launch an initiative, introduce a new policy, or finance a project without prior consent from the Ministry. Hence, head teachers are specifically guided and directed by the MoE as regards their managerial role, even their day-to-day activities, and the same applies to teachers who are used to being told what to do. The MoE should therefore require teachers to use ICT in their teaching practice, unlike the present situation in which teachers have the option to use it or not, and this would offer the basis for providing equal learning opportunities for students who will at least have the minimum advantages of ICT use. Then, since teachers will have to acquire ICT skills or improve their existing ones, their demands should be met by different training forms, for example, short and long ICT courses, general or specialised, held in MoE training centres and/or in-school training. Student teachers should also be trained during their undergraduate studies to use ICT. This training should include both ICT skills and pedagogical application of ICT in teaching. Currently, newly graduated Saudi teachers are trained to use ICT; however, their training concentrates only on ICT skills which, as British research has reported, is not sufficient to ensure good ICT use in education (Jones 2004).



## 6.4 Futures of Education

The future of education, according to teachers, looks promising. They believed that technology will spread in schools and homes and better and new hardware and specialised Arabic software will be produced. The teaching and learning process will be influenced by ICT; students will no longer have school bags, since curriculum change will include producing learning content on CDs, and assessment will be undertaken electronically in addition to assessment via class discussion and projects rather than exams. Educational policy will be fully executed using new strategies and procedures to assist in fulfilling policy aims. However, close inspection of teachers' views on the probable and preferable future of education revealed that although they had definite positive views of the future, their expectations were relatively humble especially when compared with other future scenarios. They only wished for comprehensive improvement of education, radical curriculum change, and continuous teacher training. This might have been due to the unsatisfactory current ICT situation in schools influencing their vision of the future so much that they felt there was such a huge gap between what they wished for and the likelihood of it happening. This is supported by the fact that most teachers interviewed saw a cumulative link between the past, present and future, that the present is built upon and all firmly based on the past and also influences the future. Haapala ( 2000) explained this cumulative link, stating, "most of what goes on in education draws on the past, is enacted in the present, but is intended for some future use". In my view, teachers' modest expectations and future wishes were the result of a constrained imagination due to the inability to detach themselves from the weight of the present reality. Teachers were not entirely satisfied with the current situation of education and when imagining the future they thought simultaneously about the plans and procedures required to bridge the gap between their preferable futures and the present reality, thus minimised their expectations to a reasonable achievable level based on their awareness of the current situation. Such modest expectation could pose a difficulty since, "without the ability to dream, to imagine events that have no concrete reality, there can be no creativity in general nor any possibility of creating the images of future goals that inform present experiences and give directions to current striving" (Cottle & Klineberg 1974, p.31).

The strong link teachers expressed between past, present, and future indicated their thinking to be more diachronic than episodic. According to Strawson ( 2004), diachronic thinkers see themselves as part of a 'narrative' linking past, present, and future. Episodic thinkers are more concerned with 'in the moment' experience and do not readily make connections with the past and future. People usually possess both of those qualities, but one more than the other, and in some situations one needs to respond episodically and in other situations diachronically. However, none of the 14 interviewees in this study revealed an episodic way of viewing time. In fact, all teachers expressed their future views using pronouns such as 'I', 'me', and 'we' which signalled their ability to project themselves forward in time to visualise the future. Teachers' diachronic thinking could also be associated with their humble future expectations since they related their past experience with their present situation to predict future change. And since most reported past experiences were relatively negative and the current situation was not that positive, this probably influenced their future views.

Moreover, analysing teachers' futuristic views one can see that preferable and probable futures were relatively the same, and they did not form a complete picture in which the relationship between different educational activities are clear. In other words, there was no scenario of the future that imagined a state of affairs which might one day come true (Newby 2005b). This may have been due, as Atance & O'Neill ( 2001) have pointed out, to individuals viewing distant future events at a more abstract level than immediate future events. However, teachers' future views were positive, which is especially important, because a clear and optimistic view of the future is necessary to be able to create the preferable future (Amara 1984). In addition, Hicks ( 2002b) indicated a dearth of positive images of the future whereas this study is different. Polak (1972, cited in Hicks 2002b, p.61) stated that " as long as society's image of the future is positive, its culture will blossom, but once the image begins to decay the culture will lose its vitality and decline".

### ***Changing Teacher Role***

Changing teacher role was one of the most anticipated changes in the future. Teachers in their own view will no longer be the source of information and dispensers of knowledge, they will become advisors, facilitators, and guiders of a more personalised student focused and shared educational process. A teacher will lose his/her pedagogical role of teaching and instructing, and totally change to enabler, manager, presenter, adviser, observer, challenger, respondent, evaluator, facilitator, guider, stimulator, provoker, creator of desire and excitement, and a participant. All of this means that the student becomes the centre of the educational process (Al-Qahtani 2006; Newton 1999), and the teacher will guide students through the learning process which will ultimately be self educating. Although teachers predicted change in their teaching role not one explained or gave an account of this process. Even in the literature relating to future teacher roles and educational change as far as I am concerned, the process of the teacher role developing from a lecturer to a facilitator and guider is not detailed, yet there is a call for extra training and professional development courses that will assist teachers in their transition (Ping Lim & Barnes 2002). In addition, Wheeler (2001) has suggested that teachers should develop new communication skills during the process of role change in order to fully execute their role and achieve educational aims and objectives. Such skills should include collaboration, cooperation, and being able to distinguish between reliable quality information and misinformation. Moreover, teachers, as noted earlier, not only acknowledged future change in their role, they also considered themselves a part of this future change. This can be seen from the way they described the future, and their stating that some changes were actually now starting to take place, and also from their use of sentences such as “I will step aside to leave more space for interaction” and “teachers will be guiders, for example, I will ....” This indicates they were visualising themselves in the future and not distancing themselves from it. This is important because teachers’ role changing process demands a great deal of motivation and willingness to change. A teacher who considers him/herself a part of the change will be motivated to undergo the process of change and actively engage with it, whereas one who distances him/herself by viewing the change but believing that it is not going to involve him/her will resist change.

Saudi teachers, like their counterparts in other studies (Gobbo & Girardi 2001; Higgins & Moseley 2001), believed in the promised benefits of ICT to their profession and they would no longer have to disseminate information in the form of lectures and textbooks. Rather, they will adopt the role of a manager of the learning environment, facilitator, tutor, and learner. Their role will be a creative, interesting, demanding, and professionally rewarding one (James 2001; Siegel 2002). In the Netherlands, teachers experienced a slow but steady change from teacher centred education to a more richly differentiated learning environment in which the role of the teacher is becoming more supportive, and the adoption of ICT in schools has stimulated this change (James 2001).

Although teachers in the present study anticipated a change in their own role, they were concerned about shrinkage in the pedagogic role in and out of the classroom. It is true that teachers need to be prepared to take less of a leading "presentational" role and view themselves more as "facilitators" of their students' learning, however, this does not mean teachers should leave students alone at the computers all the time. Indeed, this should not be the case, since even when students are able to acquire an infinite amount of data, they still need a good teacher to help them make sense of it all (Newby 2005c). Good teachers have always understood that they serve as role models and coaches in critical and creative thinking, in addition to their crucial role in directing and focusing students' attention as well as being organisers of information (Zepp 2005). In light of the above, it can be seen that teachers who are concerned about their changing role and worried about the decrease in their pedagogic role need to be educated about the extent of the changes and how they can be considered a development and improvement of their current role. Put more simply, the change will be in the effort put into teaching rather than in the teaching role itself, and teachers will therefore still be needed as tutors, facilitators, designers, interpreters, critics, and guiders. In this role, they will carry great moral, as well as intellectual responsibility (Newby 2005a).

Moreover, anticipated future change in teachers' role has cultural implications. Islam gives the teacher very high status, yet, it emphasises the importance of gaining knowledge and values critical thinking. The Prophet Mohammed always advised Muslims to seek

knowledge from the cradle to the grave. Islam pays considerable attention to teachers as they are the first brick in the structure of social development and perfection and the guides and developers of the behaviours and mentalities of individuals and communities. The Prophet cared about teachers and showed their elevated standing. He, peace be upon him, said, *"I have been sent as a teacher"*, which explains the prophet's encouragement of education and teaching. The Quran has many verses that invite man to use his intellect, to ponder, to think and to know, because the goal of human life is to discover the Truth. The Prophet's sayings are full of references to the importance of knowledge, such as *"Seek knowledge, even in China"* and *"Verily the men of knowledge are the inheritors of the prophets"*, all of which indicate the importance of seeking knowledge wherever it might be found.

Knowledge in Islam is not limited to religious related issues and worshipping God, in fact, it covers almost all sciences known to people as knowledge in all its forms will lead to the Truth, that is, the Oneness of God. The Holy Quran is full of scientific facts that are compatible with modern science, for example, we can read about the Big Bang, the expansion of the universe, the Big Crunch, the magnetic columns that hold the universe together, atom, pulsar, black hole, supernova, Solar Apex, rotation of the earth, death of the sun and other stars, the relativity of time, the internal waves deep in the sea, the shape of the earth, the nature of the clouds, the emergence of the mountains, and the development of the embryo and fetus in the womb(embryology) (Abd Al-Shafy 2007). The Holy Quran not only encourages the seeking of knowledge through science and observation *"Say: Travel in the earth and see how He makes the first creation, then Allah creates the latter creation; surely Allah has power over all things"* (Al-Ankaboot 29:20) (Holy Quran 2009). It also promotes high order critical thinking, logic, rational thinking, reflection, reasoning and meditation. The Holy Quran calls upon Muslims to reflect on natural phenomena since through doing so, they will come to understand the power and glory of the creator: *"Behold! In the creation of the heavens and the earth, and the alternation of night and day, there are indeed Signs for men of understanding: Those who remember Allah standing and sitting and lying on their sides and reflect on the creation of the heavens and the earth: Our Lord! Thou hast not created this in vain! Glory be to Thee; save us then from the*

*chastisement of the fire” (Ale-Imran, 3: 190,191). Another verses says “Will they not then consider the camels, how they are created?, And at the Sky, how it is raised high?, And the mountains, how they are firmly fixed, And at the Earth, how it is spread out?” (Al-Ghashiya 88:18, 19, 20, 21). Another verse similarly says “Most surely in the creation of the heavens and the earth and the alternation of the night and the day, and the ships that run in the sea with that which profits men, and the water that Allah sends down from the cloud, then gives life with it to the earth after its death and spreads in it all (kinds of) animals, and the changing of the winds and the clouds made subservient between the heaven and the earth, there are signs for a people who understand” (Al-Baqara 2:164) (Holy Quran 2009).*

Therefore, understanding the importance of knowledge, higher order thinking skills, science and observation in Islam, a Muslim teacher should have no worries about future changes in his/her role. The teacher who previously used to be the source of information and knowledge will be a guider to its origins, since new technologies allow easy access to information. And s/he will focus on developing and encouraging other important learning skills, such as critical thinking, reasoning, and reflection which are also praised in Islam. In my view, the future Muslim teacher will not lose his/her highly respectful status, on the contrary, his/her status will gain more importance as s/he will start creating a learning environment that encourages dialogues environment which Muslim students are not used to it. An environment that encourages dialogue and free thinking within the larger boundaries of Islam, a practice that has been undermined for a long time, for, in my opinion, cultural rather than religious reasons. Teachers in Arab cultures are highly respected and students usually do not question information given by them as they view teachers as people who know better. However, a close unbiased examination of the Holy Quran shows a number of incidents in which free thinking and reasoning are praised and accepted, such as when Abraham said: *"Show me, Lord, how You will raise the dead. "* He replied: *"Have you no faith?"* He said *"Yes, but just to reassure my heart."* Allah said, *"Take four birds, draw them to you, and cut their bodies to pieces. Scatter them over the mountain-tops, then call them back. They will come swiftly to you. Know that Allah is Mighty, Wise."* (Al-Baqara 2:260) (Holy Quran 2009). From this verse it can be seen that one of God Almighty's prophets was allowed to question him on the basics of faith and revival and God accepted

such questioning and responded to it. Accordingly, there are no questions which cannot be raised. Enquiring is acceptable and should be encouraged in the teaching and learning process. Another incident shows Prophet Abraham practicing constructive thinking to reach a conclusion that satisfies his inquiring mind *“So also did We show Abraham the power and the laws of the heavens and the earth, that he might (with understanding) have certitude, When the night covered him over, He saw a star: He said: "This is my Lord." But when it set, He said: "I love not those that set", when he saw the moon rising in splendour, he said: "This is my Lord." But when the moon set, He said: "unless my Lord guide me, I shall surely be among those who go astray", When he saw the sun rising in splendour, he said: "This is my Lord; this is the greatest (of all)." But when the sun set, he said: "O my people! I am indeed free from your (guilt) of giving partners to Allah” (Al-Anaam 6:75, 76, 77, 78) (Holy Quran 2009).*

The foregoing is important for two reasons: first, it creates the backbone and theoretical framework on which future MoE policies in general and ICT policies in particular should be based, because it is deeply situated within the culture and it links new sciences and technologies to Islam. Second, the framework drawn from the discussion can be used as an incentive for Muslim teachers to use ICT in their teaching as it enables them to see the link between new pedagogical practices and Islam in view of the latter's support for constructive thinking. Finding links between Islamic teachings based on the guidelines found in the Quran and the Prophet Mohammed's sayings is likely to assist in demolishing traditional educational practice which has resulted in generations of young people acquiring information which they cannot utilise, put into context, or even recall when needed; in other words, generations with restricted abilities and mentalities and lacking creativity (Al-Ghamdi 2007).

## **Chapter Seven: Conclusion and Recommendations**

### **7.1 Summary of the Research and Main Findings**

This study aimed to gain a deeper understanding of the use of ICT in secondary schools in Riyadh City, Saudi Arabia. It investigated a number of issues closely related to each other to facilitate not only a better understanding of the current situation of ICT usage but also to obtain detailed information concerning issues that contribute to the formation of the greater picture. The study's aims were:

- To look at teachers' current usage of ICT in the classroom and their perceptions towards this usage
- To investigate the impact of educational policy on teachers' use of ICT in their teaching and their feelings about ICT in education
- To explore teachers' views on probable / preferable future utilisation of ICT in education

In order to pursue these aims, the following research questions were formulated, which the research sought to address:

1. How are teachers currently using ICT in their teaching?
  - 1.5 Why are they using ICT in their teaching?
  - 1.6 What are the supporting influences on ICT usage?
  - 1.7 What are the motivators and incentives for using ICT in teaching?
  - 1.8 What hinders teachers' usage of ICT in teaching?
2. How do they feel about this usage?
3. How is educational policy reflected in:
  - 3.1 Teachers' use of ICT in their teaching?
  - 3.2 Their feelings about ICT in education?
4. What are teachers' views on probable / preferable future usage of ICT in education?

The research's methodology designed to answer the research questions combined two successive stages. The first consisted of interviews which were analysed using grounded theory constant comparison analysis, and the emerging themes were used to design the data collection tool for the next stage of the research, i.e. the questionnaire. A total of ten



secondary schools (5 boys', 5 girls') participated in this study, from which 14 interviews were drawn, who included head teacher, classroom teachers, and ICT coordinators. Of the 300 questionnaires distributed to participating schools, 266 were successfully completed and collected.

The study findings managed to answer all the research questions and fulfill the aims and objectives of the research. The study found that increasing numbers of teachers were using ICT in their teaching and had very positive views of its use in education. Many reasons were given for teachers' ICT use, however, the most frequently mentioned ones were: because the use of ICT can change class routine and keep boredom at bay; its extensive capabilities in presenting information in several forms, and ICT can assist in time and effort saving. In addition to using ICT in teaching, teachers used it for maintaining continuous communication with students via electronic mail, bulletin boards, mail groups, and in some instances through teachers' personal websites.

Teachers' ICT use encountered many supporting and motivating factors as well as hindrances. Internal factors, such as teachers' belief in the benefits of ICT use for the teaching and learning process, were found more influential on their use than external factors. However, that does not undermine the importance of external factors, it simply highlights the importance of considering internal and external factors when planning to introduce and implement ICT in a school. The most important supporting and motivating factors mentioned included the availability of time and training. Interestingly, their lack was considered a hindrance to ICT use. Issues related to time constraints, training, and finance were found to be the most frequently mentioned hindering factors. To overcome them, teachers' work load should be lessened and their teaching duties and other managerial roles should be reduced to help them concentrate on their teaching practice and free up more time for them to experiment with ICT before using it in their classroom. Moreover, teachers' ICT use should be supported by providing suitable and effective training that focuses equally on teaching basic ICT skills as well as training in applying ICT in teaching in order to develop competence and confidence in using ICT since positive feelings towards ICT were found to be associated with teachers who considered themselves

to possess good ICT skills, while less confident teachers reported negative feelings. It is therefore likely that training will improve teachers' skills as well as enhance their positive feelings. Moreover, training will assist teachers in incorporating ICT in more creative ways rather than mostly using it, as found in this study, as a supplement to the curriculum and continuing to deliver lessons using traditional teaching methods.

Teachers pointed out that the most professionally developed ICT resources and well recognised educational websites are in the English language, which language most Saudi teachers do not speak or understand, and this is a hindrance to ICT use. Therefore, they wished for more quality ICT educational resources produced in the Arabic language and the English language taught throughout the twelve years of education to enable both teachers and students to make use of available resources in Arabic and English. School policy was found to be a very important supporting factor however, teachers emphasised that it should be combined with teachers' internal incentives to form a supporting factor for ICT use.

This leads us to talk about this study's findings with regard to educational policy. A low level of awareness of MoE policies was found among teachers which, in my view, is very worrying since how are teachers to fulfil the aims and objectives of those policies without being fully aware of them? Even policies known to teachers were misunderstood because of poor explanation which resulted in poor application of them. As a result of the secondary role that MoE policy plays in teachers' view, the school policy was considered more influential and created more positive feelings than the MoE policy, especially when backed up with clear vision and good management. However, schools are being influenced by MoE policies in different ways and face difficulties in implementing them. Therefore, the MoE should play a greater role in enforcing its policies in schools and have a clear vision of the policy formulation stage through to the implementation stage in order for schools and students to gain the benefits promised from those policies. Simply providing ICT in schools is not enough, the MoE also has to plan to overcome financial problems and offer guidance and supervision to schools during the implementation phase to ensure their policies are practised. Furthermore, MoE policy makers should consider hindrances as well as supporting factors identified by teachers when formulating policies to either eradicate or

promote ICT use. For example, training was mentioned as a major supporting factor for teachers' ICT use; therefore, the MoE should provide flexible and continuous training and professional development programmes for current teachers and focus on training student teachers in ICT application in education rather than train them in ICT skills.

As has been noted earlier, teachers reported very positive perceptions towards ICT, despite different limitations regarding its implementation in schools. These feelings were closely related, as they explained, to the advantages and possibilities they believed ICT will offer their teaching practice. And the more they were aware of these advantages of ICT the more positive feelings they had, therefore, linking this back to the policy theme of this study, it is important to show teachers what tangible results they can expect from utilising ICT in their teaching and present successful experiences of other teachers to further improve their positive perceptions. It is essential for policy makers to sustain and promote teachers' positive feelings in order to facilitate the benefits of their ICT initiatives because positive perceptions towards ICT are usually a forerunner of future confident use of the computer and make the process of preparing and training teachers to use ICT much easier. Policy makers can make use of teachers' positive attitudes toward ICT to better prepare them for incorporating it in their teaching practice.

Positive feelings towards ICT are also important for a positive view of the future of education. In this study, teachers' positive feelings resulted in a very positive view of the future. Teachers anticipated widespread ICT use in schools and many of the hindrances that were presenting holding back their ICT use would be overcome. Teachers viewed a change in their role from being the source of knowledge and information to that of facilitator, advisor, and guider of more personalised student learning and a shared learning process. In brief, teachers hoped for comprehensive improvement of education, radical changes to the curriculum, and continuous teacher training.

## **7.2 Strengths and Limitations of the Study**

### **7.2.1 Strengths**

Only a few studies on ICT use have been carried out in Saudi Arabia. This study therefore contributes to this growing body of work. The main strength of the current study is that it is the first local study that provides findings from well designed implemented research on teachers' ICT use and perceptions towards this usage as well as their views on the future of education which can be used to inform present and future educational policy. The study has also yielded up-to-date information on teachers' perceptions of the use of ICT in the classroom as well as identified those factors supporting and hindering of this use, which all add to the limited literature on ICT use in Saudi secondary schools. This information will inform education planners in Saudi Arabia of the current perceptions of secondary school teachers, has several implications for the professional development of teachers, and reveals several control factors that need to be asserted to encourage teachers to use ICT in teaching.

Two hundred and sixty-six teachers from ten secondary schools participated in this study's questionnaire and 14 teachers were interviewed, which is considered an adequate sample size to create confidence in the reliability of the results. More importantly, the study included male and female teachers and this has several implications for the quality of the study. First, as far as the researcher is aware, very few Saudi based studies have addressed male and female ICT related issues in the same study, due to the difficulties faced by any researcher wishing to access opposite gender schools. The fact that this study was able to fill this gap in research activities in Saudi Arabia is a huge achievement and contributes to the strength of this research. Second, including male and female teachers in the study positively influenced the interpretation of findings and assisted a better understanding of Saudi teachers' usage of ICT, perceptions towards it, and future views of education. Exploring one side of the story, i.e. the female, and leaving out the male, would have ultimately weakened claims that the study's findings could be considered representative of teachers' usage of ICT in general since, the findings would have been confined to and representative only of female teachers' usage of ICT, perceptions, and future views. Moreover, since the researcher was part of the culture in which this study took place, this is another strength of the study since she was fully aware and could comprehensively

understand the interaction between research participants and their environments and interpret them within the context in which they occurred.

Another strength of the study was its ability to adapt various data collection instruments, i.e. interviews and questionnaires, and developed them for this research to better suit the Saudi context and hence reflects actual local teachers' ICT usage, perceptions, and future views. Moreover, although this study was dependent mostly on Western based literature in both the review of related research and interpretation of findings, it confirmed that similar patterns of ICT usage, perceptions, and supporting and hindering factors exist in Saudi schools as in other countries, although there are also some important differences.

### **7.2.2 Limitations**

The study was geographically limited to Saudi secondary schools in Riyadh City and conducted by a postgraduate student, who had limited time and resources compared to those that a full time researcher might enjoy. Data were collected for this study through the use of interviews and questionnaires. If there had been time and resources available to extend the study to rural areas or other cities it would have been possible to obtain in-depth information to augment the current results and to ascertain whether the study's results were generalisable across the country or were specific to the teachers working at the ten schools which participated in the study. However, given the constraints of time and resources available for the study, it was considered essential to select only Riyadh City instead of drawing a sample from schools in other cities and towns, because such strategy would have necessitated a lot more travel and involved greater cost in terms of time and money, which is not available for small studies such as this one.

In addition, the study could have been usefully expanded to cover students' vision of the future of education, and the differences between teachers' and students' views could have been examined. Moreover, a comparison between teachers' and students' visions might have assisted in creating the preferable future scenario which policy makers should consider when formulating policies in order to achieve such scenario.

### **7.3 Implications and Recommendations for Further Research**

In view of the findings derived from this study and the conclusions arising from them, the following recommendations for policy and practice are presented. They are mainly related to strategies that can be implemented by policy makers to ensure the success of ICT usage in education.

- The MoE should raise awareness of its educational policy in general and ICT policy in particular among educationalists who in this study reported low awareness levels. This can be achieved by distributing the Educational Policy Document to schools and asking teachers, head teachers, and supervisors to work towards fulfilling its aims and objectives and report any difficulties that face them together with their own recommendations for resolving them.
- The MoE should combine its efforts and resources to achieve maximum results by appointing one governmental agency to be responsible for ICT policy formulation, implementation, and evaluation, instead of scattering resources and efforts as is currently happening between several agencies.
- The MoE should use a range of methods to encourage teachers to use ICT in their teaching to ensure equal learning opportunities for all students.
- The MoE should give schools more authority and freedom to manage and run themselves and that includes financial matters.
- This study identified a need for more training opportunities. Hence, the MoE should ensure that all teachers receive adequate training. Training should not merely focus on basic ICT skills but should also present methods for integrating ICT in teaching and learning. In addition, training should be in the form of continuous professional development courses with flexible training hours as well as in-school training. The MoE should make use of ICT teachers in schools and assign teacher training responsibilities to them. ICT teachers should therefore be offered school training courses that are especially tailored to meet the needs of the school and its teachers. Teachers should also receive ongoing training as they master previously learned skills and will therefrom feel more confident. Through school training ICT teachers can ensure that teachers are practising

what they have learned during training courses and can offer advice to teachers on how to implement and integrate ICT in their teaching.

