

# **The Experiences of Saudi Female Teachers Using Technology in Primary Schools in Saudi Arabia**

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## **Abstract**

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**PhD University of Manchester, School of Environment, Education and Development, September 2016**

**Title: The Experiences of Saudi Female Teachers Using Technology in Primary schools in Saudi Arabia**

This qualitative study explores Saudi female teachers' experience of technology use in their practice and life. The aim is to present the voices of these female teachers living in the context of Saudi Arabia, and to document how personal characteristics, society and technology come to influence one another.

The field work was done in Saudi Arabia, with female teachers from three public-sector primary schools. The data generation included individual, semi-structured interviews with four Saudi female teachers - one from each of two schools and two from the third school - and focus groups sessions with five to six teachers - one session in each of the three schools. The focus group methodology used Ketso, which is a collaborative mind-mapping tool developed at the University of Manchester. The interview and focus group sessions were audio-recorded, transcribed and then analysed using broad principles of thematic analysis.

The data suggests that technology use affected the teachers' classroom practices, communication with others and their professional development. The teachers were active agents in this technology use, including taking responsibility for the technology use in their schools, and improvising solutions and ways of using available resources in their practice. This active role of the teachers seemed to contribute to localised use of technology, enabled the teachers to resist some of their social positions as females and teachers, and occasionally included a determination to create new positions for themselves. Overall, technology use appeared to enhance the Saudi female teachers' sense of agency, and crucially, seemed to enhance their awareness of their lived experience.

The above insights might benefit Saudi educational policy makers, other Saudi teachers as a way of sharing experiences and practices, and researchers who are interested in studying the intersection between technology and society. In addition, the study exemplifies the novel use of the Ketso collaborative mind-mapping tool as a tool for qualitative research.

## **Declaration of Original Contribution**

No portion of the work referred to in the thesis has been submitted in support of an application for another degree or qualification of this or any other university or other institute of learning.

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## **Abbreviations**

<b>ICT</b>	<b>Information and Communication Technologies</b>
<b>MoE</b>	<b>Ministry of Education</b>
<b>GPGE</b>	<b>General Presidency of Girls' Education</b>
<b>NCEDL</b>	<b>National Center for E-Learning and Distance Learning</b>
<b>SR</b>	<b>Saudi Riyals</b>
<b>ICDL</b>	<b>International Computer Driving Licence</b>

***Dedicated to my mother Fadwa Al-Tamimi***

**An inspirational woman who taught me to believe in myself, and  
whom I will always look up to.**

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## **Chapter 1: Introduction**

This study is undertaken in the Kingdom of Saudi Arabia, with a focus on the experiences of a group of Saudi female teachers using technology in their daily practice. It explores their technology use, their perceptions, the challenges they are facing, and the benefits involved in using the technology. It also explores the role the teachers take in the process of technology use. The study demonstrates the intersection between technology, society and teachers' own needs, beliefs, capital and identity. As an outcome, the teachers experience change as teachers, women and Saudis, thereby forming changes in technology affordances and in society as a whole.

The goal is to present the voices of these female teachers living in the context of Saudi Arabia. The study will not only produce an insight into technology use but also document how personal characteristics, society and technology come to influence one another. The goal is not to present a better way of using technology or the advantages and disadvantages of using it. Rather, the central concern is to investigate - based on the teachers' own experiences - the influence the teachers have on their use of technology and the ways technology has an impact on their experiences as females and teachers. The study also investigates how, combined, these factors have created a context-specific use of technology that has an impact on the teachers, technology and the broader society in general.

There is a vast body of research on ways of adapting technology in the education process (Bitner & Bitner, 2002; Chen, 2008; Cuban et al., 2001; Koehler et al., 2007; Marwan & Sweeney, 2010). Scholars like Richardson (2013) stresses that providing technology equipment to schools does not mean that technology is being integrated into the teaching and learning process. Scholars also realise the important role that teachers have in the process of integrating technology. Some studies looked at the influence of teachers' attitudes and beliefs and how these affected their practice of using technology (Teo et al., 2008). Others stress that technology integration is context-specific and that it is crucial to recognise the context that teachers are working in. They focus more on the experiences of using technology with education rather than on the technology itself as a way to study the impact of technology in teaching and learning (Cilesiz 2011; Jordan, 2008). Cilesiz (2011) states that getting a better sense of the effect of technologies in teaching and learning can be achieved by concentrating on individual real-life experiences of teachers, as well as students adopting technology in classroom interactions, and the ways these experiences reflect on societies in general.

Regarding the Saudi context, there are growing numbers of teachers and students using technology in their teaching and learning practices, but there is still a need to concentrate on teachers' experiences of using it and the subsequent impact on Saudi society as a whole. In her study, Jamjoom (2010) states that today there exists a generation of Saudi female teachers who are believed to be the key players in the development of education, however, they lack voice and presence in current research. This has made it crucial to highlight their lived realities through research. Regarding technology use, Oyaid (2009) seeks to obtain deeper insight into Saudi secondary school teachers' ICT usage. She links teachers' practices of using technology with educational policy, teachers' perceptions and attitudes towards the use of ICT in teaching and learning process. Al Lily (2013) studies the use of technology in Saudi society, by looking in particular into higher education. He states that technology is employed as a problem-solving tool in the Saudi context and is being continuously reshaped based on the community requirements and challenges, thus conferring new values on technologies. He emphasises the need to examine the views and experiences of Saudi women regarding incorporating technology in their lives to help capture the challenges they face in their experiences.