- In this study, time constraints were considered a major hindrance to ICT use, therefore, policy makers in the MoE should provide additional planning time for teachers to experiment with their new ICT skills, design methods to integrate ICT in their teaching, and prepare materials for use during lessons. The additional time can be generated from decreasing the managerial workload of teachers to release more time for learning, training, and planning ICT use in teaching.
- The availability of reliable maintenance and technical support was considered an important supporting factor and its absence was regarded as a hindrance to ICT use. To promote more ICT usage, the MoE should provide locally based and in-school maintenance and technical support to assure teachers during their lessons that their flow will not be interrupted when a technical problem arises.
- Training and technical support issues can be resolved by decentralising the process of teacher training. By preparing ICT teachers in each school with suitable and required skills to train and support their colleagues it is likely that more teachers will be committed to that sort of training as a result of its convenience and long run. Moreover, school management will be more cooperative in terms of releasing time for ICT teachers to attend training courses run by the MoE during school days, since it is easier to reallocate a few ICT lessons than rescheduling the whole timetable due to the number of subject teachers attending these training courses.
- Teachers expressed their need for professionally developed software and programs in the Arabic language. MoE policy makers should spare no effort or time to address this issue by allocating adequate funding for the creation and development of software that is suitable for the Arab culture and, most importantly, fulfills the aims and objectives of the curriculum.
- School ICT resources should be enriched with specifically designed software that suits the Arab culture and identity. The software should be in standard Arabic language and based on the MoE national curriculum. It is important to ensure that it is based on the curriculum and shares its general guidelines but is not a replicate of it. It should also take into consideration cultural issues, such as dressing characters in traditional clothes i.e.

long robes for men and head scarves for women. Voices used in the software should not only be those of Arabic native speakers, they should be Saudi voices as the accent is evident even when using standard Arabic language. Although it has been suggested earlier that the software should use stories from Islamic history and Saudi folklore, it is important to avoid areas of conflict such as explaining the theory of natural selection which is opposed to Islamic thought and principles, and presenting drawings of the Prophet Mohammed and his companions, which some Islamic schools have reservations about, in order to avoid offending any possible users of the software. Moreover, Saudi educational practice has for a long time been based on instruction and memorisation and students rarely practise high order thinking skills based on query, analysis, and synthesis of new information. It is therefore recommended that software developers take this into consideration and ensure concepts are explained using multiple examples to widen students' horizons and encourage them to think freely.

Research studies often generate issues that are of further interest to researchers. As a result of the present study, future studies can build on its results to enrich existing knowledge in the area of ICT, and ideas for further research have also emerged. It is clear from this research and others that the use of ICT in education is developing rapidly. The research approach to this development needs to be expanded. A study using observation techniques combined with other methods, such as interviews, could provide deeper insight into teachers' usage of ICT in teaching as well as obtain first hand information regarding factors supporting and hindering their usage and evaluate the extent of their influence on teachers' ICT use. Moreover, I personally believe in the importance of interviewing policy makers to investigate their views on the current status of ICT use in schools and procedures taken to promote supporting factors and reduce the effect of hindrances. Comparing their visions of the future of education with those of teachers would reveal interesting comparisons and assist in bridging the gap between policies and preferable futures.

This study was conducted in the city of Riyadh, the capital of the Saudi kingdom. There are forty-one other educational districts in Saudi Arabia and these need to be researched. When conducting a study like the present one, rural and urban areas and all social classes could be



included to confirm its findings and provide a fuller picture of teachers' current ICT use, perceptions and views.

The researcher hopes that this study will encourage other researchers to conduct follow-up research in the field of ICT in education. Teacher ICT usage is still in its early stages of implementation and further research should therefore be encouraged and welcomed.

## **7.4 Conclusion**

This study researched issues related to Saudi secondary school teachers' use, perceptions, and future views of ICT in education and its relation to education policy. In addition to all the major findings of this study discussed previously there are two very important outcomes highlight. The first is related to the fact that the researcher has worked for several years in a western tradition but for this research has framed and situated her work in a Saudi context; her native country. This has been done with the use of both Western and Saudi based literature resulting in a study that combines both of them, and recognises the different contributions both make. The entire study worked on bringing these two worldviews together using a mutually comprehensive framework. To achieve this the researcher exercised cultural synthesis to show how western literature could help frame such a study, and how the context of the study in Saudi Arabia reflects back on the literature from which the framing is being derived. Therefore, it is a two way process in which the Western and Saudi literature and the two world views mutually inform each other. Throughout the study these Western and Saudi influences are constantly re-assessed and integrated into the study setting, which is important in ensuring the study outcomes are appropriately balanced and interpreted, and hence significantly enhance the comprehensiveness of the study.

The second is related to the link between the present and the future. The study highlights the importance of learning from teachers' current practices and listening to their views. It is therefore felt to be important that the MoE policy makers, as they have the ultimate power to shape and influence the educational scene, should take into consideration teachers' views, and involve them in the process of policy formulation. This relationship, based on dialogue between MoE and teachers, is practiced and reflected in western studies, but is not the case at present in Saudi Arabia. By promoting dialogue and interaction between MoE

and teachers it is likely to ensure that educational policies match educational needs and are capable of taking education in Saudi forward and so better serve the needs of the knowledge society.

## **Appendices**

## **Appendix 1: Interviews Introductory Letter – English Version**

**Dear Teacher**

Peace be upon you and God's mercy and blessings.

First of all I would like to thank you for your kindness and willingness to participate in this doctoral research on “Educational Policy in Saudi Arabia and its relation to Secondary School Teachers’ ICT Use, Perceptions, and Views of the Future of ICT in Education”. This study aims to gain a better understanding of educational policy and its relation to teachers’ current ICT use and their feelings towards it as well as identifying the enablers and hindrances of ICT use. In addition it asks for their envision of the future.

As an orientation to the interview I would like to introduce you to the topics that will be discussed. The interview contains three main parts. The first part discusses the current use of ICT in education and the changes on teaching as a result of ICT use. It also aims to introduce the enabling and hindering factors of competent ICT use in education. The second part discusses the impact of educational policy on teachers’ ICT use. Educational policy in this instance means formal policies from the Ministry of Education. The third part discusses future education. This term describes two types of future; the first the probable future that you expect to happen on the basis of the current situation, and the second is the preferred future which is the ideal future that you would like to happen, though it might not be easy to achieve and the means may not be available. Full understanding of these topics is very important to achieve the aims of this research, one of which is to help guide the development of future ICT educational policy.

Thank you very much for your cooperation

**Afnan Oyaid**

**University of Exeter - UK**

## Appendix 2: Interviews Introductory Letter - Arabic Version

بسم الله الرحمن الرحيم

أختي المربية الفاضلة

السلام عليكم ورحمة الله وبركاته

بادئ ذي بدء أشكر لك تلافك وتفضلك بالمشاركة في هذا البحث المكمل لرسالة الدكتوراه بعنوان (استخدام الحاسب الآلي في التعليم من قبل معلمي المرحلة الثانوية واتجاهاتهم ورؤاهم المستقبلية و علاقة ذلك بالسياسة التعليمية ) والذي يهدف إلى التعرف على كيفية استخدام الحاسب الآلي في التعليم من قبل معلمات المرحلة الثانوية وشعورهم تجاه هذا الاستخدام والتعرف على محفزات كما معوقات استخدامه بالإضافة إلى التعرف على رؤاهم المستقبلية لاستخدام الحاسب وعلاقة ذلك كله بالسياسة التعليمية.

وكتمهيد وتهئة للمقابلة أود تعريفك بما سوف تحتويه من عناصر ستتم مناقشتها . المقابلة تحتوي على ثلاث محاور رئيسة المحور الأول يتعلق بالاستخدام الحالي للحاسب الآلي في التعليم والتعرف على التغيرات التي طرأت على عملية التدريس والتعليم كنتيجة لاستخدام الحاسب ويهدف أيضاً إلى التعرف على العوامل المحفزة والمساعدة على استخدامه والعوامل المعيقة عن الاستخدام الأمثل للحاسب في التعليم . في حين أن المحور الثاني يبحث تأثير السياسة التعليمية على استخدام المعلمة للحاسب الآلي . ويقصد هنا بالسياسة التعليمية السياسة الموجهة من قبل وزارة التربية والتعليم والمقننة بنظم وضوابط وتوجيهات وصادر عنها تعاميم إدارية . أما المحور الثالث والأخير فيتعلق بمستقبلات التعليم وهذا المصطلح يطلق على نوعين من المستقبل أولهما المستقبل الذي نتوقع حدوثه بناء على المعطيات والأوضاع من حولنا أما الثاني فهو المستقبل الذي نرغب ونود معاشته وهو الصورة النموذجية التي نطمح لها بالرغم من أن السبل قد لا تكون متيسرة للوصول لهذا الوضع . إن المعرفة الدقيقة لهذه المحاور لهو أمر مهم للتوصل وتحقيق أحد أهداف هذا البحث العلمي وهو مساعدة توجيه سياسات التعليم المستقبلية المتعلقة باستخدام الحاسب الآلي في التعليم.

هذا ونسأل الله العلي القدير أن ينفعنا والمسلمين بما علمنا وأن يجعله حجة لنا لا علينا

وجزاك الله خيراً على تعاونك

أختك الباحثة

أفنان بنت عبدالرحمن العبيد

جامعة أكستر – بريطانيا

بسم الله الرحمن الرحيم

أخي المربي الفاضل

السلام عليكم ورحمة الله وبركاته

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وجزاك الله خيراً على تعاونك

الباحثة

أفنان بنت عبدالرحمن العبيد

جامعة اكستر – بريطانيا

### **Appendix 3: Interview Schedule - English Version**

The interview will last for 45 minutes, it will be divided into three parts, each part will last 15 minutes. The interview will cover the research's three main themes. The First few minutes of each interview will be devoted to:

1. Introducing the purpose of the study and the researcher.
2. Emphasising confidentiality and data protection. The researcher who is from Exeter University and all others involved in this research will assure all participants of total confidentiality of information elicited, including complete protection of any information gathered, which will be used for research purposes only. Each interviewee will receive a letter explaining the importance of this research to the field of education in Saudi Arabia, and introducing the topics to be covered during the interview to give interviewees time to think about them in order to offer well thought out answers. It will also state that participation is voluntary and informants will remain anonymous.
3. Obtaining the candidate's agreement to participate in the study.

Interviewer:     **Afnan**

Interviewee:     No:

Location:

Date:

Time:

**Information about interviewee:**

**Gender:**

**Qualification (Saudi qualification names may be used):**

- |                                   |                      |
|-----------------------------------|----------------------|
| 1. Teacher College Degree         | 2. University Degree |
| 3. Higher degree (M.Sc, Med, PhD) | 4. Other.....        |

## **Part One: Teachers' use and perceptions of ICT**

1. What do you think about the introduction of ICT in schools?
2. How are you currently using ICT in your teaching?
3. To which category do you consider your ICT usage belongs?
  - d) Using ICT as a supplement to the curriculum
  - e) Using ICT as a reinforcement of the curriculum
  - f) Using ICT as a facilitator for an emerging curriculum
4. Why are you (not) using ICT in your teaching?
  - What drives you to use ICT in teaching?
  - Are you self motivated to use ICT in teaching or is it a response to school leadership tropism?
5. As the outcome of the introduction of ICT, in what ways have you adapted your teaching methods?
6. What changes have taken place to accommodate the introduction of ICT in your school?
7. What further changes have been as a result of introducing ICT?
8. What do you perceive to be the usefulness of using ICT in teaching?
9. What incentives are there in relation to using ICT in teaching?
  - Which are internal and which are external?
10. What do you think hinders your use of ICT in teaching?
  - Is there an issue in relation to hardware
  - Is there an issue in relation to time
  - Is there an issue in relation to access/organisation of computers
  - Do you have personal access to ICT both at school and home?
  - Is there an issue in relation to ICT resources
11. What are the influences supporting ICT usage?
  - Do you consider training (pedagogical and skills) as a factor supporting ICT use?  
How?
  - What would you like to learn more about
    - a. Technical skills



- b. Application of ICT in teaching
- c. Management skills
- d. ICT skills

12. How would you describe the maintenance available in your school?
13. How would you describe the technical support available in your school?
14. How is the whole school involved in and supportive of using ICT in teaching?
15. How does ICT use make you feel?
  - How do you feel during the time you are using ICT?
  - How do you feel during the lessons you give using ICT?
  - How do you feel about the teaching and learning experience using ICT?

## **Part Two: Impact of educational policy on teachers' ICT use**

16. Is the use of ICT in your school a result of school policy or influenced by Ministry of Education policy?
17. How do you interpret Ministry of Education ICT policy?
18. Do you consider the Ministry's ICT policy originates from a national strategy for ICT or a national strategy for education?
19. What do you see as the objective of this policy?
20. From your experience, how does the Ministry of Education raise awareness among teachers of its ICT policy?
21. As a policy executer, do you receive guidance on ICT usage in teaching?
22. How is educational policy reflected in your use of ICT in teaching?
23. How do you feel about ICT educational policy?

## **Part Three: Future of education**

24. Based on the current situation, how do you see ICT being used in secondary schools in the future? In terms of
  - Hardware
  - Software
  - Connection
  - Access

- Learning place
- Usage in Education

25. How is this change going to affect

- Learning objectives
- Assessment
- Teacher's role
- Pedagogy

26. What would you like to see in your classroom in the next ten years?

27. How will the teaching profession be influenced by these changes?

28. Are these changes limited to the education system or are they part of a whole change in all aspects of life?

29. How do you perceive the relationship between the past, present, and future?

## Appendix 4: Interviews Schedule - Arabic Version

### أسئلة مقابلات المعلمين

اسم المحاور:  
اسم المتحاور معه:  
المكان:  
التاريخ:  
الوقت:  
معلومات عن المتحاور معه:  
المؤهلات:

رقمه:

1. بكالوريوس كليات معلمين أو كليات البنات

2. شهادة جامعية

3. دراسات عليا (دبلوم عالي – ماجستير – دكتوراه)

### الجزء الأول: استخدام المعلم للحاسب الآلي واتجاهاته نحوه

1. ما رأيك بإدخال الحاسب الآلي للمدارس؟
2. حالياً كيف تستخدم الحاسب في تدريسك؟
3. إلى أي مجموعة تعتقد أن استخدامك للحاسب الآلي في التعليم يندرج
  - a) استخدام الحاسب كإضافة وملحق للمنهج
  - b) استخدام الحاسب كتعزيز للمنهج
  - c) استخدام الحاسب كمهيء لمنهج متغير
4. لماذا تستخدم (لا تستخدم) الحاسب الآلي في تدريسك؟
  - ماذا يدفعك لاستخدام الحاسب الآلي في تدريسك؟
  - هل تستخدم الحاسب الآلي كاستجابة لدافع وحافز داخلي أم تحت تأثير توجيهات إدارة المدرسة؟
5. هل تأثرت أو تغيرت طرق تدريسك كنتيجة لاستخدامك للحاسب الآلي في التعليم؟ كيف؟
6. ماهي التغييرات التي حدثت في المدرسة للتهيئة لإدخال الحاسب الآلي في التعليم؟
7. بعد المرحلة الأولية لإدخال الحاسب الآلي في التعليم هل حدثت أي تغييرات أخرى في المدرسة للمساهمة في نجاح استخدام الحاسب؟
8. برأيك ماهي الفوائد المدركة لاستخدام الحاسب الآلي في التعليم؟
9. ماهي المحفزات على استخدام الحاسب الآلي في التعليم؟
  - أيها محفزات داخلية و أيها محفزات خارجية؟
10. ماذا تعتقد أنه يعيق استخدامك للحاسب الآلي في تدريسك؟
  - هل هناك إشكال يتعلق بالمعدات (حواسيب و آلات طباعة وخلافه)
  - هل هناك إشكال يتعلق بالوقت

- هل هناك إشكال يتعلق بإمكانية الوصول والاستخدام للحاسب / توزيع الحواسيب في المدرسة
- هل لديك إمكانية وصول شخصي لحاسب آلي في المدرسة والمنزل؟
- هل هناك إشكال يتعلق بمصادر تعلم الحاسب الآلي
- 11. برأيك ماهي العوامل المحفزة لاستخدام الحاسب الآلي؟
- هل تعتقد أن التدريب سواء على اكتساب مهارات استخدام الحاسب الآلي أو على مهارات دمج استخدامه في التعليم على أسس تربوية تعليمية أنه عامل محفز و ميسر لاستخدام الحاسب الآلي؟ كيف؟
- عن ماذا تريد أن تتعلم و أن تكتسب مهارات أكثر
- (a) مهارات استخدام الحاسب الآلي كجهاز
- (b) مهارات تطبيق استخدامات الحاسب الآلي في ال تعليم
- (c) مهارات متعلقة بإدارة الفصل والطلاب والوقت أثناء استخدام الحاسب الآلي
- (d) مهارات تقنية في استخدام الحاسب الآلي
- 12. كيف تصف الصيانة المتوفرة في مدرستك؟
- 13. كيف تصف خدمات الدعم المتوفرة في مدرستك؟
- 14. كيف تصف تفاعل المدرسة لئكل ودعمها لاستخدام الحاسب الآلي في التعليم؟
- 15. كيف تشعر تجاه استخدام الحاسب الآلي في التعليم؟
- صف شعورك خلال الوقت الذي تمضيه مستخدماً الحاسب الآلي؟
- صف شعورك خلال الدرس الذي تشرحه باستخدام الحاسب الآلي؟
- كيف تصف التجربة التعليمية المستخدم فيها الحاسب الآلي؟
- الجزء الثاني: تأثير السياسة التعليمية على استخدام المعلم للحاسب الآلي**
- 16. هل استخدام الحاسب الآلي في مدرستك نتيجة لسياسة المدرسة أو أنها متأثرة بسياسة وزارة التربية والتعليم المتعلقة بالحاسب الآلي؟
- 17. كيف تفهم سياسة وزارة التربية والتعليم المتعلقة باستخدام الحاسب الآلي؟
- 18. بنظرك هل سياسة وزارة التربية والتعليم نابعة من استراتيجية وطنية لتكنولوجيا المعلومات أم هي امتداد لاستراتيجية وطنية للتعليم؟
- 19. من وجهة نظرك ما هي أهداف هذه الاستراتيجية؟
- 20. من واقع خبرتك كيف تقوم وزارة التربية والتعليم برفع الوعي بين المعلمين عن السياسات المتعلقة بتكنولوجيا التعليم؟
- 21. كمنفذين للسياسات التعليمية هل تتلقون أي توجيه فيما يتعلق باستخدام الحاسب الآلي في التعليم؟
- 22. كيف ترى انعكاس السياسة التعليمية المتعلقة بالحاسب الآلي على طريقة تدريسك؟

23. كيف ترى انعكاس السياسة التعليمية المتعلقة بالحاسب الآلي على شعورك تجاه استخدام الحاسب الآلي في التعليم؟

### الجزء الثالث: مستقبلات التعليم

24. بناء على الوضع الحالي، كيف سيتم استخدام الحاسب الآلي في المدارس الثانوية في المستقبل من ناحية

- المعدات (حواسيب، آلات طباعة، بروجيكترات، سيورة بيضاء تفاعلية، الخ)

- البرامج

- الاتصال

- إمكانية الوصول والاستخدام

- مكان التعلم

- استخدامه في التعليم

25. كيف سيؤثر هذا التغيير على

- أهداف التعليم

- التقويم

- دور المعلم في عملية التعليم

- المنهج التعليمي

26. ماذا تود أن ترى من تغيرات في الفصل خلال العشر سنوات القادمة؟

27. كيف برأيك سوف تتأثر مهنة التعليم بهذه المتغيرات؟

28. هل هذه التغيرات سوف تكون حكرًا على نظام التعليم أم أنها جزء من تغيرات تشمل مختلف نواحي الحياة؟

29. وضح برسم بياني رؤيتك لعلاقة الماضي بالحاضر والمستقبل؟

## Appendix 5: A Sample Transcript and Translation of an Interview

### نص مقابلة مدير المدرسة

#### المقابلة رقم 9

اسم المحاور: أفنان بنت عبدالرحمن العبيد

رمز المعلم: H-3

معلومات عن المتحاور معه: مدير مدرسة ضمن المنهج المطور للمرحلة الثانوية

المؤهلات: بكالوريوس لغة عربية كليات المعلمين

- أنا أعتبر أن الحاسب الآلي أصبح ضرورة في الوقت الحاضر بناء على الانفجار المعرفي الموجود الآن من حولنا يحتم علينا استخدام الحاسب الآلي أما بالنسبة لنا في المدرسة تقريبا مافي قسم إلا فيه حاسب آلي للمعلمين والإداريين وكل أعمالنا الورقية استبدلناها بالحاسب
- لدينا معلمين للطلاب وأجهزة خاصة للمعلمين وقاعات وغرف مصادر التعلم يوجد فيها حاسب آلي ولدينا 9 داتا شو بعضها جاء كهبات وبعضها من الوزارة للفون أننا نطبق نظام جديد حاولنا نستغل هالنظام بحيث أننا نستخدم التقنية بشكل أكبر
- غرفة مصادر التعلم تستخدم من قبل المعلمين بالحجز الأسبوعي أما بالنسبة للفصول فكل قسم لهم جهاز داتاشو فقسم العلوم لديهم جهاز واللغة العربية والتربية الإسلامية لديهم أجهزة ولكل تخصص يوجد قاعة وقاعة رديفة لذا مانعاني من الضغط أو تضارب احتياجات المعلمين بالإضافة إلى كون عندنا جهاز إضافي متنقل
- استخدام معلمين المدرسة يختلف لكن بما أن نظام المدرسة النظام المطور فإن المناهج نازلة على سي دي والمعلم يستغل هذا السي دي ويحوره إلى باوربوينت أو شرائح يستفيد منها في عرض الدرس
- أما بالنسبة لمعلم الحاسب الآلي فيستخدم الحاسب الآلي المتوفر في المعمل بشكل أساسي بشرحه بحكم أنه معلم المادة أو تطبيق الطلاب أو تكليفه لهم بمشاريع وخصوصا أن المنهج الجديد متعمق كثير باستخدام الحاسب أما نوع آخر من المدرسين يستخدم الحاسب أحيانا حسب حاجة الدرس كأن يكون في الدرس صور أو غيره كعملية تغيير للروتين وجذب للطلاب في بعض استخدامات الحاسب لا يمكن تطبيقها على أرض الواقع مثل بعض التجارب إنا عندنا المعامل التشبيهية ممكن عن طريقها ينفذ تجارب عن طريق الحاسب الآلي
- المعلمين يستخدمون الحاسب لعدة أسباب أولا لأنه أصبح ضرورة من ضرورات الحياة وأصبحت التقنية شيء متعارف عليه وأصبح الكتاب واللجوء له شيء قديم والآن في توجه لإلغاء الكتاب وأن يصبح التعليم الإلكتروني الجانب الآخر أن فيه نوع من التجديد والتشويق بالنسبة للطلاب الجانب الثالث أن الطالب ممكن أنه يشارك في إعداد بعض الدروس ماكان ممكن في النظام القديم أن المعلم يعطي الطالب دفتر التحضير لكن الآن الطالب يعد الدرس بعد تحديد النقاط ورؤوس الأ قلام وأحيانا يشرح الدرس بنفسه
- أنا مافي شك إنني أحفز وفي عملية تقييم الأداء الوظيفي أحتسبها فالمعلم الذي يكتر من زيارة غرفة المصادر ويستخدم التقنية ويشرك طلبته أكيد أن له تعامل يختلف عن بقية زملائه اللي ماشي على نفس الأسطوانة السابقة ولا عنده استعداد يغير في حياته شيء