The literature lacks research that focuses on female teachers in Saudi Arabia and how they may influence and be influenced by technology in their practice. Therefore, this study is important because it highlights the experiences of female teachers working in public Saudi schools that show their use of technology and the context where these practices took place. It shows technology as part of the social fabric of teachers' lives, which provides a holistic and real view of teachers' situation.

This study is believed to give an insight into the experiences of teachers working in the field of Saudi schools interacting with students, policies, curriculum, technology, supervisors, training facilities and the society as a whole. This insight will benefit Saudi educational policy makers. By giving them the opportunity to know from teachers' own experiences the ways policies are being implemented, the challenges teachers are going through and the ways they think of their own problems as well as solutions teachers are suggesting. This study may also benefit other Saudi teachers as a way of sharing experiences and practices. It provides teachers the opportunity to compare their own experiences to the ones presented in this study that may help them reflect and think critically of their own situations. This study also may benefit readers who are interested in studying the intersection between technology and society and ways people localise technology to fit their own needs and societies. Also

readers who are interested in looking at women and technology, although this study is not in the field of gender and women studies but it provides examples of lived experiences of women in the context of Saudi Arabia. It also provides a new way of approaching research participants by using Ketso with focus group method that may benefit researchers who want to explore and use Ketso in their future projects.

### **1.1 Motivation for the Study**

Being a Saudi female myself, born and educated in the context of Saudi Arabia, I have observed the development and changes in education and also in Saudi lifestyle. My personal experiences as a student in Saudi schools, then entering a Saudi university, after that, teaching and training in Saudi schools, where I worked with students and teachers, gave me an insight into areas with which to understand the Saudi context. As a researcher, I believe in the power of research and that a teacher is the key component in the process of integrating technology in education. These factors motivated me to investigate the experiences of Saudi female teachers in greater depth through a qualitative study.

When I was a student in school, I went to private school that taught English and French as additional languages from a young age. Back then, different information technologies were not available (desktop computers were not popular in the 1980s and 1990s), but we still enjoyed collaborative and new ways of teaching and learning. However, the school was still under the control of the Ministry of Education, and I remember how frustrated we felt when we wanted to do activities with our teachers like sport tournaments or plays but were not allowed because of the rigid rules of the Ministry regarding female schools. After high school I entered a Saudi university to study computer science. At university, I had my first computer and started interacting with technology by programming, designing software, and developing websites. As a student in a female university in Saudi Arabia, I had experiences with technology as a social problem-solving tool. For example, some of the courses I studied were delivered by male lecturers, and since the university is female-only, we had rooms with TV screens hanging in the corners of the rooms, or in some rooms a projector was used to transmit a live broadcast of the lecture from the male campus to the female campus. In this case, both female and male students studied the same course with the same lecturer but in different campuses. I remember I used to find these lectures very challenging, because I had problems reading the hand writing of the lecturer from the TV screen, plus the process of asking a question where we needed to join a queue to the telephone from which we could ring

the lecturer in the middle of the class. In such an environment, I stopped asking questions in the first place. Also, during exam season or if we had a question regarding an assignment, it was very hard to reach the lecturer during his office hours, and in many cases they did not answer. Although this broadcast system allowed us (female students) to be taught subjects we could not otherwise learn without the system, we did struggle with it.

After finishing my bachelor's degree, I decided to take up teaching and training as my profession. I worked in a girls' school in Jeddah<sup>1</sup>, where I was first employed as a computer teacher, then an IT assistant. I then started training teachers in the school in the use of the whiteboard software and other technologies that were available in the school. When I was training teachers I sought permission to attend lessons to observe the ways teachers implemented the skills they were acquiring from the training in their classroom delivery. This developed my relationships with teachers, and I was able to discuss many aspects of their practices with them. Subsequently, I developed an interest in integrating technology with education and how teachers find it challenging to link their technology skills, the curriculum and their teaching pedagogies. This experience also made me believe in the importance of teachers in the process of integrating technology and the crucial role they play. This interest motivated me to take my MA degree in Digital Technology, Communication and Education.

When choosing the topic of my doctoral research, I realised the scarcity of studies concerning teachers using technology in Saudi schools generally and female teachers specifically. Some researchers mention the need to conduct studies that concentrate more on the teachers' experiences, perspectives and daily lives to help capture not only the practice but the personal and social dynamics in the Saudi context (for example, Al Lily, 2013, Jamjoom, 2010). I was influenced by the notion of teacher's voice proposed by some scholars like Goodson (1991, 1992), which views teachers as active agents in the educational process and stresses the importance of studying teachers' contextualised experiences. Therefore, I felt the need to conduct a study that looks closely at the lived experiences of teachers and what they are going through in their daily basis.

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<sup>1</sup> Jeddah is the second biggest city in Saudi Arabia after the capital Riyadh; it is located on the west coast of Saudi Arabia. It is considered the economic and tourism capital of the country. For more information about the city visit <https://www.jeddah.gov.sa/english/index.php>.