- التحفيز على عدة أشكال مثل تهيئة الأماكن وحضور الدروس وتوفير البرامج الموجودة في السوق وتأمين مساعدة من أمين غرفة المصادر وكون المناهج الجديدة جاية على سي دي حفزت بعض المعلمين وكذلك في تنافس بين المعلمين أنفسهم وفي مردود إيجابي على المعلم بلأن الدرس هذا قد يعده ويفيده لسنوات قادمة بس عملية تجديد وإضافة
- تغيرت طريقة المعلمين في الشرح لا شك بعد استخدامهم للحاسب فقبل كان جزء كبير من الوقت يضيع على الكتابة في السبورة الشيء الآخر أن المعلم أصبح لديه فرصة للتخصير الذهني فمن قبل مو شرط أن المعلم حضر الدرس قبل ما يدخل الفصل لكن الآن عملية تج هيز الدرس تحتاج إعداد مسبق تعتبر تحضير ذهني للمعلم وتحل مشكلة العشوائية اللي كان بعض المعلمين يشرحون الدرس فيها
- جهل المعلم بالحاسب يمنعه من استخدامه في عندنا معلمين كبار بالسن يمانعون من استخدامه لأن الجهل بالشيء يولد الخوف ومن باب مساعدتهم للتغلب على خوفهم تم توفير جهاز حاسب في غرفة المعلمين إذا رغب على الأقل في طباعة بعض الأوراق عوضا عن كتابتها يدويا أو الأسئلة كذلك استفدنا من وفرة حصص معلمين الحاسب نتيجة لتطبيق طلبة الجامعات لدينا في تدريب زملائهم على استخدام الحاسب ابتداء من الأوفيس وحتى يتطور مستواهم
- المعامل كلها تم تجديدها العام الماضي ولأننا نستطيع التحكم بأعداد الشعب فكل شعبة لا تزيد عن عشرين طالب لكي يكون هناك جهاز لكل طالب وبذلك يستطيع الطلبة جميعهم التطبيق العملي وزيادة استفادتهم من المادة كذلك المعمل المعتمد من الوزارة معمل واحد فقط أما المعمل الثاني فتم تفريغ غرفة له وعملنا له تمديدات وشبكة وتم توصيلها بالانترنت ومتوفر في المدرسة خطين للانترنت واحد مخصص لمصادر التعلم متاح للطلبة والمعلمين نوعية الرقابة المفروضة على الطلبة باستخدام الانترنت أن الأجهزة جميعها مكشوفة بمحاذاة أمين غرفة المصادر ولدي جهاز للتحكم أيضا
- أول فائدة من استخدام الحاسب هو التواصل مع العالم في ظل الانفجار المعرفي الكبير ويمكنك من التعرف على التطور الحاصل في التقنية وفي مجال عملك اللي تشتغل فيه الجانب الآخر هو عملية كسر للروتين المتعارف عليه بالمدارس سبورة وقلم ودفتر ولا شيء آخر أيضا أن مافي طالب ولا أسرة في السعودية تخلي من جهاز حاسب آلي فممارسة الطالب لهذا الشيء ورؤيته للمدرس يستخدمه في المدرسة يعزز لديه الإقبال على استخدام الحاسب الشيء الرابع أن في متوفر برامج تعليمية موافق عليها من وزارة التربية والتعليم موجبة لمختلف الفئات العمرية
- إذا أردت اقناع معلم باستخدام الحاسب راح اظهر له محاسن الحاسب له هو شخصيا وانعكاسه على طلابه ومستواه
- طبعا في محفزات بالإيجاب وفيه محفزات بالسلب المحفزات الإيجابية أن تتم مساعدة المعلم في إعداد بعض الدروس لأن مشاركة الطالب في الدروس المستخدم فيه الحاسب أكبر من مشاركته في غيرها من الدروس ولما يشارك الطالب تكون قناعته أكبر والمعلومة تثبت أكثر بالنسبة للسلبية أن المعلم الجاد والمجتهد اللي يجتهد ويطور في نفسه وشرحه ويجب أشياء جديدة للطلاب ويلفت انتباههم ويجعل الطالب إيجابي هذا نجعل له ميزة في تقييم الأداء الوظيفي في التكريم وأمام الزوار وعند أولياء أمور الطلاب وعلى العكس تماما بالنسبة لمن لا يستخدم الحاسب
- المعوقات أهمها الجهل عندي معلمين باقي لهم خمس سنوات ويتقاعد فيقول أول ما عندي استعداد إنني أغير لأنني مراح استفيد منها شيء لكن لو نظر لواقع الحياة لوجد أنه راح يحتاج لمثل هالأمور في حياته وداخل بيته لكن يرى أن مر عليه فترة وقد يجد أنها كبيرة أنه يجي يتعلم من واحد أصغر منه وقد يكون خائف أنه يفشل وفي هذا السن
- معوقات من ناحية الأجهزة أو المعدات غير موجود كل شيء متوفر وجديد ودعم من الزملاء في المدرسة كبير حتى أننا الآن نصور المعلم أثناء الشرح وننسخه على سي دي ويتفرج عليه المدرس إذا رأى أنه نموذجي وزملائه راح يستفيدون منه بنسخه منه لزملائه وإن رأى أنه غير نموذجي ولا يرغب أن يطلع أحد عليه فله ذلك
- الوقت قد يعتبر معيق إذا نظر لها المدرس من منظار بسيط أما إذا نظر لها من منظار مستقبلي فهو سيكسب وقت

- متوفر لي حاسب شخصي في المدرسة والمنزل
- بالنسبة للسي ديات متوفر في المدرسة أمين مصادر التعلم ينسخ للمدرسين مايشاءون إذا كان يحتاج البرنامج أكثر من طالب أو مدرس وإذا استلزم الأمر الشراء فمتوفر ميزانية لهذه الأمور
- التدريب يعتبر عامل محفز مهم جداً وخاصة إذا تدرب خارج المدرسة لأن الإنسان إذا تدرب عند إنسان يعرفه قد يحس بالحرر والتردد
- لا يفيد أن الشخص يتقن استخدام الحاسب الآلي لكن لا يتقن توظيفه في التربية لذا المهم أولاً أن يتعلم استخدام الجهاز ومن ثم توظيف ماتعلم في التربية
- على حسب نوع المعلم فالمعلم الجاهل بالحاسب سوف يتعلم استخدامه كجهاز أما العارف به فسوف يتعلم استخدامه وتوظيفه في التعليم أما من ناحية الإدارة الصفية فلا أعتقد أن من يستعمل الحاسب يحتاجها لأن استعمال الحاسب يعتبر عامل ضبط للصف لأنه يشد انتباه الطلاب ويشوقهم أما الصيانة فلا يحتاجها المعلم العادي
- عندنا معلم مجيد للصيانة أما صيانة الأجهزة فمتوفرة من الشركة اللي ركبت الأجهزة وهي الشركة العالمية تقوم بصيانة الاجهزة اللي وفرتها الوزارة من طابعات وحاسبات وغيره لكن قطع الغيار على المدرسة لو احتاج الأمر وتلبيتهم النداء سريعة تأخذ أيام فقط لا تصل إلى الأسبوع لأن إذا رفعنا أي تقرير سيء عنهم لن نتعاقد معهم الوزارة فهو نوع من الجودة والحفاظ عليها
- إذا احتاج المعلم المساعدة فهي موجودة من قبل معلمين الحاسب الآلي وأمين غرفة المصادر وإداري لدينا يجيد استخدام الحاسب لكن أغلب طلابنا مبدعين في هذا المجال لدرجة أن لدينا موقع مصممينه الطلاب ومنندى يشرف عليه الطلاب أتوقع أن أي معلم تواجهه مشكلة راح يجد لها الحل في الفصل
- المدرسة عندها تفاعل قوي وأكبر دليل هو توفر الأجهزه في المدرسة من حاسبات وداتاشو لكل من المعلمين والإداريين لكن الطلبة غير مسموح لهم باحضار لاب توباتهم معهم للمدرسة أما المعلمين فأغلبهم لديهم أجهزتهم الخاصة بهم
- استخدام الحاسب في التعليم ضرورة
- الوقت اللي أمضيه وأنا استخدم الحاسب الآلي أكون مستمتع
- التجربة التعليمية المستخدم فيها الحاسب الآلي ممتازة لكنها تحتاج دعم من الوزارة لأن لا يكفي أن الوزارة تنتظر وتجعل لك برنامج قوي ثم لا يتابع ويدعم ويصحح إذا كان فيه أخطاء
- استخدام الحاسب الآلي في الفصول متأثر بسياسة الوزارة لأن لو كان الوزارة ماعندها قناعة كان ماوفرت لنا الاجهزة لكن فيه جهد شخصي بتوفير عدد أكبر من الموجود
- من السياسات اللي أنا أعرفها أن الوزارة مقبلة على الكتاب الإلكتروني سيصبح الكتاب الورقي هذا شبه معدوم في المستقبل ولكنه يحتاج لتدرج في التطبيق مثل ما هو حاصل في النظام الثانوي الجديد يطبق في عدد من المدارس وإذا حصل في مشاكل تحل وتتلافي ويطبق بشكل عام لأن العالم من حولنا يتوسع ويسير بسرعة ولا بد أن نلحق بالركب وإلا سندخل في مجال الأمية
- أنا أعرف من خطط الوزارة الحالية هي توفير أجهزة حاسب آلي لمنسوبي التعليم بأقساط ميسرة وهذا نظام مطبق حالياً لنشر استخدام التقنية والوزارة سائرة في تطبيق أنظمة الحكومة الإلكترونية فالتعاميم الآن والمراسلات كلها أصبحت إلكترونية وكذلك التركيز في الخطط الجديدة على استخدام الحاسب الآلي ومادة الحاسب فالنظام القديم للمرحلة الثانوية كان الطالب يدرس مامعدله 6 حصص في الثلاث سنوات الآن إختلف الوضع أصبح يدرس مايقارب من 20 حصة
- أتوقع أنه بما أن الكتاب راح يكون إلكتروني لازم يكون فيه جهاز حاسب وداتاشو في كل قاعة ولزام يركز على أن كل المعلمين يتقنوا استخدام الحاسب الآلي وبالمناسبة تكرب العام الماضي حوالي 6000 معلم على استخدام الحاسب الآلي بالتعاون



- بين الوزارة ونيوهورايزن والسنة هذه نفس الشيء أتيح لكل معلم أن يأخذ دورة تدريبية لمدة اسبوع تكون دورة تأسيسية بعدها إن أراد الإكمال على حسابه الخاص وإن أراد في مدرسته أو في بيته وهذه جهود تساعد على محو أمية المعلمين
- هي أتوقع استراتيجية وطنية توليها الملك عبدالله عندما كان ولي للعهد لكن الوزارة بادرت ب تفعيلها ومن أول أهدافها أن كل مواطن يكون له جهاز من أجل محو أمية الحاسب و الإستعاضة عن المعاملات الورقية وإدخال الحكومة الإلكترونية لأن مافي دولة تستطيع تطبيق الحكومة الإلكترونية بدون مايكون المواطن عنده وعي واستخدام للحاسب
- رفع الوعي بين المعلمين من قبل الوزارة يتم عن طريق الدورات أيضاً الوزارة تقوم بتحفيز المعلمين بتعلم الحاسب الآلي وذلك باعتبار شهادة الحاسب الآلي شرط أساسي للحصول على ندب أو إيفاد أو نقل من مدرسة لأخرى أو الترشيح للإرشاد أو منصب وكيل أو مدير لايتقن الحاسب لايرشح
- الوزارة تقوم برفع الوعي بين المعلمين عن كيفية استخدام الحاسب ودمجه بالتعليم عن طريق دورات يقدمها مركز التدريب والتطوير التربوي سواء من ناحية أساسيات استخدام الحاسب أو كيفية استخدام الباوربوينت في عرض الدروس
- عندي في المدرسة 32 معلم جميعهم يجيدون استخدام الحاسب ما عدا اثنين وهذه نسبة جيدة وما أقدر أقول أن سياسة وزارة التربية والتعليم أثرت في إيجابية المعلمين نحو الحاسب الآلي وإلا فجميع المدارس يجب أن تنتهج نفس النهج لا شك أن سياسة التعليم تحت وتساعد لكن البيئة لها دور والإدراة لها دور فلو كان المدرس في جنوب الرياض في بيئة طلابها يعانون من الفقر ولا عندهم اهتمام بالحاسب ولا عند الطالب أصلا حاسب بالبيت فمهاراته متقارن بطالب في شمال الرياض فالبيئة تنعكس على المعلم وعلى استخدامه للحاسب في المدرسة
- أنا بالنسبة لي متفائل فنحن نعرف أن في 9 مليار من الملك عبدالله للوزارة خصصت للتدريب وطبعاً مجملها أو أغلبها عن طريق استخدام التقنية بالنسبة لتوفر حاسب لكل طالب أتوقع أن هذا ممكن لسبب واحد هو انخفاض أسعار الأجهزة فلو قارنا كيف كانت أسعارها في الماضي وكيف أصبحت وأتوقع أنها في المستقبل راح تكون أسعارها مثلاً أي جهاز آخر في المنزل وفي مدارس أهلية الآن طبقت التعليم الإلكتروني وسهلت وخففت على الطالب حمل الحقيبة المدرسية وأصبح الطالب يرسل الواجبات للمعلم عن طريق الإيميل وصار هناك تواصل دائم بين المعلم والطالب بسبب توفر التقنية هذا بالنسبة لي حلم ومتفائل أنه يتحقق لأن سوق العمل يتطلب ذلك وعندنا الآن فشل في سوق العمل لأن الطالب يتخرج من المرحلة الثانوية وهو لا يجيد لا الحاسب الآلي ولا اللغة الانجليزية وهذا من ضمن الأسباب اللي جعلت عندنا بطالة وشباب عاطل
- اللي جعل العالم يصلون لما وصلوا إليه مو عاجزين أنا نصل له بس نحتاج تخطيط وبعد عشر سنوات ممكن أن الطالب يدرس بالبيت لكن مو بشكل كامل لكن سيكسر حواجز كثيرة بين المعلم والطالب ويزيد من التواصل ويكسر حاجز الخوف عند الطالب من أن المعلم هو المصدر الوحيد للمعلومة سيصبح عنده أكثر من مصدر ويصبح المعلم فقط موجه أو مرشد علماً بأن الآن تغير دور المدرس بشكل كبير من قبل عشر سن وات تقريباً كان المعلم يدرس بالزجر والنهي وقوة الشخصية لكن الآن قوة المعلم بالمعلومة اللي يعطيها الطالب والتواصل مع المعلم خصوصاً في المرحلة الثانوية
- أكيد أن التقييم راح يتغير في العشر سنوات القادمة أو أقل لأن التغيير بدأ من الآن مثلاً العملي كان ماعليه درجة الآن أصبح عليه درجة مستقلة فمن قبل كان الطالب ينظر للمعلم وهو ينفذ التجربة والآن أصبح ينفذ التجربة بنفسه وهذا غير الوضع من كون الطالب سلبي وهو المتلقي
- المنهج راح يتغير وحتى في الفترة القريبة الآن في حديث عن المقررات الإلكترونية
- المعلم إذا مالحق نفسه وتغير لن يجد له مكان في المستقبل

- أنا أتمنى أن الطالب يصبح يبحث عن المعرفة بنفسه إلا أن الطالب يأتي إلى المدرسة مجبر أنا أريد أن الطالب يأتي للمدرسة طوعاً بحثاً عن المعرفة وامتى ماوصلنا لهذه النتيجة سيصبح الطالب عنده نضج وإقبال ويصبح يتعلم للتعلم فقط ودور التقية في هالمجال أنها أكبر مساعد للطالب أنه يتعلم بنفسه
- أتوقع أن المجتمع راح يتغير كله بأكمله مو فقط بمجال التعليم التقنية الآن دخلت كل بيت والانفجار المعرفي دخل في كل مجتمع

## Head Teacher Interview Transcript

### Interview 9

**Interviewer:** Afnan Oyaid

**Teacher Code:** H-3

**Interviewee:** Head teacher of a secondary school of the developed secondary curriculum program

**Qualifications:** BA Arabic Language from Teachers College

- I consider that the computer has become a necessity at the present time based on the explosion of knowledge which now exists around us and which requires us to use the computer. Regarding our school almost every department has a computer for teachers and administrators and all our paper-based work has been replaced with electronic versions.
- We have two labs for students and special equipment for teachers. Lecture rooms and resource rooms are equipped with computers and we have 9 projectors. Some came as a donation and some was provided by the ministry because we are implementing this new secondary system. We have tried to make use of this new system by using the technology more.
- The resources room is used by teachers by weekly booking. Each department has its own projector for example the science department has its own projector, and Arabic language section, as well as Islamic studies they have their own equipment. Each department is allocated two classrooms therefore we do not suffer from pressure or conflict of the different needs of teachers in addition to the fact that we have an extra mobile device.
- Teachers vary in their use of ICT. However, since the school is part of the new developed secondary schools system the curriculum was provided electronically on CDs and the teachers make use of them in PowerPoint presentations.
- As for the ICT teacher he basically uses the computer available in the computer lab for delivering lessons since this is his specialty. He uses computers for students' 'hands on' time and for working on their projects, especially as the new curriculum requires in depth use of computers. There is another type of teacher who uses computers as needed depending on the lesson, such as when there are images or pictures or anything to be shown to students to change the routine and keep the students attention. There are also

some other uses of computers such as using simulation laboratories to simulate some experiments that cannot be applied in reality.

- Teachers use computers for several reasons, first because it has become a necessity of life and technology has become very familiar. Books and their usage has become an old thing to do and now there is a move towards the abolition of the book to be replaced by e-education. On the other hand, the use of computers is a kind of attraction and stimulation, and also the student can participate in preparing some lessons which was not possible in the old system since the teacher could not give his lesson planning book to the student, but now the student can prepare the lesson by identifying main ideas and sometimes he explains the lesson himself.
- There is no doubt that I encourage teachers to use ICT, and in the teachers annual performance report I take this into consideration. A teacher who often uses the resources room and uses the technology and involves his students is treated differently to other colleagues who are doing the same thing again and again and have no willingness to change anything in their lives.
- Stimulation can occur in many ways, such as equipping rooms, attending classes, provision of programs available on the market, to offer the assistance of the resources room librarian and the fact that the new curricula is on CD. All these have prompted some teachers to use computers. As well as this there is a competition between the teachers themselves and also there is a positive impact on the teacher that their lesson had been prepared and this will benefit him for years to come when it only needs some slight changes.
- There is no doubt that teacher methods in explaining lessons has changed as a result of using computers. Before, a lot of class time is wasted on writing on the blackboard. The other thing is that the teacher now has a chance to be prepared mentally to deliver the lesson unlike before where some teachers attended classes without prior preparation. The use of computers requires proper preparation which is considered mental preparation as well and this solves the problem of disordered presentation of lessons.
- A teacher's ignorance prevents him from using a computer. We have some older teachers who resist its use because ignorance creates fear. As a way to help them overcome their fear a computer in the staff room was provided in case even one teacher wanted to word

process some papers or questions instead of writing them by hand. We also benefited from the abundance of ICT teachers classes as a result of having university students on teaching placements in our school so we asked them to train their colleagues on ICT use starting with Office programs until they develop their skills.

- All computer labs were renewed last year and because we can control the numbers of students in each class to no more than twenty students in each one in order to have a computer for each student and therefore all students would be able to practise and it would be of more benefit. The MoE provided the school with only one lab; the second lab was provided by the school as we emptied a room undertook the required wiring and networking and connected the lab to the Internet. There are two Internet lines in the school, One is devoted to the learning resources room. The internet is available to students and teachers. All computers are under the supervision and control of the resources room librarian and he also has a control device to monitor students' Internet use.
- the first benefit from the use of computers is communicating with the world in light of the great explosion of knowledge; it enables you to find out technical developments in your area of interest. ICT use in schools motivate and breaks the routine of the traditional school, involving just blackboard, pen and books. Another thing is that there are hardly any Saudi families without a computer at home so for a student to observe his teacher using a computer at school encourages him to use it. Finally, there is educational software available and approved by MoE targeting different age groups.
- If I want to convince a teacher to use computers I will show him the advantages of its use for him personally and its impact on his performance and students.
- Of course, there are positive incentives and negative incentives. Positive incentives such as to assist the teacher in the preparation of some lessons, because student's participation in lessons delivered using ICT is more than their participation in other lessons, and when the student participates he becomes more convinced and information is reinforced more. Regarding negative incentives, the hardworking and diligent teacher, who strives to develop his skills and introduce students to new things and attract their attention, makes the student very positive. This teacher is treated especially in teacher annual

performance report, praise in front of school visitors and parents; quite the opposite for those who do not use the computer.

- the most important of obstacles is ignorance. I have teachers who have only five years to work before retiring so he says 'I have no intention to change because I will not benefit', but if he looked to reality he would find that he will need such skills in his own life and inside his own home, However he finds that it has been a while since he last learned something new and finds it very difficult to learn from someone younger than him and he might be afraid from failure at this age.
- There are no hindrances regarding devices or equipment, everything is available and new. Colleagues support is huge, now we have even started filming the teacher during lesson explanations and putting it on CD then other teachers will watch it. If he felt that the lesson is beneficial to other teachers then more copies are provided and if he felt otherwise then no one will have access to it.
- Time can be considered a hindrance if the teacher considered this issue in the short term, whereas if he viewed it in the long run he will find that he will gain time.
- A personal computer is available for me at school and home
- Regarding CDs, the resources room librarian provides teachers with their needs regarding CDs and provides them with multiple copies if more than one teacher or student needs it. If necessary, there is a budget for these things
- Training is considered a very important incentive, especially if the teacher was trained outside school, because if he was training with someone he knows he might feel hesitant and embarrassed.
- It is not useful if the teacher has good ICT skills but cannot utilize and employ them in their teaching. Therefore it is important to first gain ICT skills then the deployment of what he has learned in teaching.
- Depending on the type of teacher, a teacher who is not knowledgeable in ICT use will need to learn how to use it whereas a teacher with good ICT skills will need to learn how to utilize and employ it in education. With regard to class management skills I do not think that a teacher who uses ICT will need them because the use of ICT is considered a class control mechanism because it holds students' attention and, computer maintenance skills are not needed for the average teacher.

- We have a teacher with good computer maintenance background, whereas hardware maintenance is provided by the company that installed them, it is called The International Company. It maintains hardware provided by MoE such as computers and printers but spare parts are paid for by the school if needed. The company responds rapidly; it does not take more than few days to a week, because if we reported negatively on their performance the MoE will not renew the contract with them, this is a kind of quality control.
- If the teacher needs assistance, it is offered by ICT teachers and the resources room librarian and we also have one of our administration staff who has good ICT skills. However, most of our students are creative in this area to the extent that we have students who have designed a website and a forum which they run and supervise so I think any teacher who faces any problem will find a solution to it within the class.
- The school is very interested in ICT, the availability of computers and data shows for all teachers and administrative staff in the school strong evidence on that interest. Though students are not allowed to bring their laptops to school most teachers have their own laptops.
- the use of computers in education is a necessity.
- During the time I spend using computer I feel amused.
- The learning experience in which ICT is used is excellent but needs support from MoE because it is not enough that the ministry just makes a strong program with no follow up and support and improvements for any deficiencies.
- The use of computers in classrooms is influenced by MoE policy, because if the ministry was not convinced it wouldn't have provided us with hardware, but there is also our personal effort to provide a greater number of computers than that provided.
- Among the policies that I know, the ministry is going to change to e-books and paper passed books will virtually be non-existent in the future. But this needs to be done gradually such as what happened with the developed secondary system which is being piloted in a number of schools, and if any problems arise then they will be resolved and avoided, then they will be applied in all schools because the world around us is expanding rapidly; changing; and we have to catch up, otherwise we will be literates.

- I know one of the MoE current plans is to provide computers to its employees in easy installments and that initiative is in place now to spread the use of ICT. The MoE is in the process of the applying e-government systems; all memos and correspondence are now electronic, as well as the focus of new plans on the use of ICT and focus on ICT as a subject. In the old secondary system students used to study an average of 6 classes in all three years; now the situation is different, it is around 20 classes.
- I expect that since the book will become an e-book there should be a computer and projector in each classroom. Teachers need to have good ICT skills. By the way last year around 6000 teacher were trained on basic ICT skills in collaboration between the MoE and New Horizon computer centers and the same thing will happen this year. A one week training course on basic ICT skills was offered to all teachers after that they can continue training at their own expense or in their school or home. All these efforts are to help eradicate ICT illiteracy among teachers.
- I think it was a national strategy led by King Abdullah when he was crown prince, but the Ministry has activated it and its first aim was to provide each citizen with a computer to eradicate ICT illiteracy and replace paper based transactions and introduce the e-government, because there is no country that can apply the e-government without citizen's awareness and ability to use computers.
- The MoE raises teachers awareness of its policies by training courses. It also encourages teachers to learn ICT skills by considering a computer training certificate as a prerequisite of assignments, moving to another school, or apply for supervisors, vice head teacher, and head teacher posts. If the teacher does not have good ICT skills then he will not be nominated for these posts.
- The MoE raise teachers awareness on how to use computers and integrate them into education through training courses provided by the Center for Training and Educational Development, both in terms of the basics of ICT use and how to use PowerPoint to present lessons.
- I have 32 teachers in the school and they all know how to use the computer, all except two of these and that is a good percentage. I cannot say that MoE policy has positively influenced teachers ICT use otherwise all schools would be following the same thing. There is no doubt that the educational policy encourages and helps, but the environment



plays a role and the school management plays a role as well. So if the teacher is based in South Riyadh in an environment where students suffer from poverty and have no interest in ICT and the student does not even own a home computer his skills are incomparable with a student living in North Riyadh so the environment is reflected on the teacher and his use on ICT in school.