In the first stage of this project, data collection, I collaborated with both private and public school teachers. After listening to the teachers' stories and realising the complexity of the data gathered, I decided to concentrate in this study on public schools and use a smaller sample than I had originally planned. The teachers who collaborated in the study were eager to share their experiences and extend their voices to others through the study. Some asked me to cite them using their real names in the study, as a way of showing that they are confident of what they are saying and happy to be part of it. The teachers allowed me to audio-record the interviews and focus group sessions even though it is against Saudi norms, which view a female voice as something private, but they said that "as long as it is for research and to make our situation better and to have our voices heard, we don't mind". The way the teachers believed in me and the study gave me motivation to continue and gave me a sense of responsibility, and that what I am doing is worthwhile and important.

## **1.2 Research Aims and Questions**

The general aim of the study is to present an in-depth picture of experiences of Saudi teachers using technology in their practice by placing the teacher as the main focus.

This study's objective is to create a research project that puts the teachers as the main focus and gives them the opportunity to share their experiences regarding their use of technology. This objective was addressed through the data collection methods used in the project that helped create a friendly non-threatening environment for the teachers to share their experiences (using focus groups that were facilitated by the researcher and the Ketso kit (see section 4.2 for more information on the Ketso kit), and using interviews that were semi-structured that aimed to give the teachers the chance to talk about their daily routines and the development of their use of technology).

This objective helped to uncover the teachers' use of technology that is meaningful to them, applications of technology use that helped teacher's gain control over situations in their everyday lives. It also helped present ways teachers elaborate local rational conceptions of the technology and its application methods that resonate with their plans and interests in their individual situations. This objective is not only to present a use of technology but to move a step further from viewing technology use as problem-solving tool to include the ways it changed the reality of Saudi female teachers and the ways they perceive themselves and the

context of which they are part. This was addressed by answering the research questions that concentrated on the following points:

- To present the role that teachers are taking in the process of using technology in their practice, and the ways their characteristics, realities and positions have impacted their role. This was addressed through answering the first research question:
  - 1) How do Saudi female teachers influence their own use of technology in their practice?
- To highlight the technologies they used and the impact of technology affordances on their experiences as teachers and females in this context. This was addressed through the second research question:
  - 2) How does the use of technology enable Saudi female teachers to change their professional experiences?
- To explain the impact of the use of technology in changing the views of the lived experiences of teachers and the ways it has impacted teachers' identity and sense of agency. This was addressed through the third research question:
  - 3) How does the use of technology change Saudi female teachers' views of their lived experience?

### **1.3 Structure**

This *first chapter* establishes the grounds of the study by giving a general overview of the topic in addition to presenting the research aim and objectives as well as the research questions. Furthermore, it presents the main motivations for me to conduct the study. The last part of this chapter describes how the thesis is organised and structured.

The *second chapter* situates the study in relation to the relevant literature concerning the Saudi context and the relationship between women and technology. It presents an overview of the history of female education in Saudi Arabia (section 2.1), followed by a discussion of the position of women in Saudi Arabia, including the main benefits and challenges they are facing, particularly as working women and then introducing the notion of 'voice' in different literature (section 2.2). Then, the chapter introduces technology by shedding light on the relationship between women, women's agency and technology (section 2.3), and finally, it looks at studies that talk about Saudi women and technology (section 2.4).

The *third chapter* concentrates more on the field of educational technology. It presents an overview of studies that look at integrating technology with education, barriers to this

integration, and the connection between teachers' beliefs, attitudes and emotions and the integration of technology in their practice (section 3.1). This is followed by studies that look more specifically at the use of technology in the Saudi educational system (section 3.2), and then presents some of the recent policies and reforms in Saudi Arabia regarding integrating technology into education (section 3.3). Next, the chapter highlights studies presenting the teachers' experiences in Saudi schools of using technology in their practice (section 3.4). Finally, the last section explores the gap in the literature and the ways this study is filling this gap (section 3.5).

At this point, it is worth mentioning that although the two literature chapters - chapters two and three - tried to anticipate what concepts and conceptual frameworks might be used in the later data analysis, the exact importance and use of some of the concepts that underpin the later analysis were not evident until after I had collected the data and got into the analysis process. Therefore, these concepts and the stance I took on them are discussed at the point where they emerged in the analysis. This includes the 'positionality' of the teachers (see introduction to chapter 6), the notion of 'capital' (see section 6.1), the notion of 'agency' (see section 8.1), and Gee's identity model (see section 8.3). *Chapter 4* is the methodology chapter that outlines the research position, methods used for data collection and methods of analysis. It is organised around three main sections. The first section situates the study in relation to other research paradigms and talks about the researcher's positionality and theoretical understandings (section 4.1). The second section highlights the notion of teachers' voice and the ways the study presents these voices by outlining the sampling techniques and the data collection methods that are interviews and focus groups using Ketso (section 4.2). The third section concentrates on the analysis procedure by giving detailed steps of the process and details around conducting a multilingual study (section 4.3).

*Chapter 5* introduces the study participants by giving an overview of the participants' lives, situation and context (sections 5.1 and 5.2). It also includes an introduction to the analysis by explaining the structure and the sequence of the following chapters (section 5.3).

*Chapter 6* is the first discussion chapter, which answers the first research question: *How do Saudi female teachers influence their own use of technology in their practice?* In this chapter, findings from both interviews and focus groups present the ways in which the teachers' characteristics and decisions influence technology use. Here, I introduce the notion of positionality and the notion of capital. I use both concepts to help understand the roles

teachers took in the process of using technology and ways they were able to take these roles. The chapter is organised into four sections, including a first section building on Bourdieu's (1985, 1992) cultural, social and economic capital to offer insights into the reasons teachers chose to take a specific action and to explain their choices (section 6.1). This is followed by three sections which represent the three main themes generated from the initial codes: the teachers challenging their social positions and showing determination to create new positions, (section 6.2), taking responsibility (section 6.3), and improvising solutions (section 6.4). In these sections, I build on the notion of social position offered by Holland and Leander (2004) to help reveal the different positions that teachers were offered by their society and the new positions they constructed that enabled them to use technology in their practice. Finally, there is a discussion section where the main findings are discussed (section 6.5).

*Chapter 7* answers the second research question: *How does the use of technology enable Saudi female teachers to change their professional experiences?* Here I use the notion of technology affordances to help understand how technology integration changed the experiences of female Saudi teachers. The chapter also connects to literature addressing the relationship between women and technology and the notion of localising technology to fit into society. The chapter is organised into three sections: enabling Saudi female teachers as learners (section 7.1), enabling Saudi female teachers' communication (section 7.2), and enabling Saudi female teachers as teachers (section 7.3). Finally, there is another discussion section where the main findings of the chapter are discussed (section 7.4).

*Chapter 8* answers the third research question: *How does the use of technology change Saudi female teachers' views of their lived experiences?* This chapter highlights the impact of using technology on the lives of Saudi female teachers. It fits with studies that address agency and looks at the impact of technology use on teachers' identity. It also fits with studies undertaken in the Saudi context regarding the use of technology in Saudi schools. It is divided into two main sections: the first draws on the work of Bakardjieva (2005) and Sewell (1992) to focus on how technology use may increase teachers' sense of agency (section 8.1), and the second focuses on how technology use leads teachers to become more aware of their reality (section 8.2). Finally, there is a discussion section which draws on Gee's identity model to create an overall account of how the use of technology changed the female teachers' views of their lived experience (section 8.3).

*Chapter 9* is the contribution chapter that brings together all four discussion chapters by outlining the main contributions of the study. The chapter is divided into sections according to the main contributions. The first contribution to the study is about the teachers being active contributors in the process of technology use (section 9.1). The second contribution is the teachers localising technology for their own needs and society creating new technology affordances (section 9.2). The third contribution is technology enhancing the teachers' sense of agency (section 9.3). The fourth contribution is technology creating new realities for Saudi female teachers (section 9.4). The fourth contribution is the methodological contribution of using Ketso in qualitative research (section 9.5). Then, recommendations for Saudi policy makers and teachers working in the field are presented (section 9.6), and a discussion of the limitations of the study and suggestions for future research is covered (section 9.7). The chapter and thesis concludes with a section that provides final reflective remarks (section 9.8).

In the next chapter, I review the literature that addresses the education and positioning of women in Saudi society and some examples of their technology use. This is an attempt to help the reader understand the context of the study and to help situate the experiences that are presented in the following chapters.

## **Chapter 2: Technology and the Context of Saudi Arabia**

Topics concerning women in Saudi Arabia are complex and controversial as cultural traditions and local customs play a major role in the experiences of women in the Kingdom (Islam, 2014). In order to answer these study research questions around Saudi female teachers' experiences of integrating technology, I came to realise how important it is to understand the context of where these women were born, raised, educated and employed. This chapter is part of understanding the context that is crucial before engaging with the experiences of Saudi female teachers presented afterwards. It reviews some of the issues and aspects of female standpoints in the Saudi context and how technology is changing experiences in Saudi society.

This chapter starts by giving a brief overview of the history of education in the Kingdom, highlighting the development of female education. This is followed by the positioning of women in the Saudi social structure, which is directly connected to both religious and cultural aspects. Then, a general look at technology and women follows, listing some examples of using technology in promoting women rights in the Arab region. Finally, there is a more in-depth view of how the development of technology in Saudi Arabia has affected Saudi females and the ways this is changing the social structure of the Kingdom.

### **2.1 Saudi Female Education**

Saudi Arabia is a country located in southwest Asia with around 20 million citizens (WPR, 2014). The country was established by King Abdulaziz Ibn Abdul Rahaman Al Saud in 1932, creating a monarchy that has been ruled by the sons and grandsons of the first King. Islam is the official religion and Arabic is the official language (Hamdan, 2005). Saudi Arabia enjoys a special status amongst Islamic countries because it is home to the two holy cities of Mecca and Medina, located in the west province where the birth of Islam took place. Saudi Arabia adopts the Islamic laws (Al-Sharia): "Saudi Arabia is governed by an Islamic monarchy in which Islam makes up the civil, cultural, economic, legal, political and social fabric of the country" (Mellahi, 2007, p. 88). This Islamic monarchy created historical religious roots that are embedded within the Saudi culture, which is the rationale behind the Saudi societal identity (Alselaime, 2014).