- As for me, I am optimistic, we know that there is 9 billion that King Abdullah has allocated to the MoE for training purposes and of course the whole or the majority will be training in the use of technology. Regarding providing a computer for each student, I expect that it is possible for one reason that is the reduction in the prices of computers if we compare how the prices were in the past and how they are now and I expect that in the future their prices will be like any other device in the house. There are now some private schools who applied e-learning and facilitated and eased the burden of carrying a school bag and the student started sending his homework by email to his teacher, and there is a continuous communication between the teacher and the student because of the availability of technology. For me this is a dream and I am optimistic that it will become true because the labour market shows that we failed in the labour market if students graduate from secondary school and he do not have ICT skills or English language; this is one of the reasons for unemployment and unemployed youth.
- We are not incapable of achieving what others have achieved but we need planning and in ten years a student can study at home but not full time. This will break many barriers between the teacher and the student and increase communication and break the barrier of fear in the student that the teacher is the only source of information. He will have more than one source, and the teacher will become a guider and facilitator knowing that teacher's role nowadays has changed a lot from what it used to be ten years ago, when the teacher was teaching using punishment and prevention depending on his strong personality. Now the teacher's strength is measured by the strength of information he provides to student and communication with him especially at secondary level.
- It is certain that assessment will change in the next ten years or less. Actually change has started already, for example, practical work was not assessed before, now it is assessed separately. Before a student would observe the teacher performing an experiment but

now he carries it out himself, and this has changed the student situation from being negative and receptive.

- The curriculum will change even in the near future, there is now a move towards an electronic curriculum.
- If the teacher himself does not change he will not find a place for himself in the future.
- I hope that the student will start looking for information by himself, now students are required to come to school I want the student to come to school willingly in search of knowledge and whenever we reach this situation the student will be mature and ready to come to learn for the sake of learning only. The role of technology here is to assist the student in self educating.
- I expect that the whole community will be changed, not only in the field of education. Technology has now entered each house and the explosion of knowledge is in each community.

## Appendix 6: Questionnaire - English Version

### Section A: Personal details and role in the school

1. **Age range** (years):

☐

20-29

☐

30-39

☐

40-49

☐

50-59

☐

60+

2. **Number of years in teaching** (at start of term):

☐

First year

☐

1

☐

2-4

☐

5-9

☐

10+

3. **What is your main teaching subject?** .....

4. **What is your highest qualification?** .....

### Section B: Teachers' Use of ICT

5. In your view, why should teachers if at all use ICT in their teaching?

.....  
.....

6. What type of application do you use for teaching? *Tick all that apply*

☐ PowerPoint

☐ Word processing

☐ Spreadsheets

☐ Graphics/drawing packages

☐ Email

☐ Internet access

☐ Own your own website

☐ Specialist subject program e.g. maths or science

☐ Other.....

☐ None of them

7. I use ICT in my teaching as: *Tick all that apply*

☐ A supplement to the curriculum, i.e. video, pictures, sound, etc.

☐ A reinforcement of the curriculum, i.e. inference theories, practical application and convey information in a different way

☐ Use the Internet as a method of continuous teacher-student and student-student communication

8. In this question we want to find about your use of ICT for teaching, for lesson preparation, for other duties relating to teaching

For these questions use the guidelines: **Regularly** = most days (3 or 4 times a week)

**Quite often** = once or twice a week.

	Regularly	Quite often	Sometimes	Not very often	Never/hardly ever
How often, if at all, do you use ICT for preparing lessons?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How often, if at all, do you access the Internet for retrieving information, (e.g. research, information, ideas etc.)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How often, if at all, do you use ICT for administration purposes (e.g. record keeping, reports, etc.)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How often, if at all, do you use Email for professional purposes?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How often, if at all, do <b>you</b> use ICT when you are teaching classes?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How often, if at all, do <b>your students</b> use ICT in lessons you are teaching?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

9. Please list the 3 main ways you use ICT in relation to your role as a teacher (e.g. research using the Internet, in class with students, word processing worksheets, working in online learning environments, writing reports, etc.)

i) .....

ii) .....

iii) .....

10. Do you have good access to a computer at home? Yes ☐ No ☐

11. Do you have good access to a computer at school? Yes ☐ No ☐

12. How useful is it (or would it be) to have a personal computer at school?

☐ Very useful      ☐ Somewhat useful      ☐ Not at all useful

13. How would you describe your computer skills? *Tick one*

☐ Non-existent      ☐ Beginner level

☐ Intermediate level      ☐ Advanced level

☐ Expert

14. How did you gain skills in using computers? *Tick all applicable*

- ☐ Attended in-school training course
- ☐ Attended Ministry's training courses
- ☐ Attended private training course
- ☐ Assisted by a colleague, family member, or friend
- ☐ By trial and error
- ☐ Other.....

15. Why are you using ICT in your teaching?

- ☐ To keep abreast of advancement in technology
- ☐ To catch up with developed nations
- ☐ Change of class routine to maintain interest
- ☐ Make use of available equipment
- ☐ Method for improving and developing teaching
- ☐ Its use is a symbol of modernisation
- ☐ Pressures to change from students, teachers, and parents
- ☐ Effective method to convey information
- ☐ It is the era of technology use; the illiterate one is the one who does not know how to use ICT
- ☐ Professional way of teaching
- ☐ Other .....

### ***Section C: Barriers and supporting features for ICT use***

16. In this section, we want to find out anything which you feel either encourages you, supports you, is an incentive for you, hinders you, or puts you off, making good use of ICT for teaching and other professional duties. The first set of statements is related to incentives and supporting factors, whereas the second set of statements relates to barriers and factors that hinder ICT use.

<i>All these statements are for incentives and supporting factors</i>	<b>Strongly Agree</b>	<b>Agree</b>	<b>Neutral</b>	<b>Disagree</b>	<b>Strongly Disagree</b>
Whole school view of the importance of ICT, guidelines and policy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Support, encouragement, and motivation from senior management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Letters of gratitude and appreciation from head teacher	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Competition among teachers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Students' advanced competence with ICT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Teacher annual assessment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Leave good impression on students and parents	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Encouraging school environment, i.e. good access to computers, training, technical support, management support	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Using ICT is an indicator of teachers' proficiency	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The new curriculum requires ICT use in teaching	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tangible benefits of ICT use in teaching	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Another enthusiastic teacher	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
First hand experience of using ICT convinced me of its importance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Students' acceptance and support	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Availability of professionally developed software	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ICT course certificate is a condition for promotion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Training	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My desire to develop my skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
It is good for my CV	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Believe in ICT benefits	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My own success creates an incentive for continuing to use ICT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To keep my job	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I like computers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do not want to be ignorant	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<i>All these statements are for factors that hinder your ICT use</i>	<b>Strongly Agree</b>	<b>Agree</b>	<b>Neutral</b>	<b>Disagree</b>	<b>Strongly Disagree</b>
ICT not seen as a whole school priority.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of technical support and maintenance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of professional development opportunity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of time for training	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Free Ministry courses are very short, 2-3 days, and longer courses are not free and not subsidised and they are not directed for varying skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Taking ICT courses is not beneficial salary wise	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Whole school shortage of equipment (old hardware, lack of printing facilities, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of learning resources (software)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Time constrains, i.e. need tremendous effort put into preparing lessons, teaching many lessons per week and several levels, too many other demands on your time.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Home obligations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Assigning managerial responsibilities to teachers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Teachers' resistance to change	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Using ICT will increase work load	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Scheduling problems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
School financial difficulties	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
No or slow Internet access	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Teachers' lack of ICT experience	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of awareness of ICT advantages	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Some teachers create a bad influence on others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Some students do not have ICT access at home	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of class management skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

17. In your own words (they may be completely different, or similar to the points noted above), list the 3 things which have had the most ***positive influence*** on your use of ICT in your teaching:

- i) .....
- ii) .....
- iii) .....

18. In your own words (they may be completely different, or similar to the points noted above), list the 3 things which have most ***hindered*** you in terms of using ICT in your teaching:

- i) .....
- ii) .....
- iii) .....

Please answer *either* question 19 *or* 20, not both

19. What are the main three reasons why you use ICT in your teaching:

- i) .....
- ii) .....
- iii) .....

**OR**

20. What are the main three reasons why you *don't* use ICT in your teaching (or use it very little)

- i) .....
- ii) .....
- iii) .....

21. What would you like to learn more about

- ☐ Technical skills
- ☐ Application of ICT in teaching
- ☐ Management skills
- ☐ ICT skills
- ☐ Internet searching skills
- ☐ Other.....

#### ***Section D: Your feelings towards ICT***

22. We want to get your views about ICT use in **education in general**, not specifically in your own subject, and also find out how you see your own ICT use.

<i>All these statements are about <b>general</b> ICT use in education</i>	<b>Strongly Agree</b>	<b>Agree</b>	<b>Neutral</b>	<b>Disagree</b>	<b>Strongly Disagree</b>
ICT has an important part to play in teaching and learning generally.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Using ICT helped me be at ease with new changes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ICT makes work easier	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ICT makes teaching enjoyable, changes routine, and keeps boredom at bay	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ICT improves students' result performance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Too much emphasis is placed on ICT use.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Using ICT can save time and effort	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ICT increases cooperation between teachers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ICT has a positive influence on students' interaction and attention	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ICT use improves teachers' & students' research skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ability to embody concepts, experiments, and natural phenomena	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ICT use helps in information reinforcement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ICT use maintains quality in all lessons delivered during the day	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ICT offers neat presentation of the lesson and helps the teacher stick to planned lessons	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



ICT use increases independence among students and assists in self education	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ICT use assists teachers in mental preparation of the lesson	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ICT use results in teacher acceptance and willingness to learn from their better skilled students	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ICT is a tool that can lift the burden off the teacher's shoulders	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Teacher use of ICT will psychologically influence students to believe their teacher is modern	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Offers easy and quick access to all sorts of information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ICT use offers continuous student-teacher communication resulting in a flexible and better relationship	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Better class management use of ICT attracts attention	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ICT use improves technical skills for teachers and students	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Students can help teachers prepare lessons delivered using ICT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Using ICT is a dull activity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am very interested in learning about ICT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I feel frustrated when using ICT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

23. In three different words how would you describe your feelings towards ICT?

.....

### ***Section E: Policy and ICT***

24. As far as I am aware, our school ICT policy addresses the following issues:

- ☐ Using ICT is a must for all teachers
- ☐ Well maintained, actively used school website
- ☐ Students are allowed to bring their personal laptops
- ☐ Teachers should make use of the learning resources room at least once in a term
- ☐ Full support for use of ICT in all subjects
- ☐ All teachers should have a minimum level of ICT skills
- ☐ Exam questions should be written using word processors
- ☐ Students' Internet use should be supervised by teachers
- ☐ Other policies: .....

25. How do you think these school policies are influenced by the Ministry of Education's policy?

.....

26. Do you know any detail of or have an overview of the Ministry of Education's ICT policy?

Yes ☐

No ☐

27. You may or may not be completely aware of the details of the Ministry of Education's ICT policy. Please respond to these questions according to your understanding. Which of the following if any, do you think are the Ministry of Education's ICT policy? *Tick all Applicable*

- ☐ ICT will be integrated in educational development plans
- ☐ Electronic curriculum
- ☐ Electronic school
- ☐ Integrating ICT skills with other subjects
- ☐ Taking schools into the technology age
- ☐ Providing the Internet in all schools
- ☐ Computer for each student
- ☐ Spreading the use of ICT in schools
- ☐ Offering teachers computers through monthly instalments
- ☐ Watani project
- ☐ Promoting the effective use of learning resources rooms
- ☐ Electronic learning project
- ☐ Offering ICT training for teachers

Please mention other policies you are aware of not mentioned above:

.....

.....


28. We want to get your views on your school ICT policy versus the Ministry of Education's ICT policy and also find out about their influence on your perceptions towards ICT

	n/a	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
My ICT use is influenced by school policy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Our school ICT policy has positively influenced my feelings and perceptions towards ICT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Our school ICT policy is ahead of the Ministry's ICT policy, therefore, it is not important for our school	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The Ministry's ICT policy is more concerned with managerial aspects of schools	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ministry policies are all theories not applied in reality with no tangible results	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
All Ministry policies lack explanation and	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

teachers have to apply them without fully understanding them						
I am encouraged to use ICT in teaching by the Ministry's policy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Teachers and head teachers do not know the Ministry of Education's ICT policy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The Ministry of Education raises awareness of its ICT policies among teachers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The Ministry of Education sets goals and guides teachers to fulfil them	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am put off using ICT in teaching because of the unclear ICT policies of the Ministry of Education	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### ***Section F: Future of Education***

29. We want to get your views on the possibility of the things below happening in the future. Please indicate whether the statement is highly likely to happen, likely, or highly unlikely to happen.

				
	Highly Likely	Likely	Unlikely	Highly Unlikely
Send homework by email				
Activated school website				
The curriculum will change				
Assessment via class discussion and projects				
Assessing things that have not been assessed before (entering school website and participating)				
Introduction of distance learning				
No school bag				
Computer for each student				
Use of smart boards in teaching				
Wireless Internet connection				
Paperless education				
ICT will dominate our lives				
All hardware will be available at schools				
Provide students with a curriculum plan and they will prepare and search for information				
Virtual classrooms				
No more traditional teaching				

Better hardware will be available for teachers				
I am not optimistic the gap will decrease between us and developed nations				
DSL Internet connection				
No house without Internet access				
School internal network				
Electronic assessment				
Fulfilment of educational goals				

30. What do you think will happen to the role of the teacher? *Tick as many boxes as you like*

- ☐ Change to facilitator and advisor
- ☐ Change in terms of relationship with students
- ☐ Change effort from classroom to planning and searching for suitable electronic material
- ☐ Will not change since students need someone to teach and guide them where to find information
- ☐ Teachers will share directing the learning experience with students
- ☐ Teaching is not the only role of the teacher, s/he has a pedagogic role as well
- ☐ Teacher will not have a text book
- ☐ If the teacher will not change to fit his/her new role in the future, s/he will be left out
- ☐ Students will learn from the computer and not the teacher
- ☐ Computers will be used for much of the assessment rather than being marked by a teacher
- ☐ Other things you think will happen.....

31. What do you hope will happen in the future?

- (i).....
- (ii).....
- (iii).....

Thank you for taking the time to complete this questionnaire.

## Appendix 7: Questionnaire - Arabic Version (Male)

بسم الله الرحمن الرحيم



أخي المربي الفاضل

السلام عليكم ورحمة الله وبركاته

باديء ذي بدء أشكر لك تطفلك وتفطلك بالمشاركة في هذا البحث المكمل لرسالة الدكتوراه بعنوان (استخدام تقنيات المعلومات والاتصال في التعليم من قبل معلمي المرحلة الثانوية واتجاهاتهم ورواه م المستقبلية وعلاقة ذلك بالسياسة التعليمية) والذي يهدف إلى التعرف على كيفية استخدام التقنية في التعليم من قبل معلمي المرحلة الثانوية وشعورهم تجاه هذا الاستخدام والتعرف على محفزات كما معوقات استخدامها بالإضافة إلى التعرف على رؤاهم المستقبلية لاستخدام التقنية وعلاقة ذلك كله بالسياسة التعليمية . وكنمهيده وتهينة أود تعريفك بالإستبانة وما تحتويه من عناصر . الاستبيان يحتوي على ثلاثة محاور رئيسة المحور الأول يتعلق بالاستخدام الحالي للتقنية في التعليم والتعرف على التغيرات التي طرأت على عملية التدريس والتعليم كنتيجة لاستخدامها ويهدف أيضاً إلى التعرف على العوامل المحفزة والمساعدة على استخدامها والعوامل المعيقة عن الاستخدام الأمثل للتقنية الحديثة في التعليم في حين أن المحور الثاني يبحث تأثير السياسة التعليمية على استخدام المعلم لتقنيات التعليم. ويقصد هنا بالسياسة التعليمية: السياسة الموجهة من قبل وزارة التربية والتعليم والمقننة بنظم وضوابط وتوجيهات وصادر عنها تعاميم إدارية. أما المحور الثالث والأخير فيتعلق بمستقبلات التعليم وهذا المصطلح يطلق على نوعين من المستقبل أولهما المستقبل الذي نتوقع حدوثه بناء على المعطيات والأوضاع من حولنا أما الثاني فهو المستقبل المثالي الذي نرغب ونود معاشته

إن هذه الإستبانة قد صممت بدقة لتجمع المعلومات المطلوبة للتعرف على هذه الجوانب بشكل أدق وأفضل . لهذا أطلب منك أخي أن تتفضل بقراءة الأسئلة المرفقة بعناية ومحاولة الإجابة عنها بموضوعية وأمانة لتخرج نتائج البحث وتوصياته قابلة للتطبيق على أرض الواقع . علماً بأن جميع المعلومات والبيانات التي سوف تقدمها ستعامل بمنتهى السرية وستستخدم وفق ما تقتضيه الدراسة العلمية.

ختاماً لا يسعني سوى تقديم الشكر والعرفان لجهدك ووقتكم المبذول راجية من الله القائل (وتعاونوا على البر والتقوى) أن يعينك على طاعته وشكره وحسن عبادته لمساعدتك إياي في طلب العلم والنهل من معينه جعل الله ذلك في موازين حسناتك جزاك الله خيراً.

أختك الباحثة

أفنان بنت عبدالرحمن العييد

## الجزء الأول: معلومات شخصية

1. الرجاء تحديد فنتك العمرية

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
+60	59-50	49-40	39-30	29-20

2. كم عدد السنوات التي قضيتها في سلك التعليم؟

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
+10	9-5	4-2	1	سنتك الأولى

3. ماهي المادة التي تدرسها؟ .....

4. ما هي أعلى شهادة دراسية حصلت عليها؟ .....

## الجزء الثاني: استخدام المعلم لتقنيات المعلومات والاتصال

5. من وجهة نظرك لماذا يجب على المعلم (إن كان عليه ذلك) أن يستخدم تقنيات المعلومات والاتصال في التعليم؟ .....

.....

6. ما نوعية التطبيقات التي تستخدمها في تدريسك حالياً؟ اختر كل ما ينطبق

- ☐ كتابة ومعالجة نصوص (مايكروسوفت وورد) ☐ برامج العرض باوربوينت Powerpoint
- ☐ أمتلك موقع خاص بي على الانترنت (الرجاء كتابة العنوان) ☐ جداول حسابية Excel
- ☐ أمتلك موقع خاص بي على الانترنت (الرجاء كتابة العنوان) ☐ البريد الإلكتروني
- ☐ برامج متخصصة بالمواد كالرياضيات والكيمياء (اذكرها.....) ☐ استخدام الإنترنت
- ☐ أخرى (الرجاء التحديد) ☐ لا شيء مما سبق

7. أستخدم تقنيات التعليم في تدريسي كـ :

- ☐ إضافة وملحق للمنهج مثل استخدام الصور والفيديو والصوت
- ☐ تعزيز للمنهج مثل استنتاج النظريات والتطبيق العملي وتوصيل المعلومة بطريقة مختلفة
- ☐ استخدام الانترنت كنوع من أنواع الاتصال الدائم بين المعلم والطالب والطلاب فيما بينهم

8. في هذا السؤال أود أن أتعرف على استخدامك لتقنيات المعلومات والاتصال في تدريسك وتحضيرك للدروس و أي أعمال متعلقة بتدريسك. لهذا السؤال الرجاء استخدام الدليل التالي:

دائماً ترمز إلى = في أغلب الأيام 3 إلى 4 مرات أسبوعياً  
غالباً ترمز إلى = مرة أو مرتين في الأسبوع  
أحياناً ترمز إلى = مرة واحدة في أغلب الأسابيع  
بين فترة وأخرى ترمز إلى = مرة في الشهر تقريباً

نادراً/ نهائياً	بين فترة وأخرى	أحياناً	غالباً	دائماً	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	متى تستخدم الحاسب الآلي في تحضير دروسك؟
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	متى تستخدم الانترنت للبحث عن معلومات أو أفكار الخ؟
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	متى تستخدم الحاسب الآلي للأعمال الإدارية مثل حفظ التقارير ودرجات الطلاب؟
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	متى تستخدم البريد الإلكتروني لأغراض متعلقة بعملك؟
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	متى تستخدم الحاسب الآلي خلال شرحك داخل الصف؟
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	متى يستخدم طلبتك الحاسب الآلي خلال الدروس التي تعطونها؟

9. اذكر أهم ثلاث استخدامات لتقنيات المعلومات والاتصال فيما يتعلق بدورك كمعلم مثل (بحث في الانترنت، داخل الصف مع الطلبة، كتابة أوراق العمل، استخدام بيانات التعلم الإلكترونية، كتابة تقارير.....)

أ).....  
ب).....  
ج).....

10. هل تملك جهاز حاسب آلي في المنزل؟ ☐ نعم ☐ لا

11. هل هناك حاسبات آلية متوفرة للمعلمين في المدرسة؟ ☐ نعم ☐ لا

12. ما مدى فائدة وجود حاسب آلي شخصي في المدرسة

☐ مفيد جداً ☐ مفيد إلى حد ما ☐ غير مفيد على الإطلاق

13. كيف تصف مستوى مهاراتك في استخدام الحاسب الآلي؟ اختر إجابة واحدة فقط

☐ لا أملك أي مهارات ☐ مستوى مبتدئ ☐ مستوى متوسط

☐ مستوى متقدم ☐ خبير

14. كيف اكتسبت مهاراتك في استخدام الحاسب الآلي؟ اختر كل ما يلائمك

☐ حضرت برنامج تدريبي مقدم من وزارة التربية والتعليم ☐ حضرت برنامج تدريبي داخل المدرسة

☐ بمساعدة عضو من العائلة أو صديق أو زميل في المدرسة ☐ حضرت برنامج تدريبي في معهد خاص

☐ طريقة أخرى..... ☐ بالممارسة والتعلم الذاتي

15. لماذا تستخدم تقنيات المعلومات والاتصال في تدريسك؟

- ☐ مسايرة الدول المتقدمة تكنولوجياً
- ☐ مواكبة التطور في التكنولوجيا
- ☐ استغلال الأجهزة المتوفرة في المدرسة
- ☐ تغيير لروتين الدرس لإبعاد الملل
- ☐ استخدامه يدل على التطور والتقدم
- ☐ طريقة لتطوير وتجديد طرق التدريس
- ☐ طريقة احترافية للتدريس
- ☐ الآن هو عصر التكنولوجيا والأمي هو الذي لا
- ☐ بسبب الضغط من قبل الطلاب والأهالي والمعلمين
- ☐ يستخدم الحاسب
- ☐ لأسباب أخرى
- ☐ لا استخدامه

**الجزء الثالث: محفزات و معوقات استخدام تقنيات المعلومات والاتصال**

16. في هذا الجزء أود أن أعرف على الأشياء التي تشعر أنها تحفزك، تشجعك، تدعمك، أو تعيقك وتثبط همتك عن الاستخدام الأمثل لتقنيات المعلومات والاتصال في تدريسك أو أعمالك المتعلقة بك كمعلم . المجموعة الأولى من الجمل تدور حول العوامل المحفزة والمشجعة فيما المجموعة الثانية تدور حول العوامل المعيقة عن استخدام التقنيات في التعليم

كل هذه الجمل متعلقة بالعوامل المحفزة والمساعدة على استخدام التقنية	أوافق بشدة	أوافق	محايد	أعارض	أعارض بشدة
سياسة المدرسة وتوجيهاتها واهتمامها ككل باستخدام التقنية	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
الدعم والتشجيع والتحفيز من قبل إدارة المدرسة	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
خطابات الشكر والتقدير والثناء من إدارة المدرسة	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
المنافسة بين المعلمين	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
مستوى الطلاب المتقدم في استخدام الحاسب الآلي	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
مهم في تقييم الأداء الوظيفي	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ترك انطباع جيد على الطلاب و أهاليهم	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
البيئة المدرسية المشجعة مثل توفر الحاسبات والتدريب والصيانة والدعم الفني ودعم الإدارة	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
استخدام الحاسب الآلي هو دليل على احترافية المعلم وتمكنه	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
المنهج الجديد المطور يستدعي استخدام الحاسب الآلي	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
المردود الإيجابي من استخدام الحاسب الآلي في التعليم	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
تأثرت من معلم متحمس ومؤمن بفوائد استخدام الحاسب الآلي	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
تجربتي الشخصية أقتعتني بفوائد استخدام الحاسب في التعليم	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
تقبل الطلاب ودعمهم لاستخدام الحاسب في تدريسهم	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
توفر البرامج التعليمية المطورة بشكل احترافي	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
التمكن من استخدام الحاسب الآلي هو شرط من شروط الترقية	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
توفر التدريب المناسب على استخدام الحاسب الآلي	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	رغبتي بتطوير قدراتي
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	تمكنني من استخدام الحاسب الآلي سيكون نقطة جيدة في سيرتي الذاتية
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	إيماني بفوائد استخدام الحاسب الآلي في التعليم
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	نجاحي في استخدام الحاسب يشكل دافعاً وحافزاً لاستخدامه
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	حتى أتمكن من الاحتفاظ بوظيفتي
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	لأنني أحب استخدام الحاسب الآلي
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	لا أربح بأن أوصف بأمية الحاسب وعدم المعرفة بين زملائي

أعترض بشدة	أعترض	محايد	أوافق	أوافق بشدة	كل هذه الجمل متعلقة بالعوامل المعيقة عن استخدام التقنية
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	تقنيات التعليم لا تشكل أولوية لإدارة المدرسة
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	نقص خدمات الصيانة والدعم الفني
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	قلة فرص التدريب والتطوير الوظيفي
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	قلة الوقت المتوفر للتدريب
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	دورات الوزارة المجانية قصيرة 2 إلى 3 أيام والدورات الطويلة ليست مجانية كما أنها ليست موجهة للمستويات المختلفة
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	حضور الدورات التدريبية ليس له مبرر مالي من ناحية الراتب
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	نقص المعدات في المدرسة (نقص عدد الأجهزة وقدمها وعدم توفر آلات طباعة)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	عدم توفر برامج تعليمية
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	قلة الوقت المتوفر لإعداد الدرس بسبب كثرة عدد الحصص في الأسبوع و تدريس أكثر من مرحلة
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	إلتزامات عقلية
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	إيكال مهام إدارية للمعلم
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	عدم تقبل بعض المعلمين للتغيير
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	استخدام الحاسب الآلي سيزيد من أعباء العمل
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	مشاكل في تنسيق جدول غرفة المصادر بين المعلمين
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	صعوبات مالية تواجه المدرسة
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	بطيء أو عدم توفر اتصال بالانترنت
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	قلة خبرة المعلمين باستخدام الحاسب الآلي
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	قلة الوعي بفوائد استخدام الحاسب الآلي
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	التأثير السلبي لبعض المعلمين على زملائهم
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	بعض الطلبة قد لا يتوفر لديهم حاسب آلي في منازلهم
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	عدم التمكن من مهارات الإدارة الصفية

17. باستخدام تعبيراتك الخاصة والتي قد تكون مشابهة أو مختلفة تماماً عما ذكر سابقاً اذكر أهم ثلاثة أشياء شكلت حافزاً ودافعاً لاستخدامك الحاسب الآلي في تدريسك.