Before King Abdulaziz unified the country, education took place in 'kuttab' schools located in local mosques that existed mostly in the western region of the country, Hijaz. Both girls and boys used to attend kuttab either in separate locations or, for children under six, together.

The main purpose of Kuttab was to study and memorise the Holy book Quran and religious texts, and to learn Islamic practices (Rugh, 2002). The teaching of girls also took place in the form of private tutorials by professional male or female Quran readers. At that time, education of girls ceased at puberty (Hamdan, 2005). Before the country was unified, there were four private schools for boys also located in Hijaz, established by Hijazi merchants, which offered a wide range of subjects: for example, Al-Falah school, which was established in 1905 by the merchant Muhammad Ali-Riza (Al-Rasheed, 2013).

Soon after King Abdulaziz unified the country of Saudi Arabia in 1932, he established the Directorate of Education that, in 1938, confirmed that all schools in the Kingdom would operate under its regulations and control (Rugh, 2002). King Abdulaziz introduced an extensive programme to establish boys' schools around the Kingdom, and in 1951, the country had 226 boys schools with 29,887 students (Arabia, 2013). In 1953, the Directorate of Education became the Ministry of Education (Rugh, 2002).

Although King Abdulaziz believed in educating women, it was during the King Saud era<sup>2</sup> (1953-1964) when the first public school for girls was opened in 1960. In response to that, in September 1963, the government had to send official forces to break up demonstrations in the city of Buraydah<sup>3</sup>, where much of the opposition to girls' education was located. At that time King Faisal, who was still a prince at that time, managed to convince tribal Bedouins of the importance of formal schooling for women (Huyette, 1985), but he did not force parents to take their daughters to school. Instead, he stressed that it was not obligatory: it was up to the family if they wish to take their daughters to school or not (Hamdan, 2005).

It was King Faisal's era (1964-1975) that made great contributions to female education in Saudi Arabia. It was Iffat Al Thunayan, King Faisal's wife, who pushed devotedly for the education of women in Saudi Arabia. She had a goal to give women of Saudi Arabia the option to pursue science, language and other subjects. Before King Faisal became the King, both he and Queen-to-be Iffat established the first girls' school in 1956 located in Jeddah in

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<sup>2</sup> King Saud was the oldest son of King Abdulaziz, who ruled the country from 1953-1964, following the death of his father (King Abdulaziz) (Royal Embassy of Saudi Arabia in Washington, 2016).

<sup>3</sup> Buraydah is the capital of Al-Qassim Province in north central Saudi Arabia. It is known as the city of contradictions; its citizens are composed of farmers, trading merchants and Bedouin and are known to hold tight to their roots, traditions and beliefs. However, at the same time, they have a tendency to support change, albeit their own view of change. It is seen as the source of 'Salafia' or 'Wahabeia' (Al-Awsat, 2005).

Hijaz. This was named *Dar Al Hanan*, “The House of the Affection” (Hamdan, 2005). It was the first girls’ school in the Kingdom, opening a few years before the first public school for girls in Riyadh. *Dar Al Hanan* is a private school, which mainly Hijazi merchants took their daughters to study instead of sending them to nearby countries like Egypt to be educated. At the time, Iffat argued with many conservative religious scholars, saying that the future generations’ spirituality and manners will be improved if they are raised by mothers who are educated. Iffat also established the first girls’ college in Riyadh called *Kulliyyat Al Banat*, or the Girls’ College. Additionally, she established what is called *Al Nahdah AlSaudiayh*, a Saudi progressive association that provides free classes in Riyadh for illiterate women, classes on hygiene and childcare, and courses on foreign languages and typing. All classes were funded and run by members of the association. King Faisal supported his wife, when asked about female education he would reply, “Is there anything in the Holy Quran which forbids the education of women?” He further stated, “We have no cause for argument, God enjoins learning on every Muslim man and women” (Lacey, 1981, p. 368). They both believed that Saudi Arabia’s future included equal education for men and women (Hamdan, 2005, p. 50).

Female education faced huge resistance from Islamic scholars, *ulama*, and conservatives in the country when it first started. These groups finally agreed on female education but under the conditions that it will be fully segregated from boys’ education and that the *ulama* will take full authority over all girls’ education from primary schools up to university. The Ministry of Education created a division at a ministerial level that was controlled by *ulama* and named it the General Presidency of Girls’ Education (GPGE), which was established in 1959, working parallel to but independent from the Ministry of Education, which was responsible only for boys’ education (Islam, 2014). The aim of the Department of Religious Guidance was to ensure females received an education that was considered suitable to make them good Muslim mothers and wives (Hamdan, 2005; Jamjoom & Kelly, 2013). The purpose of educating a girl as stated by the GPGE was “to bring her up in a proper Islamic way so as to perform her duty in life, be an ideal and successful housewife and a good mother, ready to do things which suit her nature as teaching, nursing, and medical treatment” (Alireza, 1987, cited by Hamdan 2005, p. 50).

The GPGE remained responsible for girls’ education until March 2002, when an accidental fire in a girls’ school in Mecca killed 15 girls. The Saudi press reported that several members



of the Committee for the Promotion of Virtue and the Prevention of Vice<sup>4</sup> (the religious police) interfered with rescue efforts because the girls were not wearing the obligatory abaya<sup>5</sup> (black cloak and scarf). The religious police were blamed for deliberately obstructing the firefighters' evacuation efforts, with the result that casualties were more numerous (Prokop, 2003). Thereafter, the GPGE was disbanded and the girls' education at pre-university levels were passed to the Ministry of Education, while the university level was passed on to the Ministry of Higher Education (Hamdan, 2005; Jamjoom & Kelly, 2013). Even after 2002, the influence of the *ulama* in the educational and social spheres is felt strongly in respect of women's education and the role of women in public life (Prokop, 2003). Girls' schools and universities are surrounded by high walls and backup screens behind the entry area doors. At least two men, who are usually in their 50s or 60s, sit at the entrances and are responsible for checking the identity of those who enter the school, for delivering and picking up the mail, and generally safeguarding the girls inside the school until they are picked up by their male guardians or drivers. Physical education and fitness facilities are not available, and are in fact forbidden for girls in public government schools (Hamdan, 2005).

Because of all the rigid rules that are imposed on females by not only Islamic scholars, *ulama*, but also by cultural beliefs and traditions, the only option for females to receive education is through segregation between genders, which has made Saudi Arabia the only Islamic country that has a completely separate system of female education, with separate administrative structures and physical facilities. The government has built both male and female school and university campuses all around the country. Male teachers are not allowed in female schools and colleges, and vice versa. In cases of female teacher shortages, the country has hired female teachers from neighbouring Arab countries like Egypt and Syria (Hamdan, 2005). In the late 1960s, the Ministry of Education implemented a two-year diploma programme for teacher preparation to satisfy the demand for Saudi female teachers. In recent years, special

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<sup>4</sup> هيئة الأمر بالمعروف والنهي عن المنكر (The Committee for Promotion of Virtue and the Prevention of Vice) is an official force that has the power to arrest any male or female who they suspect of being involved in any non-Islamic activity. Its role is to apply Islamic law and behaviour standards; for example enforcing the Islamic dress code, closure of shops during prayer time, the prohibition of alcohol sales, and strict separation between men and women. It is often accompanied by regular police. [http://en.wikipedia.org/wiki/Committee\\_for\\_the\\_Promotion\\_of\\_Virtue\\_and\\_the\\_Prevention\\_of\\_Vice\\_\(Saudi\\_Arabia\)](http://en.wikipedia.org/wiki/Committee_for_the_Promotion_of_Virtue_and_the_Prevention_of_Vice_(Saudi_Arabia))

<sup>5</sup> An abaya is a long black cloak that all women have to wear in public once entering the Saudi land. Abaya leaves the hair and face uncovered; women need to wear a head scarf and a burka to be fully covered (Kaur-Jones, 2011).

teacher education programmes have been established at the College of Education, *Kuliyat Al Tarbiya*, which is regarded as the primary provider of Saudi female teachers (Jamjoom, 2010).

At university level, to overcome the shortage of female lecturers, a system of closed-circuit television transmits lectures delivered by the male faculty from the male campus to the female campus to provide input for female students (EL-Sanabary, 1994). According to EL-Sanabary (1994), although the gender-segregation of schools and colleges has helped to maintain and reproduce gender divisions, it has had a generally positive effect on female access to education. Gender division has led to a general acceptance of female education, and a major change in attitudes towards it from the Saudi society (EL-Sanabary, 1994).

The literacy rates between the 1970s and 2012 have increased dramatically. The literacy rates of female youth between the ages of 15 and 24 was 2 percent in the 1970s (Hamdan, 2005). This increased to 97 percent in 2011 (UNICEF, 2013). Saudi Arabia moved from having the lowest literacy rate among women in the region in the 1970s, with only Yemen and Afghanistan ranking lower, to have the highest rate in the region. According to the World Bank, the female illiteracy rate has significantly reduced to a point where it has been practically eliminated among 15- to 24-year-old females (WPR, 2014).

Currently, more than 300 higher education colleges and universities exist for women around the country (MOHE, 2012). Women are still prevented from taking courses in certain fields, such as engineering, journalism and architecture. However, according to the World Bank, female students account for 58 percent of the total number of Saudi students in Saudi universities (Islam, 2014). In 2009, the global gender gap report ranked Saudi Arabia at 25th among countries worldwide in terms of gap between the two genders in university registration (MOHE, 2012). By 2013, there were 25 government universities and 102 government teacher colleges around the Kingdom, in addition to 27 private colleges and universities (Arabia, 2013). Some of these university campuses have residential accommodation for female students who do not live within travelling distance. These campuses must follow the same firm rules as all other women's institutions and workplaces in that they are all guarded by men or security police. The one university in Saudi Arabia to which women are not admitted is the King Fahad University of Petroleum and Minerals in Dhahran since it mainly specialises in engineering, a field that is not yet accessible to Saudi females (Hamdan, 2005). Existing evidence indicates that female students work hard and often achieve higher success rates than their male counterparts. EL-Sanabary stated,

Many factors account for this high female achievement: free education; high motivation for education which provides an avenue for more personal freedom and social mobility; women's desire to prove themselves and to contribute to society; and the example of strong female role models— women teachers and administrators who inspire female students to achieve and excel (El-Sanabary, 1994, p. 145).