- (أ).....  
 (ب).....  
 (ج).....

18. باستخدام تعبيراتك الخاصة والتي قد تكون مشابهة أو مختلفة تماماً عما ذكر سابقاً اذكر أهم ثلاثة أشياء شكلت عائقاً لاستخدامك الحاسب الآلي في تدريسك.

- (أ).....  
 (ب).....  
 (ج).....

الرجاء الإجابة على السؤال 19 أو 20 وليس كلاهما

19. عدد أهم ثلاثة أسباب تجعلك تستخدم تقنيات المعلومات والاتصال في تدريسك

- (أ).....  
 (ب).....  
 (ج).....

20. عدد أهم ثلاثة أسباب لعدم استخدامك (أو لقلّة استخدامك) لتقنيات المعلومات والاتصال في تدريسك.

- (أ).....  
 (ب).....  
 (ج).....

21. ماذا تود أن تتعلم أكثر في المهارات التالية:

- ☐ مهارات إدارة صفية وإدارة الوقت  
☐ مهارات تقنية مثل صيانة الأجهزة  
☐ مهارات دمج استخدام الحاسب الآلي في التعليم  
☐ مهارات البحث في الانترنت  
☐ مهارات استخدام الحاسب الآلي كجهاز  
☐ غيرها

### الجزء الرابع: شعورك تجاه تقنيات المعلومات والاتصال

22. في هذا الجزء أود أن أتعرف على وجهة نظرك تجاه استخدام تقنيات المعلومات والاتصال بشكل عام في التعليم وليس في مجال استخدامه في المادة التي تدرسها فقط كما أود أيضاً التعرف على رأيك الشخصية لاستخدامك التقنيات.

جميع هذه الجمل تعبر عن استخدام الحاسب بشكل عام	أوافق بشدة	أوافق	محايد	أعارض	أعارض بشدة
الحاسب الآلي يلعب دوراً مهماً في عملية التعليم	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
استخدام الحاسب الآلي جعلني أثقل الأشياء الجديدة بشكل أكبر	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
استخدام الحاسب يجعل العمل أسهل	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
استخدام الحاسب يجعل التدريس أكثر متعة ويغير الروتين ويبعد الملل	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
استخدام الحاسب يحسن من مستوى الطلاب الدراسي	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
هناك تركيز كبير على استخدام الحاسب في التعليم	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
استخدام الحاسب يساعد في توفير الوقت والجهد	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
استخدام الحاسب أدى إلى زيادة التعاون بين المعلمين	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	استخدام الحاسب له تأثير إيجابي على تفاعل الطلاب وانتباههم للدروس
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	استخدام الحاسب يطور من مهارات البحث لدى المعلم والطالب
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	الحاسب يمكننا من تجسيد المفاهيم والتجارب العملية وتمثيل الظواهر الطبيعية
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	استخدام الحاسب يساعد على تأكيد وتثبيت المعلومات
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	استخدام الحاسب يساعد على المحافظة على مستوى جودة الدروس المعطاة خلال اليوم
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	استخدام الحاسب يساعد على تقديم الدرس بشكل مرتب والتزام المعلم بعناصر الدرس
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	استخدام الحاسب يعزز استقلالية الطلاب ويساعد في عملية التعلم الذاتي
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	استخدام الحاسب يساعد المعلم في عملية الإعداد الذهني للدروس
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	استخدام الحاسب أدى إلى تقبل المعلم للتعلم من طلابه الأكثر تمكنًا من مهارات الحاسب
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	الحاسب هو أداة تساعد في تخفيف العبء من على المعلم
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	استخدام الحاسب له تأثير نفسي على الطلاب بأن معلمهم عصري متجدد مواكب للتطور
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	استخدام الحاسب يوفر الحصول على المعلومة بشكل بسيط وسريع
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	استخدام الحاسب يوفر تواصل دائم بين المعلم والطالب مما ينتج عنه علاقة مرنة وجيدة
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	استخدام الحاسب يجذب انتباه الطلاب لذا يساعد في عملية الإدارة الصفية
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	استخدام الحاسب أدى إلى تطوير المهارات التقنية للمعلم والطالب
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	يمكن للطلاب أن يساعدوا في إعداد الدروس المقدمة باستخدام الحاسب
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	استخدام الحاسب الآلي هو نشاط ممل
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	أنا مهتم جداً بتعلم المزيد عن الحاسب
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	أشعر بالتوتر والقلق عند استخدام الحاسب

23. باستخدام ثلاث كلمات مختلفة كيف تصف شعورك تجاه استخدام الحاسب الآلي؟

### الجزء الخامس: سياسة استخدام تقنيات المعلومات والاتصال

24. على حد علمك سياسة المدرسة المتعلقة باستخدام تقنيات المعلومات والاتصال تشمل التالي:

- ☐ تفعيل كامل وتحديث مستمر لموقع المدرسة على الانترنت
- ☐ إلزامية استخدام الحاسب الآلي لجميع المعلمين
- ☐ دعم كامل لاستخدام الحاسب الآلي في جميع المواد الدراسية
- ☐ يسمح للطلاب بإحضار حاسباتهم المحمولة
- ☐ استخدام الطلاب للانترنت داخل المدرسة يكون بإشراف المعلم
- ☐ أسئلة الاختبارات يجب أن تكون مطبوعة باستخدام برنامج الورد
- ☐ جميع المعلمين يجب أن يمتلكوا حد أدنى من مهارات استخدام الحاسب الآلي
- ☐ يجب على المعلمين استخدام غرفة مصادر التعلم على الأقل مرة في الفصل الدراسي
- ☐ سياسات أخرى

25. كيف ترى تأثير سياسات مدرستك بسياسة وزارة التربية والتعليم المتعلقة باستخدام تقنيات التعليم؟

26. هل أنت على علم ولو بشكل عام بسياسات وزارة التربية والتعليم المتعلقة باستخدام الحاسب؟

نعم ☐ لا ☐

27. قد لا تكون على علم كامل بتفاصيل سياسة وزارة التربية والتعليم تجاه استخدام الحاسب الآلي لكن أرجو الإجابة على الأسئلة التالية على حسب علمك. أي مما يلي هو سياسة من سياسات وزارة التربية والتعليم المتعلقة باستخدام الحاسب الآلي؟ اختر كل ما يناسبك

- ☐ المنهج الإلكتروني ☐ تقنيات المعلومات والاتصال سوف تدمج في ج ميع  
الخطط التطويرية المستقبلية
- ☐ المدرسة الإلكترونية ☐ دمج مهارات استخدام الحاسب مع المواد الأخرى
- ☐ توفير حاسب آلي لكل طالب ☐ تطوير المدارس لتواكب عصر التكنولوجيا
- ☐ مشروع وطني ☐ توفير اتصال بالإنترنت في جميع المدارس
- ☐ بوابة التعليم الإلكترونية ☐ نشر استخدام التقنية في جميع المدارس
- ☐ توفير فرص تدريبية للمعلمين ☐ توفير حاسبات للمعلمين بأقساط شهرية ميسرة
- ☐ سياسات أخرى ☐ التشجيع على الاستخدام الفعال لغرف مصادر التعلم

28. أود التعرف على وجهة نظرك تجاه سياسات المدرسة مقارنة بسياسات وزارة التربية والتعليم المتعلقة باستخدام تقنيات المعلومات والاتصال ومدى تأثيرها على شعورك تجاه استخدام الحاسب

لا ينطبق	أعارض بشدة	أعارض	محايد	أوافق	أوافق بشدة	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	استخدامي للحاسب الآلي متأثر بسياسة المدرسة
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	سياسة المدرسة تجاه استخدام الحاسب أثرت بشكل إيجابي تجاه شعوري نحو الحاسب
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	سياسة المدرسة متقدمة بشكل كبير على سياسة الوزارة لذا فهي لا تشكل لنا أي أهمية
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	سياسات الوزارة معنية بشكل كبير باستخدام الحاسب في الأمور الإدارية
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	سياسات الوزارة جميعها نظريات بدون تطبيق أو نتائج ملموسة
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	سياسات الوزارة لا توضح وتشرح بشكل وافي للمعلمين مما يضطرهم لتطبيقها بشكل خاطئ
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	سياسات الوزارة شجعتني على استخدام الحاسب الآلي
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	المدرء والمعلمين ليسوا على اطلاع تام بسياسات الوزارة
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	وزارة التربية والتعليم تقوم برفع الوعي بين المعلمين فيما يتعلق بسياساتها
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	الوزارة تقوم برسم أهداف وتساعد المعلمين على تحقيقها
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	أنا غير متحمس لاستخدام الحاسب بسبب السياسات غير الواضحة للوزارة

## الجزء السادس: مستقبلات التعليم

29. أود التعرف على توقعاتك بإمكانية حدوث ما يلي في المستقبل. أرجو تحديد ما إذا كانت الجملة ممكنة الحدث جداً أو ممكنة الحدث أو مستبعدة الحدث أو مستبعدة الحدث إطلاقاً.

←				
مستبعد الحدث إطلاقاً	مستبعد الحدث	ممكن الحدث	ممكن الحدث جداً	
				إرسال الواجبات المنزلية عن طريق البريد الإلكتروني
				موقع المدرسة على الانترنت مفضل بشكل جيد
				المنهج الدراسي سوف يتغير
				التقييم سوف يكون عن طريق النقاشات الصفية والمشاريع
				التقييم سوف يشمل نقاط لم تكن تقييم من قبل مثل الدخول على موقع المدرسة والمشاركة فيه
				تطبيق التعليم عن بعد
				إختفاء الحقائق مدرسية
				توفير حاسب لكل طالب
				استخدام السبورة الذكية في التعليم
				اتصال لاسلكي بالانترنت
				تعليم لا وركي (التعامل بالأوراق سوف يختفي)
				الحاسبات سوف تسيطر على حياتنا
				الحاسبات سوف تتوفر بشكل طبيعي داخل المدارس
				إعطاء الطلاب مفردات المنهج وسيقومون بالبحث والتحضير للدروس
				فصول دراسية افتراضية
				إختفاء التعليم التقليدي
				توفر أجهزة أفضل للمعلمين
				أنا لست متفائلاً الفجوة ستنتسج بيننا وبين الدول المتقدمة
				اتصال بالانترنت DSL
				جميع المنازل متصلة بالانترنت
				توفر شبكة داخلية بالمدرسة
				تقييم إلكتروني للطلاب
				تحقيق لإهداف التعليم

30. ماذا تعتقد سيحدث لدور المعلم؟ اختر كل ماتريد من القائمة

- ☐ سيتغير فيما يخص علاقته مع الطلاب
- ☐ سيتغير لموجه ومرشد للعملية التعليمية
- ☐ المعلم لن يعتمد على كتاب واحد فقط كمرجع
- ☐ سيتشارك المعلم والطالب في توجيه العملية التعليمية
- ☐ التعليم ليس الدور الوحيد للمعلم فدوره تربوي أيضاً
- ☐ سيتم التعلم عن طريق الحاسب وليس من المعلم ولا يمكن أن يتغير
- ☐ لن يتغير دوره الطلاب سيحتاجون من يعلمهم
- ☐ سيتحول الجهد من داخل الفصل إلى الإعداد والبحث
- ☐ ويدلهم على مكان وجود المعلومات و مدى صحتها
- ☐ وإمكانية قبولها
- ☐ عن مادة علمية إلكترونية مناسبة
- ☐ الحاسب سيستخدم لكثير من أمور تقني م مستوى
- ☐ إذا لم يتغير المعلم لمواكبة التغيير الحاصل في مهنته
- ☐ الطلاب وليس عن طريق المعلم
- ☐ سوف يستغنى عنه
- ☐ أمور تعتقد أنها ستحصل في المستقبل القريب

.....  
.....

31. ماذا تتمنى أن يحدث في المستقبل؟

- أ).....
- ب).....
- ج).....

شكراً لك ولوقتك المبدول لملئ هذه الإستبانة  
جزاك الله خيراً

## Appendix 8: Questionnaire - Arabic Version (Female)

بسم الله الرحمن الرحيم



أختي المربية الفاضلة

السلام عليكم ورحمة الله وبركاته

باديء ذي بدء أشكر لك تلافك وتفضلك بالمشاركة في هذا البحث المكمل لرسالة الدكتوراه بعنوان (استخدام تقنيات المعلومات والاتصال في التعليم من قبل معلمي المرحلة الثانوية واتجاهاتهم ورؤاهم المستقبلية وعلاقة ذلك بالسياسة التعليمية ) والذي يهدف إلى التعرف على كيفية استخدام التقنية في التعليم من قبل معلمات المرحلة الثانوية وشعورهم تجاه هذا الاستخدام والتعرف على محفزات و معوقات استخدامها بالإضافة إلى التعرف على رؤاهم المستقبلية لاستخدام التقنية وعلاقة ذلك كله بالسياسة التعليمية . وكنمهيذ وتهينة أود تعريفك بالاستبيان وما يحتويه من عناصر . الاستبيان يحتوي على ثلاثة محاور رئيسة المحور الأول يتعلق بالاستخدام الحالي للتقنية في التعليم والتعرف على التغيرات التي طرأت على عملية التدريس والتعليم كنتيجة لاستخدامها ويهدف أيضاً إلى التعرف على العوامل المحفزة والمساعدة على استخدامه والعوامل المعيقة عن الاستخدام الأمثل للتقنية الحديثة في التعليم. في حين أن المحور الثاني يبحث تأثير السياسة التعليمية على استخدام المعلمة لتقنيات التعليم ويقصد هنا بالسياسة التعليمية السياسة الموجهة من قبل وزارة التربية والتعليم والمقننة بنظم وضوابط وتوجيهات وصادر عنها تعاميم إدارية. أما المحور الثالث والأخير فيتعلق بمستقبلات التعليم وهذا المصطلح يطلق على نوعين من المستقبل أولهما المستقبل الذي نتوقع حدوثه بناء على المعطيات والأوضاع من حولنا أما الثاني فهو المستقبل الذي نرغب ونود معاشته

إن هذه الإستبانة قد صممت بدقة لتجمع المعلومات المطلوبة للتعرف على هذه الجوانب بشكل أدق وأفضل. لهذا أطلب منك أختي أن تنفضلي براءة الأسئلة المرفقة بعناية ومحاولة الإجابة عنها بموضوعية و أمانة لتخرج نتائج البحث وتوصياته قابلة للتطبيق على أرض الواقع . علماً بأن جميع المعلومات والبيانات التي سوف تقدميها ستعامل بمنتهى السرية وستستخدم وفق ما تقتضيه الدراسة العلمية.

ختاماً لا يسعني سوى تقديم الشكر والعرفان لجهذك ووقتكم المبذول راجية من الله القائل (وتعاونوا على البر والتقوى) أن يعينك على طاعته وشكره وحسن عبادته لمساعدتك إياي في طلب العلم والنهل من معينه جعل الله ذلك في موازين حسناتك وجزاك الله خيراً. كما أود التنويه على أن الاستبيانات المكتملة سوف تدخل في السحب على جهاز جوال فالرجاء ترك طريقة للاتصال في حالة الفوز إن شاء الله تعالى.

أختك الباحثة

أفنان بنت عبدالرحمن العييد

## الجزء الأول: معلومات شخصية

1. الرجاء تحديد فنتك العمرية

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
+60	59-50	49-40	39-30	29-20

2. كم عدد السنوات التي قضيتها في سلك التعليم؟

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
+10	9-5	4-2	1	سنتك الأولى

3. ماهي المادة التي تدرسيتها؟ .....

4. ما هي أعلى شهادة دراسية حصلت عليها؟ .....

## الجزء الثاني: استخدام المعلمة لتقنيات المعلومات والاتصال

5. من وجهة نظرك لماذا يجب على المعلمة (إن كان عليها ذلك) أن تستخدم تقنيات المعلومات والاتصال في التعليم؟

.....

.....

6. ما نوعية التطبيقات التي تستخدمها حالياً في تدريسك؟ اختاري كل ما ينطبق

- |  |   |
|--|---|
| <input type="checkbox"/> كتابة ومعالجة نصوص (مايكروسوفت وورد)                    | <input type="checkbox"/> برامج العرض باوربوينت Powerpoint |
| <input type="checkbox"/> برامج الصور والرسم                                      | <input type="checkbox"/> جداول حسابية Excel               |
| <input type="checkbox"/> أملاك موقع خاص بي على الانترنت (الرجاء كتابة العنوان)   | <input type="checkbox"/> البريد الإلكتروني                |
| <input type="checkbox"/> برامج متخصصة بالمواد كالرياضيات والكيمياء (اذكرها.....) | <input type="checkbox"/> استخدام الإنترنت                 |
| <input type="checkbox"/> أخرى (الرجاء التحديد)                                   | <input type="checkbox"/> لا شيء مما سبق                   |

7. أستخدم تقنيات التعليم في تدريسي كـ :

- ☐ إضافة وملحق للمنهج مثل استخدام الصور والفيديو والصوت
- ☐ تعزيز للمنهج مثل استنتاج النظريات والتطبيق العملي وتوصيل المعلومة بطريقة مختلفة
- ☐ استخدام الانترنت كنوع من أنواع الاتصال الدائم بين المعلم والطالب والطلاب فيما بينهم

8. في هذا السؤال أود أن أعرف على استخدامك لتقنيات المعلومات والاتصال في تدريسك وتحضيرك للدروس و أي أعمال متعلقة بتدريسك. لهذا السؤال الرجاء استخدام الدليل التالي:

دائماً ترمز إلى= في أغلب الأيام 3 إلى 4 مرات أسبوعياً  
غالباً ترمز إلى= مرة أو مرتين في الأسبوع  
أحياناً ترمز إلى= مرة واحدة في أغلب الأسابيع  
بين فترة وأخرى ترمز إلى= مرة في الشهر تقريباً



متى تستخدم الحاسب الآلي في تحضير دروسك؟	دائماً	غالباً	أحياناً	بين فترة وأخرى	نادراً/ نهائياً
متى تستخدم الحاسب الآلي في تحضير دروسك؟	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
متى تستخدم الحاسب الآلي للبحث عن معلومات أو أفكار ألع؟	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
متى تستخدم الحاسب الآلي للأعمال الإدارية مثل حفظ التقارير ودرجات الطالبات؟	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
متى تستخدم البريد الإلكتروني لأغراض متعلقة بعملك؟	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
متى تستخدم الحاسب الآلي خلال شرحك داخل الصف؟	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
متى تستخدم طابالك الحاسب الآلي خلال الدروس التي تعطينها؟	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

9. اذكرى أهم ثلاث استخدامات لتقنيات المعلومات والاتصال فيما يتعلق بدورك كمعلمة مثل (بحث في الانترنت، داخل الصف مع الطالبات، كتابة أوراق العمل، استخدام بيانات التعلم الإلكترونية، كتابة تقارير....)

أ).....

ب).....

ج).....

10. هل تملكين جهاز حاسب آلي في المنزل؟ ☐ نعم ☐ لا

11. هل هناك حاسبات آلية متوفرة للمعلمات في المدرسة؟ ☐ نعم ☐ لا

12. ما مدى فائدة وجود حاسب آلي شخصي في المدرسة؟ ☐

☐ مفيد جداً ☐ مفيد إلى حد ما ☐ غير مفيد على الإطلاق

13. كيف تصفين مستوى مهاراتك في استخدام الحاسب الآلي؟ اختاري إجابة واحدة فقط

☐ لا أملك أي مهارات ☐ مستوى مبتدىء ☐ مستوى متوسط

☐ مستوى متقدم ☐ خبيرة

14. كيف اكتسبت مهاراتك في استخدام الحاسب الآلي؟ اختاري كل ما يلائمك

☐ حضرت برنامج تدريبي مقدم من وزارة التربية والتعليم ☐ حضرت برنامج تدريبي داخل المدرسة

☐ بمساعدة عضو من العائلة أو صديقة أو زميلة في المدرسة ☐ حضرت برنامج تدريبي في معهد خاص

☐ طريقة أخرى..... ☐ بالممارسة والتعلم الذاتي

15. لماذا تستخدمين تقنيات المعلومات والاتصال في تدريسيك؟

☐ مسايرة الدول المتقدمة تكنولوجياً ☐ مواكبة التطور في التكنولوجيا

☐ استغلال الأجهزة المتوفرة في المدرسة ☐ تغيير لروتين الدرس لإبعاد الملل

☐ استخدامه يدل على التطور والتقدم ☐ طريقة لتطوير وتجديد طرق التدريس

☐ طريقة احترافية للتدريس ☐ طريقة فعالة لتوصيل المعلومات

☐ الآن هو عصر التكنولوجيا والأمي هو الذي لا ☐ بسبب الضغط من قبل الطلاب والأهالي والمعلمين

يستخدم الحاسب ☐ لاستخدامه

☐ أسباب أخرى

### الجزء الثالث: محفزات و معوقات استخدام تقنيات المعلومات والاتصال

16. في هذا الجزء أود أن أتعرف على الأشياء التي تشعرين أنها تحفزك، تشجعك، تدعمك، أو تعيقك وتثبط همتك عن الاستخدام الأمثل لتقنيات المعلومات والاتصال في تدريسيك أو أعمالك المتعلقة بك كمعلمة . المجموعة الأولى من الجمل تدور حول العوامل المحفزة والمشجعة فيما المجموعة الثانية تدور حول العوامل المعيقة عن استخدام التقنيات في التعليم

كل هذه الجمل متعلقة بالعوامل المحفزة والمساعدة على استخدام التقنية	أوافق بشدة	أوافق	محايد	أعارض	أعارض بشدة
سياسة المدرسة وتوجيهاتها واهتمامها ككل باستخدام التقنية	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
الدعم والتشجيع والتحفيز من قبل إدارة المدرسة	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
خطابات الشكر والتقدير والثناء من إدارة المدرسة	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
المنافسة بين المعلمات	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
مستوى الطالبات المتقدم في استخدام الحاسب الآلي	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
مهم في تقييم الأداء الوظيفي	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ترك انطباع جيد على الطالبات و أهاليهم	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
البيئة المدرسية المشجعة مثل توفر الحاسبات والتدريب والصيانة والدعم الفني ودعم الإدارة	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
استخدام الحاسب الآلي هو دليل على احترافية المعلمة وتمكنها	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
المنهج الجديد المطور يستدعي استخدام الحاسب الآلي	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
المردود الإيجابي من استخدام الحاسب الآلي في التعليم	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
تأثرت من معلمة متحمسة ومؤمنة بفوائد استخدام الحاسب الآلي	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
تجربتي الشخصية اقنعني بفوائد استخدام الحاسب في التعليم	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
تقبل الطالبات ودعمهم لاستخدام الحاسب في تدريسيهم	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
توفر البرامج التعليمية المطورة بشكل احترافي	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
التمكن من استخدام الحاسب الآلي هو شرط من شروط الترقية	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
توفر التدريب المناسب على استخدام الحاسب الآلي	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
رغبتي بتطوير قدراتي	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
تمكني من استخدام الحاسب الآلي سيكون نقطة جيدة في سيرتي الذاتية	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
إيماني بفوائد استخدام الحاسب الآلي في التعليم	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
نجاحي في استخدام الحاسب يشكل دافعاً وحافزاً لاستخدامه	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
حتى أتمكن من الاحتفاظ بوظيفتي	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
لأنني أحب استخدام الحاسب الآلي	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
لا أربح بأن أوصف بأمية الحاسب وعدم المعرفة بين زميلاتي	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

أعراض بشدة	أعراض	محايد	أوافق	أوافق بشدة	كل هذه الجمل متعلقة بالعوامل المعيقة عن استخدام التقنية
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	تقنيات التعليم لا تشكل أولوية لإدارة المدرسة
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	نقص خدمات الصيانة والدعم الفني
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	قلة فرص التدريب والتطوير الوظيفي
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	قلة الوقت المتوفر للتدريب
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	دورات الوزارة المجانية قصيرة 2 إلى 3 أيام والدورات الطويلة ليست مجانية كما أنها ليست موجهة للمستويات المختلفة
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	حضور الدورات التدريبية ليس له مردود مالي من ناحية الراتب
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	نقص المعدات في المدرسة (نقص عدد الأجهزة وقدمها وعدم توفر آلات طباعة)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	عدم توفر برامج تعليمية
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	قلة الوقت المتوفر لإعداد الدرس بسبب كثرة عدد الحصص في الأسبوع و تدريس أكثر من مرحلة
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	التزامات عائلية
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	إيكال مهام إدارية للمعلمة
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	عدم تقبل بعض المعلمات للتغيير
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	استخدام الحاسب الآلي سيزيد من أعباء العمل
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	مشاكل في تنسيق جدول غرفة المصادر بين المعلمات
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	صعوبات مالية تواجه المدرسة
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	بطيء أو عدم توفر اتصال بالانترنت
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	قلة خبرة المعلمات باستخدام الحاسب الآلي
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	قلة الوعي بفوائد استخدام الحاسب الآلي
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	التأثير السلبي لبعض المعلمات على زميلاتهن
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	بعض الطالبات قد لا يتوفر لديهن حاسب آلي في منازلهن
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	عدم التمكن من مهارات الإدارة الصفية

17. باستخدام تعبيراتك الخاصة والتي قد تكون مشابهة أو مختلفة تماماً عما ذكر سابقاً اذكر أهم ثلاثة أشياء شكلت حافزاً ودافعاً لاستخدامك الحاسب الآلي في تدريسك.