Since King Abdullah assumed the throne in 2005, his reign is considered as the golden era for women's education. Al-Rasheed stated, "Like Faisal before him, King Abdullah is seen by many Saudi women as a champion of women's emancipation" (2013, p. 28). King Abdullah has assigned US \$54.4 billion (SR204 billion) from the 2013 country's budget to education (Islam, 2014). In his era, the Saudi government offers the world's largest scholarship programmes for both men and women, and thousands of Saudi women have earned advanced degrees from western universities. Also during his rule, the biggest women-only university in the world, Princess Nora Bint Abdulrahman University, was established 2011 in Riyadh costing 19 Billion SR (US \$5 Billion). It has a capacity of 50,000 students with 23 colleges, a medical research campus, hospital area, and housing facility for both students and staff (Islam, 2014). As a further step toward change, in 2009, Nora bint Abdullah al-Fayez became the first woman deputy education minister in charge of a new section of the Ministry of Education responsible for female education (Islam, 2014).

Having provided the reader with a general understanding of Saudi Arabia and its history of female education, the following section creates further understanding of the female situation, in particular, female positioning as active members of Saudi society. Therefore, the following section touches on some of the issues related to Saudi female employment and positioning.

## **2.2 Position of Women in Saudi Society**

The position of Saudi women is a complex and controversial topic that often displays contradictions (Islam, 2014). They are either portrayed as excluded, oppressed and victims of their own society and religion, or as wealthy entrepreneurs benefiting from the wealth inherited from their families (Al-Rasheed, 2013). In spite of these stereotypes, the position of Saudi women is much more complex and has historical roots involving power struggles. In Saudi Arabia, female adults cannot access education, work or travel, cannot be admitted to hospitals or be treated by any invasive medical procedure, and cannot even be issued with an identity card or a passport without written consent from their male guardians. For an

unmarried woman, a male guardian is her father or brother. For a married woman, it is her husband and in the case of the husband's death it is her own son. In case a woman has no father, brother, husband or son, the guardian will be any male *mahram*<sup>6</sup> she has (Mobaraki & Söderfeldt, 2010). The mechanism of asking for a male guardian's permission is so embedded in the society that officials may ask women for their guardian's written consent even if there is no law or guideline requiring it (Al Lily, 2011).

For conservative religious scholars, any sudden social change, particularly one regarding women, is presented as a Western intellectual war against their identities and their culture (Alselaimi, 2014). They often see any change regarding women as a struggle between tradition and Islam and modernisation and Westernisation. They argue that by rejecting any kind of progress or change relating to women, they are protecting the entire Saudi society from Western ideologies (Hamdan, 2005). Therefore, many writers - both male and female - who challenge and discuss the current positioning and rights of women are being attacked as enemies of God, Western agents, and liberals against Islamic beliefs (Hamdan, 2005). Unfortunately, people in Saudi society have also begun to categorise each other as being extremists who are either too conservative, or too liberal and Western-minded. This has resulted in divisions in Saudi society and has provoked debates based on what is 'right' and what is 'wrong'. This categorisation of being Islamic, or being Westernised tends to have negative outcomes for progress in Saudi Arabia, particularly regarding issues around women that may delay and prevent development for women (Sidani, 2005).

Although in some cases Islamic and religious texts are being interpreted literally, which offer some conservative religious scholars the basis to silence women's voices in the name of Islam (Hamdan, 2005), research suggests that Islamic teachings do not exclude females from the public sphere or economic development (Alselaimi, 2014). Looking at the Prophet Mohammed's (PBUH)<sup>7</sup> teachings, he encouraged female participation, education and respect. Most importantly, he did not differentiate between women and men in terms of intellectual capabilities. In fact, the Prophet Mohammed (PBUH) emphasised and encouraged the seeking of knowledge by all Muslims regardless of gender (AlBukhary, 1959). In Islamic

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<sup>6</sup> In Islam, a *mahram* is a category of males whom a woman cannot marry at any time in her life whatsoever: for example, a woman's father, brother or son, her mother's brothers, her father's brothers, her son-in-law, etc.

<sup>7</sup> PBUH stands for Peace Be Upon Him. It is an expression used as a sign of respect after mentioning the name of Prophet Mohammed.

history, there are many stories that show that females in the early times of Islam were socially and economically active, and participated in decision-making in all areas of public life without any kind of discrimination or exclusion (Alselaimi, 2014). Females participated in wars when needed, nursed the injured, and were even assigned to make weapons of war (AlBukhary, 1959). Some females were consulted on law and political issues owing to their respected knowledge. Fatima, the daughter of the Prophet Mohammed (PBUH), was an active political figure and is cited in many historical books that document her wisdom. Sukaina, a granddaughter of the Prophet Mohammed (PBUH), was known to be a great mathematician, and many notable females made and sold goods in the marketplace during this time (Alselaimi, 2014).