- أ).....  
 ب).....  
 ج).....

18. باستخدام تعبيراتك الخاصة والتي قد تكون مشابهة أو مختلفة تماماً عما ذكر سابقاً اذكر أهم ثلاثة أشياء شكلت عائقاً لاستخدامك الحاسب الآلي في تدريسك.

- أ).....  
 ب).....  
 ج).....

الرجاء الإجابة على السؤال 19 أو 20 وليس كلاهما

19. عددي أهم ثلاثة أسباب تجعلك تستخدمين تقنيات المعلومات والاتصال في تدريسك.

- (أ) .....
- (ب) .....
- (ج) .....

20. عددي أهم ثلاثة أسباب لعدم استخدامك (أو لقلة استخدامك) لتقنيات المعلومات والاتصال في تدريسك.

- (أ) .....
- (ب) .....
- (ج) .....

21. ماذا تودين أن تتعلمي أكثر في المهارات التالية:

- ☐ مهارات إدارة صفية وإدارة الوقت
- ☐ مهارات تقنية مثل صيانة الأجهزة
- ☐ مهارات دمج استخدام الحاسب الآلي في التعليم
- ☐ مهارات البحث في الانترنت
- ☐ غيرها
- ☐ مهارات استخدام الحاسب الآلي كجهاز

#### الجزء الرابع: شعورك تجاه تقنيات المعلومات والاتصال

22. في هذا الجزء أود أن أتعرف على وجهة نظرك تجاه استخدام تقنيات المعلومات والاتصال بشكل عام في التعليم وليس في مجال استخدامه في المادة التي تدرسينها فقط كما أود أيضاً التعرف على رؤيتك الشخصية لاستخدامك التقنيات

جميع هذه الجمل تعبر عن استخدام الحاسب بشكل عام	أوافق بشدة	أوافق	محايد	أعارض بشدة	أعارض بشدة
الحاسب الآلي يلعب دوراً مهماً في عملية التعليم	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
استخدام الحاسب الآلي جعلني أثقل الأشياء الجديدة بشكل أكبر	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
استخدام الحاسب يجعل العمل أسهل	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
استخدام الحاسب يجعل التدريس أكثر متعة ويغير الروتين ويبعد الملل	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
استخدام الحاسب يحسن من مستوى الطالبات الدراسي	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
هناك تركيز كبير على استخدام الحاسب في التعليم	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
استخدام الحاسب يساعد في توفير الوقت والجهد	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
استخدام الحاسب أدى إلى زيادة التعاون بين المعلمات	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
استخدام الحاسب له تأثير إيجابي على تفاعل الطالبات وانتباههن للدروس	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
استخدام الحاسب يطور من مهارات البحث لدى المعلمة والطالبة	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
الحاسب يمكننا من تجسيد المفاهيم والتجارب العملية وتمثيل الظواهر الطبيعية	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
استخدام الحاسب يساعد على تأكيد وتثبيت المعلومات	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
استخدام الحاسب يساعد على المحافظة على مستوى جودة الدروس المعطاة خلال اليوم	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
استخدام الحاسب يساعد على تقديم الدرس بشكل مرتب والتزام المعلمة بعناصر الدرس	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
استخدام الحاسب يعزز استقلالية الطالبات ويساعد في عملية التعلم الذاتي	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
استخدام الحاسب يساعد المعلمة في عملية الإعداد الذهني للدروس	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	استخدام الحاسب أدى إلى تقبل المعلمة للتعليم من طالباتها الأكثر تمكناً من مهارات الحاسب
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	الحاسب هو أداة تساعد في تخفيف العبء من على المعلمة
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	استخدام الحاسب له تأثير نفسي على الطالبات بأن معلمتهن عصرية متجددة مواكبة للتطور
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	استخدام الحاسب يوفر الحصول على المعلومة بشكل بسيط وسريع
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	استخدام الحاسب يوفر تواصل دائم بين المعلمة والطالبة مما ينتج عنه علاقة مرنة وجيدة
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	استخدام الحاسب يجذب ارتياح الطالبات لذا يساعد في عملية الإدارة الصفية
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	استخدام الحاسب أدى إلى تطوير المهارات التقنية للمعلمة والطالبة
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	يمكن للطالبات أن يساعدن في إعداد الدروس المقدمة باستخدام الحاسب
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	استخدام الحاسب الآلي هو نشاط ممل
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	أنا مهتمة جداً بتعلم المزيد عن الحاسب
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	أشعر بالتوتر والقلق عند استخدام الحاسب

23. باستخدام ثلاث كلمات مختلفة كيف تصفين شعورك تجاه استخدام الحاسب الآلي؟

### الجزء الخامس: سياسة استخدام تقنيات المعلومات والاتصال

24. على حد علمك سياسة المدرسة المتعلقة باستخدام تقنيات المعلومات والاتصال تشمل التالي:
- ☐ تفعيل كامل وتحديث مستمر لموقع المدرسة على الانترنت
- ☐ دعم كامل لاستخدام الحاسب الآلي في جميع المواد الدراسية
- ☐ يسمح للطلاب بإحضار حاسباتهم المحمولة
- ☐ أسئلة الاختبارات يجب أن تكون مطبوعة باستخدام برنامج الورد
- ☐ استخدام الطلاب للانترنت داخل المدرسة يكون بإشراف المعلم
- ☐ جميع المعلمين يجب أن يمتلكوا حد أدنى من مهارات استخدام الحاسب الآلي
- ☐ يجب على المعلمين استخدام غرفة مصادر التعلم على الأقل مرة في الفصل الدراسي
- ☐ سياسات أخرى

25. كيف ترين تأثير سياسات مدرستك بسياسة وزارة التربية والتعليم المتعلقة باستخدام تقنيات التعليم؟

26. هل أنت على علم ولو بشكل عام بسياسات وزارة التربية والتعليم المتعلقة باستخدام الحاسب؟

نعم ☐ لا ☐

27. قد لا تكونين على علم كامل بتفاصيل سياسة وزارة التربية والتعليم تجاه استخدام الحاسب الآلي لكن أرجو الإجابة على الأسئلة التالية على حسب علمك . أي مما يلي هو سياسة من سياسات وزارة التربية والتعليم المتعلقة باستخدام الحاسب الآلي؟ اختاري كل ما يناسبك

- ☐ المنهج الإلكتروني ☐ تقنيات المعلومات والاتصال سوف تدمج في جميع الخطط التطويرية المستقبلية
- ☐ المدرسة الإلكترونية ☐ دمج مهارات استخدام الحاسب مع المواد الأخرى
- ☐ توفير حاسب آلي لكل طالبة ☐ تطوير المدارس لتواكب عصر التكنولوجيا
- ☐ مشروع وطني ☐ توفير اتصال بالانترنت في جميع المدارس
- ☐ بوابة التعليم الإلكترونية ☐ نشر استخدام التقنية في جميع المدارس
- ☐ توفير فرص تدريبية للمعلمات ☐ توفير حاسبات للمعلمات بأقساط شهرية ميسرة
- ☐ سياسات أخرى ☐ التشجيع على الاستخدام الفعال لغرف مصادر التعلم

28. أود التعرف على وجهة نظرك تجاه سياسات المدرسة مقارنة بسياسات وزارة التربية والتعليم المتعلقة باستخدام تقنيات المعلومات والاتصال ومدى تأثيرها على شعورك تجاه استخدام الحاسب

لا ينطبق	أعارض بشدة	أعارض	محايد	أوافق	أوافق بشدة	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	استخدامي للحاسب الآلي متأثر بسياسة المدرسة
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	سياسة المدرسة تجاه استخدام الحاسب أثرت بشكل إيجابي تجاه شعوري نحو الحاسب
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	سياسة المدرسة متقدمة بشكل كبير على سياسة الوزارة لذا فهي لا تشكل لنا أي أهمية
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	سياسات الوزارة معنية بشكل كبير باستخدام الحاسب في الأمور الإدارية
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	سياسات الوزارة جميعها نظريات بدون تطبيق أو نتائج ملموسة
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	سياسات الوزارة لا توضح وتشرح بشكل وافي للمعلمات مما يضطرهن لتطبيقها بشكل خاطئ
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	سياسات الوزارة شجعتني على استخدام الحاسب الآلي
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	المديرات والمعلمات لسن على اطلاع تام بسياسات الوزارة
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	وزارة التربية والتعليم تقوم برفع الوعي بين المعلمات فيما يتعلق بسياساتها
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	الوزارة تقوم برسم أهداف وتساعد المعلمات على تحقيقها
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	أنا غير متحمسة لاستخدام الحاسب بسبب السياسات غير الواضحة للوزارة

## الجزء السادس: مستقبلات التعليم

29. أود التعرف على توقعاتك بإمكانية حدوث مايلي في المستقبل. أرجو تحديد ما إذا كانت الجملة ممكنة الحدوث جداً أو ممكنة الحدوث أو مستبعدة الحدوث أو مستبعدة الحدوث إطلاقاً

←				
مستبعد الحدوث إطلاقاً	مستبعد الحدوث	ممكن الحدوث	ممكن الحدوث جداً	
				إرسال الواجبات المنزلية عن طريق البريد الإلكتروني
				موقع المدرسة على الانترنت مفعّل بشكل جيد
				المنهج الدراسي سوف يتغير
				التقييم سوف يكون عن طريق النقاشات الصفية والمشاريع
				التقييم سوف يشمل نقاط لم تكن تقيم من قبل مثل الدخول على موقع المدرسة والمشاركة فيه
				تطبيق التعليم عن بعد
				إختفاء الحفائب مدرسية
				توفير حاسب لكل طالبة
				استخدام السيرة الذاتية في التعليم
				اتصال لاسلكي بالانترنت
				تعليم لا وركي (التعامل بالأوراق سوف يختفي)
				الحاسبات سوف تسيطر على حياتنا
				الحاسبات سوف تتوفر بشكل طبيعي داخل المدارس
				إعطاء الطالبات مفردات المنهج وسيقمن بالبحث والتحضير للدروس
				فصول دراسية افتراضية
				إختفاء التعليم التقليدي
				توفر أجهزة أفضل للمعلمات
				أنا لست متفائلة الفجوة ستتسع بيننا وبين الدول المتقدمة
				اتصال بالانترنت DSL
				جميع المنازل متصلة بالانترنت
				توفر شبكة داخلية بالمدرسة
				تقييم إلكتروني للطالبات
				تحقيق لإهداف التعليم

30. ماذا تعتقد أن سيحدث لدور المعلمة؟ اختاري كل ما تريدين من القائمة

- ☐ سيتغير فيما يخص علاقتها مع الطالبات
- ☐ المعلمة لن تعتمد على كتاب واحد فقط كمرجع
- ☐ ستتشارك المعلمة والطالبة في توجيه العملية التعليمية
- ☐ التعليم ليس الدور الوحيد للمعلمة فدورها تربوي أيضاً
- ☐ سيتعلم عن طريق الحاسب وليس من المعلمة ولا يمكن أن يتغير
- ☐ لن يتغير دورها الطالبات سيحتجن من يعلمهن ويدلهن
- ☐ سيتحول الجهد من داخل الفصل إلى الإعداد والبحث على مكان وجود المعلومات و مدى صحتها وإمكانية قبولها
- ☐ الحاسب سيستخدم لكثير من أمور تقييم مستوى الطالبات وليس عن طريق المعلمة
- ☐ إذا لم تتغير المعلمة لمواكبة التغيير الحاصل في مهنتها سوف يستغنى عنها
- ☐ أمور تعتقد أن ستحصل في المستقبل القريب

31. ماذا تتمنين أن يحدث في المستقبل؟

- أ).....
- ب).....
- ج).....

شكراً لك ولوقتك المبدول لملئ هذه الإستبانة

جزاك الله خيراً



## Appendix 9: Analysis of Questionnaire's Open Questions

**Q5.** From your point of view, why should the teacher use information and communication technologies in education?

Topic	Remarks	Repetition
<b>Education</b>	• Using the computer in teaching creates an atmosphere of comfort and stimulation during lessons.	8
	• To renew teaching methods, break the traditional way of teaching, and change the pattern, which increase the activity and vitality of lessons, and help students accept them.	19
	• The use of the computer enriches the lesson and offers new ways of teaching that are user friendly and gladden the hearts of students.	2
	• Develop the curriculum electronically and subject smoothly.	2
	• Provide an integrated and developed learning environment.	2
	• Increase cultural awareness of the technologies for students and teachers.	2
	• Enrich scientific articles	2
	• Embody concepts better than the teacher does.	5
	• Important in the development and upgrading of education	20
<b>Student</b>	• Help to broaden student perceptions and skills.	11
	• Break the boring routine.	13
	• Stimulate students' creativity	10
	• Deliver information to students using techniques that add new information to the educational process	1
	• Help students search for information using modern techniques.	1
	• Draw the attention of students, motivate them, and make the lesson fun and attractive.	19
	• Using the computer in teaching is the best way to deliver information to students without effort	2
	• Raise the level of students' ability in dealing in dealing with technologies.	2
	• Learning techniques stimulate the senses of the student through all types of data presentation, such as audio, image and video	1
	• Give students the motivation to search for information.	1
	• The teacher cannot reach the student through following only one pattern in teaching, but by using the computer, the	1

	teacher can enrich the information.	
	• Connect the students with the scientific world.	1
	• Students can practically touch and link to the reality so the information and evidence will become consolidated.	18
<b>Teacher</b>	• Save time and effort	16
	• Develop the teacher's learning practice and free him/her from learning restrictions.	7
	• Easy to use	2
	• Explain scientific concepts better.	2
	• Make the process of learning easier for the teacher.	13
	• Keep up-to-date with the latest scientific developments	1
	• Develop Knowledge and practical skills of the teacher.	8
<b>Outside Influence</b>	• There are many experiences of other countries in using computers in education; therefore, we should benefit from the experiences of others.	1
	• to cope with the modern technology age and to keep up with developed countries	50
	• keep pace with global developments in the field of learning	5
	• The world has become a small village and it is very important for the educated person to be able to cope with everything around him/her.	5
<b>Information</b>	• Get the information faster, easier and more accurate.	13
	• To get the benefit of modern methods in research and get good, comprehensive and interesting information to see what is new.	3
	• Facilitate the delivery of information in a clear and interesting way.	78
	• Provide and enrich the student and the teacher with as much information as is possible and necessary.	2
	• Provide information in modern and different forms and in a distinct manner.	3
<b>Communicate</b>	• Can easily communicate with the student and the guardian.	1
	• Can easily communicate with the students at any time.	4
<b>Benefits of Using Computer</b>	• Can exploit of the benefits of using IT in learning for the teacher and student	10
	• Computer has positive impact on students	2
<b>Better not to Use the Computer</b>	• Using computers in teaching does not suit all subjects.	2
	• I think that using the computer in teaching is a help, but if I do not use it, this will not affect my level of explanation or my students.	1

	<ul style="list-style-type: none"> <li>Techniques are a means of attracting the attention of students and helping the teacher, but they are not important.</li> </ul>	1
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**Q17.** Using your own expression that may be similar or quite different to that previously reported, what are the three most important things that motivate you to use computers in teaching?

### Positive Influences

Topic	Remarks	Repetition
<b>External</b>	<ul style="list-style-type: none"> <li>Provide training courses to all teachers.</li> </ul>	4
	<ul style="list-style-type: none"> <li>Provide sufficient rooms of resources, which allow the largest possible number of classes.</li> </ul>	4
	<ul style="list-style-type: none"> <li>The School policy should encourage this way of teaching.</li> </ul>	30
	<ul style="list-style-type: none"> <li>The developed and new curriculum require the use of computers.</li> </ul>	4
	<ul style="list-style-type: none"> <li>The equipment of the school and the ability of the school to provide the techniques and programs</li> </ul>	4
	<ul style="list-style-type: none"> <li>Provide some programs and presentations which are free on the Internet</li> </ul>	2
	<ul style="list-style-type: none"> <li>Provide information differently through video or sound or pictures.</li> </ul>	2
	<ul style="list-style-type: none"> <li>Islamic religion calls for learning and takes advantage of what is new.</li> </ul>	1
	<ul style="list-style-type: none"> <li>The teacher should use the computer.</li> </ul>	1
	<ul style="list-style-type: none"> <li>Know more about developments and technical information.</li> </ul>	29
	<ul style="list-style-type: none"> <li>Keep up with developed countries.</li> </ul>	4
	<ul style="list-style-type: none"> <li>Computer usage is widespread.</li> </ul>	1
	<ul style="list-style-type: none"> <li>Evaluate the functionality</li> </ul>	5
<b>Internal</b>	<ul style="list-style-type: none"> <li>Students accept and like to receive learning through computers.</li> </ul>	24
	<ul style="list-style-type: none"> <li>Increase the level of knowledge of students.</li> </ul>	4
	<ul style="list-style-type: none"> <li>Know the new technological advancements in education.</li> </ul>	7
	<ul style="list-style-type: none"> <li>I believe in using computers in education.</li> </ul>	2
	<ul style="list-style-type: none"> <li>Achieve success and be distinguished.</li> </ul>	2
	<ul style="list-style-type: none"> <li>Imitate other teachers and get the benefit of their experience.</li> </ul>	2
	<ul style="list-style-type: none"> <li>To promote the psychological, moral and personal self.</li> </ul>	3
	<ul style="list-style-type: none"> <li>Develop my abilities and to acquire new skills.</li> </ul>	5
	<ul style="list-style-type: none"> <li>Encourage students to learn and raise their knowledge level of computers.</li> </ul>	29

	• I like the process of learning using computer.	2
	• I believe that the era of stagnation and memorisation has ended.	9
	• I have good experience in using computers.	1
	• Avoid boring and old ways of teaching students.	5
	• I like to change for the better	2
	• Learn about the new sciences in the world.	3
	• I want to change for the best.	2
	• I want to use new ways in teaching.	12
	• I want to develop the curriculum and to link subjects with pictures and movies.	2
	• Using the computer has benefits and achieves positive results.	28
	• I want to develop myself functionally.	1
	• I want to have good knowledge of computer usage.	6
<b>Surrounding Factors</b>	• Using the computer in learning makes students more interacting.	2
	• Most of my colleagues use the computer.	5
	• Honest competition between colleagues	2
	• Now every home has a computer this will raise the technical level of students.	2
	• The teacher must be an example for his students, especially in using, learning and teaching using the computer.	1
	• Using computers is encouraged by some teachers	2

### Incentives and Reasons for Computer Use

Topic	Remarks	Repetition
<b>Information</b>	• Expansion of information provided to students.	2
	• Searching and finding the information give pleasure.	1
	• Refreshing information obtained using the old method	2
	• Provide and present the information in an easy way.	9
	• Search for more useful and helpful means.	3
	• Can more easily search for information and deliver it in an easy and simple manner.	10
<b>Technical Reasons</b>	• Activate the computer in every house.	2
	• Communication will become easier.	1

	• Using the computer is easy.	1
	• Solve the problem of handwriting, because everything will be clear.	1
<b>Teacher</b>	• Give the teacher some rest.	1
	• Avoid routine.	1
	• Save time and effort.	8
	• Learning will be easier.	1
	• Communication between student and teacher will be by e-mail.	3
	• The computer is useful in classroom management.	2
	• To be role models for students in the use of all what is new in education.	2
	• Wanting to know all what is new related to subjects.	2
	• The possibility of moving geometric shapes about.	2
	• One means of education, which clarifies the concepts of science in a new and useful way.	2
	• The old system can be supported by the use of the computer to be effective.	5
	• The use of the computer serves my teaching method.	2
	• To find and search for additional new information is very important to enhance the lesson process.	2
	• Increase the efficiency and skills of the teacher.	8
	• It is evidence of the capacity and professionalism of the teacher.	2
	• Encourage students to use computers.	1
<b>The Administrative Work of the Teacher</b>	• The teacher can add or delete and modify the lesson.	3
	• The lesson will be available and ready and the teacher can repeat it without the need to prepare it again.	1
	• Help and assist me in preparing lessons and scientific articles.	4
	• Accessibility to write, change or restore information on the computer.	1
	• Prepare the lesson in a well-organised way.	1
	• Save all the lesson preparation and work papers for the next year.	1
	• It is a helpful means to evaluate and prepare the lessons.	1
	• Use the same model in more than one lesson and many times.	1
	• Draw the students' attention.	22
	• Save the time and effort of the teacher during the lesson.	18
	• Avoid boring lessons.	26

<b>Lesson</b>	• Optimise utilisation of time in the class.	1
	• Facilitate the presentation of the lesson.	3
	• Develop the educational process.	8
	• Some lessons can be explained only by using the computer.	1
	• The style is new and funny.	1
	• Increase the motivation of students.	1
	• All students are involved in a shared learning experience.	3
	• The possibility of providing and displaying the lesson in a more interactive way.	1
	• Scientific subjects become better	1
	• Change on to advanced learning environment.	1
	• Facilitate the educational process and delivery of information.	28
	• Link the learning with the reality.	1
	• It is new way to support the lesson.	5
	• Update students about what is going on around them in the outside world.	2
	• Expand the cognitive abilities of students.	2
	• Students will be interested in the lesson and disruption will be avoided.	2
	• Give students the opportunity to familiarise themselves with a new means of obtaining knowledge.	2
	• Make the mind work in different areas so the student will get the experience.	2
	• Break the boundaries of the routine in the educational process, which creates a willingness in students to continue.	2
	• Coverage of all school subjects through the use of computers.	2
	• Break the routine in some lessons	2
	• The students have a serious desire to prepare the lesson.	2
	• Make students want to understand the subject.	2
	• Using the Internet imparts new ideas to students and encourages them to participate in projects.	2
	• It adds fun and suspense.	5
	• Students will not forget the information.	5
	• Display the lesson in easy way.	5
	• It is a new and developed way of teaching.	6
	• Students will be satisfied with the colour, images and video, which will make the educational process more appealing.	10

	• Introduce the computer as a useful means for learning not only for playing.	5
	• Show creativity and skill in explaining the lesson.	2
	• Provide the student with new understanding and ideas.	5
	• It is easy to review the lesson.	2

**Q18.** Using your own expressions that may be similar or quite different from that previously reported, what are the three most important things that constitute an obstacle to using the computer in teaching?

Topic	Remarks	Repetition
<b>Time</b>	• There is insufficient time to prepare lessons when using the computer.	4
	• Not enough time for training in use of the computer.	2
	• Teaching using the computer needs more time and the time for the study class is short.	4
	• Using computers in teaching requires too much effort because we have to enter the data for the working papers and the teaching plan in the computer.	3
	• We do not have enough time.	48
<b>School Facilities</b>	• The Internet is not available in all classrooms.	9
	• Only one resources room is available in the school.	3
	• We do not have enough computer equipment and accessories in classrooms.	8
	• There are not enough computers.	4
	• There are not enough resources rooms.	2
	• There are not enough well-equipped rooms.	2
	• The lack of educational programs	2
	• The school has not enough capacity.	8
	• The resources room is small for the large number of students.	2
	• The school administration lacks funds to quickly resolve any problem facing the administration without going back to the Education Department.	2
	• Most classrooms have no display system.	7
	• The high and expensive prices of some distinctive educational programs and the devices associated with the computer.	2
	• The difficulty of using computers in class rooms because they are not ready and equipped.	2

	• The educational environment faces some difficulties.	2
	• Carrying and transferring computers involve some difficulties.	1
	• Sometimes, we have technical breakdowns (computer, printers) especially during the presentation of the lesson.	18
	• There are not enough funds.	4
	• There are not enough printers and scanners.	4
	• We do not have a special room for a collaborative learning lesson.	3
	• Some devices need upkeep and maintenance.	3
	• The devices are old.	16
	• We have a limited number of computers in comparison to the number of students.	4
	• There is no blackboard in the resources room.	8
	• The teachers do not have their own computers in the school.	2
	• There are not enough rooms for the computers.	2
	• There is no internal network.	2
<b>Personal Reasons</b>	• My love of reading	1
	• Inability to use the computer	27
	• I do not have the desire to use the computer.	2
	• There are no motivations and encouragement.	1
	• The negative influence of some teachers on their colleagues	6
	• Teachers will not accept performance improvement.	1
	• I will not receive praise for the result of my effort.	1
	• Do not know how to use the developed design programs.	2
	• Sitting for a long time at the computer has a bad effect on health.	1
	• Sometimes I need the blackboard.	1
	• I do not have classroom management skills.	1
	• The problems of viruses transmitted to the memory of my computer.	1
	• Preparing and computerising all the lessons is very difficult.	1
	• I do not have a lap top.	1
	• I do not have experience in how to integrate and use computers in education.	10
	• Discouragement from the school management.	4
	• I am busy with my family responsibilities.	6



	• Computers are expensive.	2
	• I am not young.	2
	• I do not know the English language and most of the useful sites and programs are in English.	2
	• I cannot deal with breakdowns.	2
	• Using computers will cause dispersion of information.	1
<b>Training</b>	• There are no long training programmes.	3
	• There is no motivation to attend the training courses.	1
	• Training courses are not available during work in the school.	2
	• They do not choose the right time to set up courses.	2
	• Training and career development opportunities are few.	22
<b>Student</b>	• There are problems arising between students.	1
	• Students are unable to use the computer.	7
	• Students do not accept computers.	6
	• Students feel that these techniques do not convey the essence of subjects.	1
	• Students feel bored repeating the same things each class.	2
	• Some students do not have computers in their home.	5
	• We have a large number of students.	1
	• Students are busy preparing for their examinations.	1
<b>Work Pressure</b>	• Too much administrative work and not enough free time.	2
	• Give the teacher administrative tasks and assignments.	8
	• Teaching responsibilities are many in addition to the class.	34
<b>Curriculum</b>	• Using the computer does not fit all subjects.	14
	• The physical training classes depend on the practical and applied aspects.	1
	• Mathematics is a particular case which may not fit entirely with the computer.	2
	• The computer may not serve the subject of the lesson and therefore become an obstacle and cause of disruption to the lesson.	1
	• They change the curriculum constantly.	1
	• There is no pre-electronic curriculum.	2
	• The curriculum is not flexible.	2
	• The arrival of the curriculum is late.	2
	• The curricula are intensive.	10

<b>Administrative</b>	• The school management was not interested.	3
	• Particular teachers use the resources room only.	1
	• We have a large number of students per class.	1
	• There is no motivation.	2
	• The class time in the academic table is not considered.	1
	• There is no maintenance or upkeep of labs.	2
	• The resources room is always busy and occupied.	17
	• The use of personal devices is not allowed.	1
	• There are no good support services and maintenance.	24
<b>Sources of Information</b>	• Providing the lesson on the Internet is difficult.	3
	• Suitable Arabic scientific articles are not available on the Internet.	1
	• The learning programs are weak.	2
	• Lack of educational programs	11
	• The educational programs do not cover all sections of the curriculum.	2

**Q19.** What are the three most important reasons that make you use information and communication technologies in teaching?

<b>Topic</b>	<b>Remarks</b>	<b>Repetition</b>
<b>Time</b>	• Drawings are available, which saves and gives the teacher the time to explain again.	1
	• Save a lot of time during the preparation of the lesson.	1
	• Save time and effort in the class.	9
	• Save time and get the advantage of using the computer for the presentation of the lesson.	8
<b>Information</b>	• Expanse of the information provided to students.	2
	• Change the environment of the class, which makes students accept more information.	2
	• Deliver the information in new and easy ways.	10
	• The information is available on the Internet.	1
	• Can restore the required information at any time easily.	1
	• Update the information.	2
	• Get new and useful information very easy and fast.	9

	• Enrich the lessons with the required information.	3
	• The sources are varied and renewable.	1
	• Provide useful resources during lessons.	1
	• Need of scientific subjects.	1
	• Make the information easy for students to understand.	2
	• Use more than one sense to consolidate and stabilise the information.	7
	• The meaning will be become clearer using photos and maps to illustrate the information.	1
	• Save information.	1
	• Convey some engineering information to students.	1
	• Search for pictures and video to serve and help the curriculum.	2
	• Facilitate the teaching and delivery of information.	20
	• It is an important source of information.	2
	• Deliver the information fast.	3
	• Students will accept the information more when they use the computer.	3
<b>Personal Reasons</b>	• Love for Education.	2
	• Incentives.	1
	• I believe in the necessity and importance of IT.	4
	• Love to know, develop the skills and self.	16
	• Know more about the learning techniques.	1
	• Give rest to the teacher.	2
	• A new system and we can benefit from it.	2
	• It gives personal usefulness and practical experience.	2
	• Enhance the performance of the user.	3
	• I have the ability to manage the class through the lab network.	3
	• Using computers reduces the burden of carrying paintings and photographs during the explanation.	1
	• Apply what I have learned from lessons and give it to my students.	1
	• The use of prepared presentation is easy; we can repeat it several times.	1
	• Deliver the information to parents.	1
	• Develop and improve the teaching level.	7
	• Develop my abilities as a teacher in delivering the information correctly and properly.	2

	• Computer use is an essential factor in the teaching process.	1
	• Ease of use.	6
	• I have good experience in the use of computers.	6
	• The use of computers reduces the effort in the classroom.	1
	• Arrange ideas during preparation of the lesson.	2
	• Cope with new development in the world.	3
	• I seek renewal, innovation and excellence	4
	• Find comfort by giving lessons	3
	• Enhance the curriculum	3
	• Speed in completing work	2
<b>Lesson</b>	• Present lessons in a modern way.	2
	• Facilitate the presentation of the lesson	4
	• Change the routine lesson to avoid boredom.	14
	• Cope with learning and scientific progress	1
	• Add new information	1
	• Change the old educational process.	1
	• Coverage of all school subjects by the computer.	1
	• The subjects are difficult.	1
	• Change the class environment so the student accepts the information.	1
	• Connect learning to reality.	1
	• Prepare the lesson in a well-organised way.	1
	• Enrich lessons with more than the regular learning means.	1
	• Clarify and simplify the scientific subjects.	2
	• Achieve the goals of the lesson faster.	3
	• Attract the attention of students.	10
	• Lesson more effective.	1
	• Adoption of lessons permanently on the computer, especially in the presentation of Quranic texts	1
	• To summarise lesson	1
	• The teacher talks less in lesson	1
	• Faster in performance and giving information	1
	• Can show last lesson and linking novelty quickly	1
	• helps commitment to lesson	1

	• tool to assist in the preparation of lessons	1
	• Good results from using IT in education.	3
	• The nature of the subjects requires the use of computers.	2
<b>External Causes</b>	• Modern technological advances	4
	• Keep pace with the times	9
<b>School</b>	• Provide resources room for learning.	1
	• Increase the incentives of the school.	1
	• Communication between the school and students will become easier.	1
	• Provide communication means	1
	• Provide ready-made software.	1
	• Provide better educational environment.	2
	• Provide electronic structure in the school.	2
	• Provide a centre for maintenance.	2
	• Benefit from the experiences of students and teachers.	1
	• Provide the school with the learning techniques.	2
	• It is a new policy in education.	1
	• School policy.	7
	• Benefit from the devices and techniques available to the school.	1
<b>Student</b>	• Students benefit from computers.	1
	• Motivate students.	2
	• Maintain interest and avoid boredom.	2
	• Encourage students to learn.	1
	• Improve students' technical skills	1
	• Students' satisfactory results.	3
	• Students become interested in using computers for learning.	1
	• Use of tables and statistics is convincing for students	1
	• Good management of the use of computers facilitates interaction between students.	1
	• Encourage students to learn by themselves and to search for information.	2
	• Students' enthusiasm to use computers.	3
	• Students enjoy using ICT and interact during lessons.	9

	• Contact students through email.	4
	• Expand students' perceptions and increase their knowledge	2

**Q20.** What are the three most important reasons for not using information technology and communication in teaching?

<b>Topic</b>	<b>Remarks</b>	<b>Repetition</b>
<b>Personal Reasons</b>	• Family responsibilities	3
	• I do not know any educational programs which can be used in teaching my subject	4
	• I do not have experience in using computers.	12
	• Lack of training courses.	6
	• I do not have enough experience in my career.	1
	• I do not like to use computers.	1
	• Prepare information and lessons and students do not gain advantages from them.	1
	• Lack of experience in integrating ICT in my teaching	2
	• Non-use of the computer at an early age	2
	• Lack of motivation	2
	• I am interested in other things other than computers' such as reading.	2
<b>School Management</b>	• The resources room is always busy.	3
	• The resources room has no blackboard.	1
	• Lack of maintenance and continuous breakdowns.	3
	• The numbers of computers is limited in the school.	6
	• Lack of Internet connection.	1
	• It is difficult to arrange for a data show to be used in my class	1
	• The large number of teachers reduces the opportunity to benefit from ICT use	2
	• The existing computers are old.	2
	• Not enough equipment and accessories.	5
	• Lack of school facilities.	3
	• Lack of finance	1
<b>Time</b>	• There is not enough time to prepare lessons.	9
	• There is not much time to use ICT.	4
<b>Work</b>	• There are too many students and classes.	8
	• Long and dense curriculum.	1

<b>Pressure</b>	<ul style="list-style-type: none"> <li>Assign managerial responsibilities to teachers.</li> </ul>	5
<b>Education</b>	<ul style="list-style-type: none"> <li>There is no suitable software for my subject.</li> </ul>	1
	<ul style="list-style-type: none"> <li>It is difficult to write mathematical symbols.</li> </ul>	3
	<ul style="list-style-type: none"> <li>It is difficult to move with computers.</li> </ul>	2
	<ul style="list-style-type: none"> <li>Some students do not have computers at home.</li> </ul>	1
	<ul style="list-style-type: none"> <li>Some students need a re-explanation of the lesson because it is difficult to understand.</li> </ul>	1
	<ul style="list-style-type: none"> <li>It is difficult to manage the class during presentation because of the large number of students.</li> </ul>	1
	<ul style="list-style-type: none"> <li>The content is not suitable to be presented with ICT.</li> </ul>	8
	<ul style="list-style-type: none"> <li>Using ICT in other non-educational activities.</li> </ul>	1
	<ul style="list-style-type: none"> <li>Students do not appreciate the importance of ICT use and do accept its usage in teaching</li> </ul>	3

**Q23.** Use three different words to describe how you feel towards the use of the computer.

<b>Topic</b>	<b>Remarks</b>	<b>Repetition</b>
<b>Happy and Relaxed</b>	<ul style="list-style-type: none"> <li>Enjoyable</li> </ul>	65
	<ul style="list-style-type: none"> <li>Pleasant</li> </ul>	23
	<ul style="list-style-type: none"> <li>Interesting</li> </ul>	22
	<ul style="list-style-type: none"> <li>Relaxed</li> </ul>	14
	<ul style="list-style-type: none"> <li>Exciting</li> </ul>	7
	<ul style="list-style-type: none"> <li>Happy</li> </ul>	5
	<ul style="list-style-type: none"> <li>Cool</li> </ul>	3
	<ul style="list-style-type: none"> <li>Entertaining</li> </ul>	2
	<ul style="list-style-type: none"> <li>Enthusiastic</li> </ul>	2
	<ul style="list-style-type: none"> <li>Bug-eyed</li> </ul>	1
	<ul style="list-style-type: none"> <li>Passionate</li> </ul>	1
	<ul style="list-style-type: none"> <li>Lively</li> </ul>	1
	<ul style="list-style-type: none"> <li>Happy when I find what I am looking for</li> </ul>	1
<b>Worried &amp; Anxious</b>	<ul style="list-style-type: none"> <li>Anxious</li> </ul>	4
	<ul style="list-style-type: none"> <li>Worried</li> </ul>	2
	<ul style="list-style-type: none"> <li>Unknown</li> </ul>	2
	<ul style="list-style-type: none"> <li>Frustrated</li> </ul>	1
	<ul style="list-style-type: none"> <li>Strange</li> </ul>	1
	<ul style="list-style-type: none"> <li>Some worries</li> </ul>	1

	• I want to finish the work quickly	1
	• Ambiguous	1
<b>Positive Comments</b>	• Easy	71
	• Important	10
	• Great	9
	• Attractive	5
	• Communication	5
	• Change	3
	• Good	3
	• Discipline	2
	• Necessary	2
	• Future	2
	• Needed	2
	• Nice	2
	• Renewal	2
	• Active	1
	• Full of new things	1
	• Machine that should be used for good things	1
	• Wide range of teaching possibilities	1
	• Creativity	1
	• Suitable	1
	• Social openness	1
	• Nourishing	1
	• Stimulating	1
	• Practical	1
	• Excellent	1
<b>Personal Feeling</b>	• Sincere desire to gain ICT skills and learn more about it	11
	• I love using it	10
	• Educated	3
	• Accept change	3
	• Concerned	3
	• Benefited	2



	• Regenerate my energy	1
	• Flexible	1
	• Sincere interest in ICT	1
	• Enlightened	1
	• ICT for me is like a son that I really care about, but he is tiresome and undutiful	1
	• My husband's enemy	1
	• Became one of my children	1
	• More important than my jewelry	1
	• One of my family members	1
<b>Negative Feelings</b>	• Tiring	10
	• Bored	7
	• Consumes time and effort	6
	• Exhausting	5
	• Difficult	3
	• Not beneficial	2
	• Needs extra effort	2
	• Headache	2
	• I have to use it even if I do not like it	1
	• Inevitable evil	1
	• Falling behind	1
	• Unnecessary	1
	• Mental stagnancy	1
	• No interaction	1
	• Inevitable	1
	• Complicated	1
	• Uninteresting	1
<b>Beneficial and Useful</b>	• Beneficial	25
	• Saves time and effort	22
	• Educational	8
	• Effective	7
	• Supporting	6
	• Information enrichment	5

	•Organises time	4
	•Search	3
	•Attracts attention	3
	•Fulfil aims	2
	•Makes life easier	2
	•Creative teaching	2
	•Expansion	2
	•Provides information in a simple way	2
	•Transfer of information	2
	•Has positive influence	2
	•Great method of informing	2
	•Save my ideas	2
	•Indispensable	2
	•Sea of information	2
	•Makes work easy	1
	• Change of teaching style	1
	• Information reinforcement	1
	• Attracts students' attention, especially those with visual intelligent	1
	• Assists self-educating	1
	• Stimulates the brain	1
	• You give it everything so it will give you something.	1
	• Elaborates on the curriculum	1
	• Change of routine	1
	• It is a mean not a goal,	1
	• Close to students	1
<b>Modern and Developed</b>	•Up-to-date	15
	•Modern	6
	•Advanced	4
	•Fast	4
	•Developed	2
	•Convoy technology	2
	•New	2
	• Up-to-date with technology	1
	• Change	1
	• Good try for development.	1
<b>Proud and</b>	•Self confident	10
	•Proud	4

<b>Confident</b>	•Prideful	3
	•Independent	2
	•Security	2
	• Satisfied	1
	• Somewhat confident	1
	• Not very confident of my experience	1

**Q25.** How is your school policy affected by the policies of the Ministry of Education concerning the use of learning techniques?

<b>Topic</b>	<b>Remarks</b>	<b>Repetition</b>
<b>Influenced to Great extent</b>	<u>The school is very influenced and distinct in its ICT use</u>	
	• The school goes along with MoE policies, is very interested in ICT, assists teachers to use it, and provides everything that is not provided by the MoE.	2
	• My school is committed to ICT use.	2
	• School has made very significant steps in ICT use in line with MoE policy towards this area.	2
	• It has positively influenced my school to apply any useful and modern thing for the benefit of the educational process.	
	• The policy encourages ICT use in education to a greater extent.	
	• It was the first school in Riyadh that introduced ICT in education.	
	• The school uses ICT a lot but the resources room was established by the MoE.	
	• The MoE is very pleased about my school's ICT use.	
	• More than wonderful.	
	• Excellent.	
	<u>The school is influenced significantly but faces difficulties in implementation</u>	4
	• The school's policy is compatible with MoE policies.	
	• Very good, but there are some shortcomings in the interests of ICT.	2
	• Very good, but there is a gap between school policies and MoE policies.	2
	• The school is interested in and influenced by MoE policy but there is no MoE procedure for financial support or supervision of ICT policy implementation.	
	<u>Very influenced</u>	
	• I think it is supportive of all MoE initiatives.	
	• The school is keeping up with MoE policies.	22
	• The school encourages the use of ICT following the instruction of the MoE.	



	<p>spread ICT use.</p> <p><u>There is a positive influence</u></p> <ul style="list-style-type: none"> <li>• Positive.</li> <li>• Cooperate in everything useful and beneficial</li> <li>• The school tries to improve its policy</li> <li>• Very good</li> </ul>	<p>2</p> <p>2</p>
<b>Not Influenced</b>	<p><u>Not influenced because the school policy precedes MoE policy</u></p> <ul style="list-style-type: none"> <li>• The School uses ICT more than what is stated in MoE policy.</li> <li>• School started using educational technology, including ICT, before the MoE.</li> <li>• Our school is considered one of the pioneers in ICT use in teaching and the MoE and others can benefit from our experience.</li> <li>• Our school is very interested in using ICT during lessons, in addition to modern teaching methods and urges teachers to attend training courses.</li> <li>• The school is not influenced because its policy is more advanced and precedes MoE policy.</li> <li>• The school used ICT before the MoE advocated its use and is therefore ahead of MoE policy.</li> <li>• My school encourages ICT use in education more than the MoE.</li> <li>• The school works on developing MoE policy.</li> <li>• The school is not influenced and has its own policy.</li> <li>• The school encourages the use of all modern methods in education.</li> </ul> <p><u>Not influenced because the MoE lacks procedures to supervise and ensure implementation of its policies</u></p> <ul style="list-style-type: none"> <li>• Bad.</li> <li>• Weak.</li> <li>• Not influenced.</li> <li>• Very weakly influenced because MoE policy does not put into consideration methods of implementation.</li> <li>• Not influenced at all.</li> <li>• The school is not influenced significantly, with the exception of the use of the resources room.</li> <li>• I do not see any impact of MoE policy on the school because the school does not have a clear policy towards the use of ICT.</li> <li>• Not influenced and still tries to cope with ICT, but it lacks MoE support by providing hardware.</li> <li>• I cannot see anything worth mentioning.</li> <li>• I believe that teachers' policies have a greater impact on the educational process than the school administration's policies.</li> </ul>	<p>3</p> <p>3</p> <p>3</p> <p>5</p> <p>2</p> <p>2</p>
<b>I do not know</b>	<ul style="list-style-type: none"> <li>• I do not know.</li> <li>• You should direct this question to the school administration.</li> <li>• I do not know the MoE policy or my school policy.</li> </ul>	9
<b>Full</b>	<u>MoE policies are fully implemented but through schools' own</u>	



	<ul style="list-style-type: none"> <li>• The school tries to apply educational technology as much as possible.</li> <li>• School tries to use ICT in the best and possible way.</li> <li>• Very simple.</li> </ul>	2 2
<b>Not Applied</b>	<ul style="list-style-type: none"> <li>• School does not apply MoE policies.</li> <li>• Many of the policies that we read about are not applied in schools and if so, they are being applied by force.</li> <li>• The policies of the MoE are not fully applied.</li> <li>• The school barely applies MoE policies.</li> </ul>	

### **Problems in the application of policies**

- The MoE is the first obstacle in the use of ICT in schools, for example, the MoE limits the use of computers in schools. It does not allow the introduction of the DSL service in schools and sometimes in some schools the head teacher bears the costs at him/her self. There are not enough computers for all students, for example, a school with around 1300 students has only 50 computers for them and there are no special computers for teachers. The MoE sells laptops to teachers through easy to pay instalments plus 12% interest. It also limits the use of software unless it is provided by the MoE and usually the software is old. The training courses held at the Computer Club are paid for by teacher S.R 200 (around £30).
- MoE does not facilitate implementation of its policies.
- Schools apply policies without financial support from the MoE.(3 comments)
- The policy is hindered by lack of facilities (2 comments).
- MoE policy does not take into consideration methods of implementation.
- MoE policy is read about in newspapers without application.
- There is a gap between school policies and MoE policies.
- MoE lacks mechanism for supporting or supervising policy implementation.
- MoE policies exist only on paper.
- MoE does not support ICT use because it does not provide enough hardware.
- MoE requires schools to apply its policies without training teachers or even administrative staff.

**Q30.** What do you believe will happen in the near future?

<b>Topic</b>	<b>Remarks</b>	<b>Repetition</b>
<b>School Facilities</b>	• More resources rooms in schools.	2
	• Electronic bags.	1
	• Provide Internet connection in schools.	3
	• Use smart board.	5
	• Provide computer for each student.	2
	• Take care of computer labs in the school.	1

	• The idea of smart classes equipped with latest educational technology will be adopted in most schools.	1
	• Provide the curriculum on CD.	4
	• Disappearance of textbooks and daily newspapers and change and shift to electronic media.	1
<b>Education</b>	• Widespread ICT use at all levels.	9
	• Improvement in education in Saudi Arabia.	2
	• The level of reading and writing skills will weaken among youths.	2
	• The communication between student and teacher will be through e-mail, this will help to evaluate homework and activities	1
	• Increasing interest in e-learning.	2
	• Students' evaluation will be through the Internet.	1
	• Most students will have experience with ICT.	2
	• Students will learn somethings through ICT that may weaken what they have learnt before in the school or in the mosque.	1
	• Students will learn through the computer many things, which they did not learn from the school.	1
	• Make use of SMS to remind students of information.	1
	• Increase tendency for homeschooling at the secondary level.	2
	• Distance online learning.	2
	• There will be many electronic schools.	1
	• All lessons will be delivered in electronic format.	1
<b>Training</b>	• Train all teachers in computer use.	4
	• Upgrading the level of all educationalists through ongoing training courses.	1
	• Raising ICT awareness among educationalists through training courses.	1
<b>Education Policy</b>	• A change in educational policy, but we do not know if it is for better or for worse.	1
	• In the beginning, openness always leads to negative results, then there is reflection, and we then have evaluation.	1
	• Try to merge and make subjects easier.	1
	• Develop MoE policy to move towards electronic learning.	1
	• Oblige teachers to use ICT in teaching.	1



<b>Teacher</b>	• The teacher's role will be secondary in e-learning.	2
	• The teacher's role will remain essential in the educational process whatever the role of this technology in our lives.	1
	• If the teacher will not change and tries to cope with educational technology s/he will find him/herself alone.	1
	• Increasing interest among teachers to learn ICT skills.	3
<b>Pessimistic view</b>	• I do not believe that the near future is better, but there is still hope.	1
	• I am not very optimistic if the MoE continues to play a minor role.	1
	• I am afraid the West will bombard us with its ideology. In the absence of parenting and school guidance, there will be a danger from ICT and other new means of communication.	1
<b>The world around us</b>	• In general, there will be a revolution in ICT use.	2
	• Widespread e-learning.	3
	• There is another developed and improved generation of computers according to NASA.	1

**Q31.** What do you wish to happen in the future?

Comprehensive development of education.

Radical change in the curriculum.

Continuous development for teachers.

<b>Topic</b>	<b>Remarks</b>	<b>Repetition</b>
<b>Teacher</b>	<u>Take care of the teacher and not pressure him/her with responsibilities</u>	
	• Respect knowledge and the teacher.	2
	• Develop the teacher	2
	• Give the teacher his/her rights.	2
	• Give the teacher what he/she deserves and encourage him/her in all respects.	
	• Concentrate on the teacher's knowledge and try not to add more pressure on him/her.	
	• We have to respect the teacher and try not to disdain him/her or the curriculum that builds a generation united and faithful to their religion and country.	
	• Support the psychology of the teacher and do not negatively affect him physically, psychologically and financially.	
	• We should take care of the teacher and not put him under pressure from responsibilities to give him/her the opportunity to be distinguished.	4
	• Reduce the administrative burdens of the teacher and focus on their main function which is teaching.	
	• Reduce the workload of the teacher, so s/he can prepare lessons in	

	<p>a creative way.</p> <ul style="list-style-type: none"> <li>• Give the teacher more freedom to play his/her role in teaching and selecting the syllabus of the curriculum.</li> <li>• To do without a lessons preparation notebook.</li> <li>• Do not call off the role of the teacher.</li> </ul> <p><u>Improve teacher preparation in Faculty of Education</u></p> <ul style="list-style-type: none"> <li>• Train teacher in ICT skills before graduating.</li> <li>• Integrate ICT skills and ICT application in education skills in BA programmes.</li> <li>• Train graduate teachers in ICT use.</li> <li>• Add technology subjects in teacher preparation courses.</li> </ul> <p><u>A teacher who is aware of ICT importance and a good user of it</u></p> <ul style="list-style-type: none"> <li>• Teacher that can interact with modern technology.</li> <li>• Continuous teacher development courses and associate it with material incentives.</li> <li>• Raise awareness among teachers of the benefits of ICT use</li> <li>• More use of ICT in education and oblige teachers to use it</li> <li>• Teachers' view becomes optimistic and has the ability to develop.</li> <li>• Motivate teachers in different ways to use ICT.</li> <li>• Inform teachers of MoE policies.</li> <li>• Improve and develop the way of thinking of teachers and students.</li> </ul>	<p>5</p> <p>4</p> <p>2</p> <p>3</p>
<b>Education</b>	<p><u>Comprehensive development of education</u></p> <ul style="list-style-type: none"> <li>• Develop the learning to be flexible.</li> <li>• Substantial change in education rather than external change.</li> <li>• A huge coup in education.</li> <li>• The learning should be advanced and developed.</li> <li>• Develop the level of students and the educational process in general.</li> <li>• Avoid routine in the educational process</li> <li>• All our schools should be pioneers.</li> <li>• Apply e-learning.</li> <li>• The learning should be purely electronic.</li> <li>• The objectives of education should be achieved.</li> <li>• The development should be comprehensive and include students, teachers, curriculum, and school environment.</li> <li>• To reach the level of education in developed countries.</li> <li>• We should achieve the School of the future.</li> <li>• Make the educational process easier and less time consuming</li> <li>• Develop the educational process to be better and more practical than theoretical.</li> <li>• Develop learning to virtual and distance e-learning.</li> <li>• Application of distance learning.</li> <li>• To improve and develop educationalists in Saudi Arabia.</li> <li>• The administration should cooperate more to facilitate ICT use in education.</li> </ul> <p><u>Methods to develop education</u></p> <ul style="list-style-type: none"> <li>• Avoid memorising and increase training.</li> </ul>	<p>2</p> <p>3</p> <p>2</p> <p>2</p> <p>2</p> <p>2</p> <p>2</p>

	<ul style="list-style-type: none"> <li>• Use games that promote intelligence, thinking and logic skills to develop students' brains.</li> <li>• Learning through entertainment (electronic learning games).</li> <li>• Reduce writing on the blackboard and use of notebooks until finally we stop using them.</li> <li>• Send homework and work sheets by email or the school's website.</li> <li>• Move to vocational education for boys and girls with few differences.</li> <li>• Use computers reasonably. Students' time should not be wasted on useless things.</li> <li>• Take advantage of the computer in providing useful information for the educational process.</li> <li>• I wish to use ICT more in educational aspects.</li> <li>• Learn by using communication and the Internet.</li> <li>• Full use of ICT and its applications in learning.</li> <li>• Use computer in a reasonable way.</li> <li>• Full dependency on ICT in education.</li> <li>• Use ICT when it is needed to add something different to traditional methods of teaching and not be a goal in itself.</li> <li>• Use ICT in the right way.</li> <li>• Use ICT in useful way to give the required results.</li> <li>• Be aware of the importance of ICT in education.</li> <li>• ICT should serve the needs of special needs students.</li> <li>• No need for public education</li> </ul>	2
	<ul style="list-style-type: none"> <li>• <u>Develop professional educational software</u></li> <li>• Prepare scientific and comprehensive encyclopaedias for all curriculums and they should contain photos and videos in the Arabic language.</li> <li>• Design software for mathematics.</li> <li>• Develop educational software for all subjects in Arabic.</li> <li>• Develop professional scientific software to suit all subjects.</li> <li>• Develop software suitable for scientific subjects</li> </ul>	3
	<ul style="list-style-type: none"> <li>• <u>Develop and modernise the curriculum</u></li> <li>• Teach the English language.</li> <li>• Teach computer skills from the primary years.</li> <li>• Develop the ICT curriculum.</li> <li>• Fully integrate ICT use with subject teaching from the primary years.</li> <li>• Teach a subject using modern communication technology to benefit youth but also assist in helping them maintain their moral values and religion.</li> <li>• ICT subject should be core subject in all years.</li> <li>• To get rid of the old curriculum that has been taught for a long time.</li> <li>• The current curriculum tries to deliver cultural awareness through simple principles such as "you should not write on walls", there are other, better means which are folk stories and social stories. In</li> </ul>	2
		2

	<p>doing so, we will gain three benefits at once, to teach qualities of citizenship, teach national culture, and improve language skills.</p> <ul style="list-style-type: none"> <li>• A complete and scientific electronic curriculum.</li> <li>• Reduce curriculum density.</li> <li>• Focus on English language and ICT skills to benefit from the Internet because they are the main means of communication.</li> <li>• Relate education with reality.</li> </ul> <p><u>Spread ICT use in all schools</u></p> <ul style="list-style-type: none"> <li>• Make use of ICT in teaching students.</li> </ul> <p>Apply ICT and Internet use in all schools and in an advanced way.</p> <ul style="list-style-type: none"> <li>• All schools use e-learning in all classes.</li> <li>• Widespread use of ICT to serve education.</li> <li>• Widespread ICT use in all schools and not only in advanced schools.</li> </ul>	4
<b>Student</b>	<p><u>Students' interest in seeking knowledge</u></p> <ul style="list-style-type: none"> <li>• Students interest in seeking knowledge only.</li> <li>• The student becomes a researcher not a receiver only of information.</li> <li>• The most important is the information not the degree.</li> <li>• Students will be more serious in learning to achieve learning goals.</li> <li>• I hope that students understand the importance of education even if the means of better education are not available.</li> <li>• The student will understand the importance of education, especially with the development of educational technology which was not available before.</li> <li>• Students should be interested in modern technology to access information and not for entertainment and misuse.</li> </ul> <p><u>Positive change in students' personality</u></p> <ul style="list-style-type: none"> <li>• The student will be a participant in the educational process.</li> <li>• Have a conscious generation and practitioner of modern technology in education and use it in their learning.</li> <li>• Represent the ideal student in personality and knowledge.</li> <li>• Apply what they have studied.</li> <li>• Use technology for themselves and their nation's benefit.</li> <li>• Focus on building students' personalities.</li> <li>• Focus on student's behaviour as much as we focus on technical abilities.</li> <li>• The student role should be more than it is now.</li> <li>• I hope that students realise that the teacher is the real source of knowledge, who feeds the mind and spirit.</li> <li>• Students must realise that these modern means are merely machines, which need someone to use them in order to enter into their wide world.</li> </ul> <p><u>Confident ICT user</u></p> <ul style="list-style-type: none"> <li>• The books will all be electronic.</li> </ul>	<p>3</p> <p>2</p> <p>2</p> <p>2</p>

	<ul style="list-style-type: none"> <li>• All students will reach the required level in using ICT.</li> <li>• Educate students in the ideal way of using technology.</li> <li>• Invent ways to increase motivation for learning.</li> <li>• Student will be able to use ICT usefully.</li> <li>• Focus on graduating students who should have many skills, including manual skills.</li> <li>• Teach students how to use ICT in scientific research.</li> </ul>	2
		2
<b>School Issues</b>	<u>Equipment and schools' facilities</u> <ul style="list-style-type: none"> <li>• Provide enough equipment for teachers within the school.</li> <li>• Provide modern technical devices and well equipped rooms.</li> <li>• Provide educational technology in all schools.</li> <li>• Each student should have his own computer.</li> <li>• Change all classes into smart classes, which contain all educational technology.</li> <li>• Provide wireless Internet connection for teachers.</li> <li>• Provide students with computers to search for information.</li> <li>• Provide schools with better computers.</li> <li>• Take care of computer labs.</li> <li>• At the beginning, every five teachers will have one computer between them then every three, then every one.</li> <li>• Availability of computer labs in schools.</li> <li>• The schools become e-schools.</li> <li>• Take care of schools' equipment.</li> <li>• Availability of a computer and data show in each class.</li> <li>• Provide wireless networks in all schools</li> <li>• Use smart boards.</li> <li>• Provide a computer for each teacher and student.</li> <li>• Provide Internet access within the school.</li> <li>• Equip all classrooms with ICT, not only one class in the school.</li> <li>• Equip more than one resources room in school.</li> <li>• Provide schools with enough computers for all students.</li> <li>• Refurbish computer labs.</li> </ul> <u>Electronic Curriculum</u> <ul style="list-style-type: none"> <li>• Provide electronic curricula.</li> <li>• Provide students with text books on CD instead of books.</li> <li>• MoE intranet that contains lessons and information.</li> <li>• Provide students with Palmtops with textbooks and software integrated to be used to communicate with teachers, especially if the price is less than the total cost of printing text books from year one to year 12.</li> <li>• Provide ready made software of scientific subjects.</li> <li>• Developed Software to download scientific subjects on it.</li> <li>• I hope that books will disappear to be replaced by computers.</li> <li>• Provide every student with a laptop, with all textbooks saved electronically instead of books.</li> </ul> <u>Resources room management</u> <ul style="list-style-type: none"> <li>• Prepare a schedule for resources room use by teachers.</li> </ul>	2 2 2 6 2 3 2 2 2 2 2 4 3 3

	<u>Maintenance and technical support</u> <ul style="list-style-type: none"> <li>• Provide maintenance and technical support.</li> <li>• More focus on maintenance of school facilities.</li> </ul>	2
		2
<b>Training</b>	<ul style="list-style-type: none"> <li>• Teachers must be given ICT training courses to cope with technical development.</li> <li>• Run training courses for teachers and students.</li> <li>• Teacher should master minimum ICT skills.</li> <li>• Run free long training courses focused on subject teaching.</li> <li>• Assign ICT training responsibilities to ICT teacher in the school.</li> <li>• Focus on preparing ICT confident teachers and concentrate on training.</li> <li>• In-school training provided by ICT teacher to raise teachers' ICT skills.</li> <li>• In school training courses</li> <li>• Special training courses for teachers</li> <li>• Educate teachers and students on how to make good use of ICT.</li> <li>• Focus on teacher training before and during service.</li> <li>• Develop teachers' capabilities through continuous training.</li> <li>• Prepare teachers to integrate ICT in their teaching during their first degree.</li> <li>• Include students in training.</li> <li>• Develop teachers' skills in ICT use in education.</li> <li>• Offer free ICT training courses.</li> <li>• Set up training and educational courses during first week after summer break.</li> <li>• Set up continuous training courses</li> </ul>	2
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		9
<b>Educational Policy</b>	<u>Implement all MoE policies on ICT</u> <ul style="list-style-type: none"> <li>• Raise awareness about MoE policy so that schools can apply them, even if it will be from their own budget.</li> <li>• A comprehensive and quick implementation of all MoE policies in all schools to benefit all students equally.</li> <li>• The implementation of MoE policies should be obligatory in all schools and financially supported, not just ink on paper.</li> <li>• Oblige all schools to implement MoE policies so that all students have equal opportunities of educational services.</li> <li>• Implement MoE policies.</li> </ul> <u>Share and circulate all successful experiences and distribute opportunities fairly</u> <ul style="list-style-type: none"> <li>• Circulate the experience of ICT use to all schools.</li> <li>• Spread e-learning in all schools.</li> <li>• MoE should not focus its support on distinguished schools; the support should be equally distributed among all schools.</li> <li>• More support from the MoE and unify efforts and not depend on schools' own efforts so that students have equal educational opportunities.</li> <li>• Benefit from previous experience of developed countries with no hesitation because experience is the best proof.</li> </ul>	2
		2
		2

	<ul style="list-style-type: none"> <li>• Widespread e-learning.</li> <li>• Support schools financially and provide plans to help them in coping with the age of technology.</li> <li>• Benefit from successful schools' experiences and circulate them to all schools in the Kingdom.</li> <li>• Oblige schools to have an annual plan for integrating ICT in education.</li> </ul> <p><u>Develop curricula and evaluation methods</u></p> <ul style="list-style-type: none"> <li>• Changing the curriculum is more important than changing teaching methods.</li> <li>• Abolish the use of textbooks and blackboards.</li> <li>• Abolish using tests for evaluation and replace them with activities and worksheets.</li> <li>• Reduce the curriculum and limit subjects to 6 or 7 only.</li> <li>• Develop the curriculum to cope and keep up with the requirements of modern times.</li> <li>• Comprehensive change of the curriculum and reduce its density.</li> <li>• MoE should evaluate and manage educational websites and assign budgets and specialists for this matter.</li> </ul> <p><u>Comprehensive development of education</u></p> <ul style="list-style-type: none"> <li>• Radical and comprehensive development in education to keep pace with developed countries.</li> <li>• Connect MoE with all schools in the kingdom.</li> <li>• Exchange information between schools electronically</li> <li>• MoE should work hard to develop the educational process and educational institutions.</li> <li>• Increase the number of teachers.</li> </ul>	<p>2</p> <p>2</p> <p>2</p> <p>2</p> <p>2</p> <p>6</p> <p>5</p>
<b>General Wishes</b>	<p><u>Technology issues</u></p> <ul style="list-style-type: none"> <li>• Arab countries should develop in using technology and developing programs focused on human resources development.</li> <li>• The change should be real change not an apparent change.</li> <li>• Benefit from ICT application.</li> <li>• Change in youth's interest from searching for entertainment to searching for information and useful programs.</li> <li>• Abolition of routine in government agencies to adapt e-government.</li> <li>• The technology must not control us.</li> <li>• My children will learn the things that I have not learned about ICT.</li> <li>• Be at the same level of developed countries.</li> <li>• Create a generation which loves knowledge and starts from where we ended.</li> <li>• A remarkable increase in development.</li> <li>• Activate technology use and follow up scientific progress.</li> <li>• Cope with development and progress in the use of modern technology.</li> <li>• Make good use of ICT.</li> <li>• Explain to youth the negative aspects of ICT and consolidate the</li> </ul>	<p>2</p> <p>2</p>

	<p>positive aspects.</p> <ul style="list-style-type: none"> <li>• Widespread use of ICT even in poor cities and areas.</li> <li>• All will enjoy e-learning.</li> <li>• I wish Islamic countries would produce technology and advancement.</li> <li>• The Kingdom will become one of the pioneers of ICT use in education.</li> <li>• Increase development but do not allow technology to rule our lives.</li> </ul> <p><u>Hopes for peace and progress</u></p> <ul style="list-style-type: none"> <li>• Peace will be in the entire Arab and Islamic world.</li> <li>• The world should use technology in the service of peace.</li> <li>• Graduate an educated generation.</li> <li>• Should not forget that through our principles we will be pioneer depending on God's will.</li> <li>• The best and good will be for all.</li> <li>• No more illiteracy.</li> <li>• Progress and prosperity</li> <li>• Combine the usefulness of the old and the new.</li> </ul>	2
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## Appendix 10: Link between Research Questions and Questionnaire Items

Questionnaire Item	Corresponding Research Question
1. Age range (years)	Socio demographic background
2. Number of years in teaching	
3. What is your main teaching subject?	
4. What is your highest qualification?	
5. In your view, why should teachers if at all use ICT in their teaching?	Why are they using ICT in their teaching?
6. What type of application do you use for teaching?	How are teachers currently using ICT in their teaching?
7. I use ICT in my teaching as	How are teachers currently using ICT in their teaching?
8. In this question we want to find about your use of ICT for teaching, for lesson preparation, for other duties relating to teaching	How are teachers currently using ICT in their teaching?
9. Please list the 3 main ways you use ICT in relation to your role as a teacher	How are teachers currently using ICT in their teaching?
10. Do you have good access to a computer at home?	What are the influences supporting ICT usage? What hinders teachers' usage of ICT in teaching?
11. Do you have good access to a computer at school?	
12. How useful is it (or would it be) to have a personal computer at school?	
13. Why are you using ICT in your teaching?	Why are they using ICT in their teaching?
14. In this section, we want to find out anything which you feel either encourages you, supports you, is an incentive for you, hinders you, or puts you off, making good use of ICT for teaching and other professional duties	What are the influences supporting ICT usage? What are the motivators and incentives for using ICT in teaching? What hinders teachers' usage of ICT in teaching?
15. In your own words, list the 3 things which have had the most <i>positive influence</i> on your use of ICT in your teaching	What are the influences supporting ICT usage?
16. In your own words, list the 3 things which have most <i>hindered</i> you in terms of using ICT in your teaching	What hinders teachers' usage of ICT in teaching?
17. What are the main three reasons why you	Why are they using ICT in their teaching?

use ICT in your teaching?	What are the motivators and incentives for using ICT in teaching?
18. What are the main three reasons why you <i>don't</i> use ICT in your teaching?	What hinders teachers' usage of ICT in teaching?
19. What would you like to learn more about	What are the influences supporting ICT usage? What hinders teachers' usage of ICT in teaching?
20. We want to get your views about ICT use in education in general, not specifically in your own subject, and also find out how you see your own ICT use	How do they feel about this usage?
21. In three different words how would you describe your feelings towards ICT?	How do they feel about this usage?
22. As far as I am aware, our school ICT policy addresses the following issues	How is educational policy reflected in: 3.1 Teachers' use of ICT in their teaching?
23. We want to get your views on your school ICT policy versus the Ministry of Education's ICT policy and also find out about its influence on your perceptions towards ICT	How is educational policy reflected in: 3.2 Their feelings about ICT in education?
24. We want to get your views on the possibility of these things happening in the future.	What are teachers' views on probable / preferable future usage of ICT in education?
25. How do you think these school policies are influenced by the Ministry of Education's policy?	How is educational policy reflected in: 3.1 Teachers' use of ICT in their teaching?
26. Do you know any detail of or even have an overview of the Ministry of Education's ICT policy?	
27. You may or may not be completely aware of the details of the Ministry of Education's ICT policy. Please respond to these questions according to your understanding. Which of these if any do you think are the Ministry of Education's ICT policy?	
28. How would you describe your computer skills?	Questions 25, 26, 27, 28, and 29 are necessary to set the context and form a background to understand and appreciate the answers to the following questions.
29. How did you gain skills in using computers?	

## Appendix 11: Certificate of Ethical Research Approval

STUDENT HIGHER-LEVEL RESEARCH



School of Education and Lifelong Learning

### Certificate of ethical research approval

#### STUDENT RESEARCH/FIELDWORK/CASEWORK AND DISSERTATION/THESIS

You will need to complete this certificate when you undertake a piece of higher-level research (e.g. Masters, PhD, EdD level).

To activate this certificate you need to first sign it yourself, then have it signed by your supervisor and by the Chair of the School's Ethics Committee.

For further information on ethical educational research access the guidelines on the BERA web site: <http://www.bera.ac.uk/publications/guides.php> and view the School's statement in your handbooks.

**READ THIS FORM CAREFULLY AND THEN COMPLETE IT ON YOUR COMPUTER** (the form will expand to contain the text you enter).  
**DO NOT COMPLETE BY HAND**

**Your name:** Mrs. Afnan A. Oyaid

**Degree/Programme of Study:** PhD

**Project Supervisor(s):** Professor Patrick Dillon & Dr. Penni Tearle

**Your email address:** ao219@exeter.ac.uk

**Tel:** 07799223618

**Title of your project:** Saudi Secondary School Teachers Use, Perceptions, and Future Views of ICT in Education and Its Relation to Education Policy

**Brief description of your research project:** The research will cover these issues: ICT usage by teachers and its relation to ICT educational policy, teachers' perceptions towards the use of ICT in the teaching and learning process, and their envisions as well as their students of possible and future usage of ICT in education. These particular issues are covered because they are thought to be closely related and influential to each other; in fact they create a closed circle. The loop starts from the educational policy which will inevitably affect teachers' usage of ICT, their ICT usage is as well influenced by their perceptions of computers, and these perceptions either negative or positive are in some way influenced by the policy and how it introduces the concept of ICT in education to teachers. Teachers' perceptions of ICT will undoubtedly be reflected in their future views of ICT utilisation in education which in turn will be considered in any future ICT policy.

Chair of the School's Ethics Committee  
October 2005

**Give details of the participants in this research (giving ages of any children and/or young people involved):** There will be both teachers and students participating in this research. The students are secondary school students and their ages vary from 15 to 18 years old.

**Give details regarding the ethical issues of informed consent, anonymity and confidentiality (with special reference to any children or those with special needs)** Ethical issues related to the study will be carefully considered. In the study's first phase which contains interviews and focus groups, the researcher will clearly inform the schools' headteachers and teachers about the aims and purposes of the research and their permission will be sought to allow the researcher's access to the school students. The Students, on the other hand, will be informed about the aims and purposes of the research in two ways: first verbally from the researcher, and, second, in written form in the consent forms addressed to the students. The consent form will assure headteachers, teachers and students of their anonymity, explain their right to withdraw from the research, and will remind them of the importance of answering questions honestly to ensure the research's validity especially that all information they will give will be treated in confidentiality. In the study's second phase, the distributed questionnaires on both teachers and students will have a covering letter that explains the research's aims and purpose as well as assure them on the issues mentioned earlier. These measures are taken to ensure the study complies with educational research guidelines, such as the BERA Ethical Guidelines.

**Give details of the methods to be used for data collection and analysis and how you would ensure they do not cause any harm, detriment or unreasonable stress:** The research will utilise interviews, focus groups, and questionnaires as methods of data collection. The data will be analysed using grounded theory methods of constant comparison analysis. The researcher will maintain and ensure that interviews and focus groups will be run in a friendly environment to reduce any stress that might be caused as a result of the unusual situation.

**Give details of any other ethical issues which may arise from this project (e.g. secure storage of videos/recorded interviews/photos/completed questionnaires or special arrangements made for participants with special needs etc.):** The data collected from participants i.e. tape recorded interviews and focus groups and completed questionnaires will be securely stored in the researcher's office.

**Give details of any exceptional factors, which may raise ethical issues (e.g. potential political or ideological conflicts which may pose danger or harm to participants):** As far as the researcher is concerned discussing the issues under study will not cause any harm or danger to the participants.

*This form should now be printed out, signed by you below and sent to your supervisor to sign. Your supervisor will forward this document to the School's **Research Support Office** for the Chair of the School's Ethics Committee to countersign. A unique approval reference will be added and this certificate will be returned to you to be included at the back of your dissertation/thesis.*

**I hereby certify that I will abide by the details given above and that I undertake in my thesis to respect the dignity and privacy of those participating in this research.**

**I confirm that if my research should change radically, I will complete a further form.**

Signed: Ahnan Ouyid ..... date: 1 Feb 2007 .....

Chair of the School's Ethics Committee  
October 2005

*N.B. You should not start the fieldwork part of the project until you have the signature of your supervisor*

This project has been approved for the period: \_\_\_\_\_ until: \_\_\_\_\_  
By (above mentioned supervisor's signature): P.J. Sullivan date: End 2008

*N.B. To Supervisor: Please ensure that ethical issues are addressed annually in your report and if any changes in the research occurs a further form is completed.*

SELL unique approval reference: 2/06/07/14

Signed: Salah Ibrahim date: 23/02/2007  
Chair of the School's Ethics Committee

This form is available from  
<http://www.education.ex.ac.uk/students/index.php> then click on On-line documents.

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