In contrast, from a cultural perspective, the Saudi social structure has excluded females from most public spaces through segregation as a way to protect their honour and to keep females secure from foreigners and other un-related men (AlMunajjed, 1997). Protecting one's honour is vitally important in the Saudi social sphere, and has its roots in tribal traditions. Some men are so concerned about their families' honour that this has led to women's physical concealment, alongside concealment of their voices, photos and any disclosure of their identities (Al Lily, 2011). These traditionalists view segregation as having religious and moral groundings, arguing that any form of intermingling of the genders, beyond the immediate family, is immoral and absolutely forbidden by Islam (EL-Sanabary, 1994). The result of this is that only men were able to represent women's issues in both social and in public spheres, which has promoted a masculine discourse where either the feminine voice is totally absent or subdued (Al-Rasheed, 2013).

In recent years, Saudi women are using the same tool of religious ideology to debate and fight for their goals and equal opportunities. They are using the power of knowledge by learning and studying the Islamic ideology in depth and applying it to women's issues. Hamdan stated:

Women are learning to use the so-called, 'legitimate language', religious language, a language that cannot be challenged by their male peers to attain their goals. Saudi women are also directed towards studying Islamic law and Shar'ia so they can speak in the name of Islam. This is a powerful way to confront the *status quo*. (Hamdan, 2005, p. 46)

Regarding Saudi women's participation in the workforce, between 2008 and 2010, the percentage of women graduates from university out-numbered men in all major fields except agriculture and engineering. For instance, in 2010, 63.42 percent of all graduates were women (MOHE, 2012). However, female labour participation is the lowest in the region, at only 14 percent of the labour force (WPR, 2014). By contrast, the United Arab Emirates' female participation rate is 59 percent; in Kuwait it is 42.49 percent; in Qatar it is 36.4 percent; and in Bahrain it is 34.3 percent (AlMunajjed, 2010).

AlMunajjed (2010) suggests that for Saudi females, attaining a degree does not mean that they can automatically then enter the labour market. Islam states that education cannot be separated from the larger socio-political circumstances surrounding it, and that in a society like Saudi Arabia, where change is neither accepted easily nor quickly, this poses challenges to obtaining the benefits of education (2014). In Saudi society the pervasive social customs continue to limit the scope and extent of women's participation in the labour force. Saudi society deeply values family and tradition, that concentrates a woman's main role is being a wife and a mother and anything that makes her move away from that role results in debate, hostility and even conviction (AlMunajjed, 2010). Many men welcome women's economic contribution, but it is socially unacceptable for women to work in fields other than teaching and medicine (Mobaraki & Söderfeldt, 2010). One of the challenges facing females' participation in the labour force is that most families do not allow their wives or daughters to work in a mixed environment, stipulating that a woman should work in an appropriate environment that does not include any mixing with men or being exposed to the potential of harassment. This explains why 85 percent of women in the labour force are working in the education sector, in both teaching and administrative positions (AlMunajjed, 2010).

Even so, in the education system, all top administrative positions, whether in the Ministry or the universities, are male. These top-ranking male administrators make all the major decisions affecting female education from primary schools to the universities. Although educated Saudi women are taking on higher roles in the educational system by filling positions of greater responsibility as deans and heads of administrative units in women's sections of colleges, universities and the Ministry of Education, the overall power is still held by men. Women have little decision-making power and complain that they only implement

decisions made by men that are far removed from the actual education process. Furthermore, Saudi women's faculties lie outside the network of male education (El-Sanabary, 1994). Women's faculties are professionally isolated and overloaded with administrative responsibilities, which gives them less opportunity to be granted leadership roles. The Saudi education authorities again emphasise that this administrative structure helps preserve a distinct orientation of girls' education in accordance with perceived Islamic teachings and Saudi cultural traditions (EL-Sanabary, 1994). AlMunajjed (2010) states that although official Saudi employment laws and regulations do not explicitly discriminate against women, there is a lack of regulations that relate to women's issues like childcare, breastfeeding and sick leave. In addition, new regulations that give more rights to women are largely unenforced, and they tend to exist only in theory.

Another of the main challenges Saudi women face as working women is their inability to enjoy freedom of movement. Although Saudi women rely completely on cars for transportation, they are not permitted to drive a car, a motorcycle or a bicycle, and it is not culturally acceptable for women to walk on the streets even for short distances (Al Lily, 2011). This has made them dependent on males either from their immediate family or their (male) drivers to be able to commute to work. This has resulted in a situation whereby half of the population cannot freely access the labour market and enjoy wider employment opportunities (AlMunajjed, 2010). Prokop concludes that

the lack of public transport for women remains a serious inhibiting factor in taking up employment and limits their choice of work (Prokop, 2003, p. 88).

Al-Rasheed (2013) has argued that the low salaries for jobs offered to women, such as teaching, plus the fact that they need to pay a substantial amount of their monthly salaries to foreign drivers to be able to go to work, has meant that some women prefer to stay at home as these constraints on their freedom of movement make the idea of going out to work a less attractive option for women.

Despite the high number of educated females in the Kingdom, change regarding Saudi women's development and positioning in the society moves very slowly. They are still excluded from full participation in the society and they remain underrepresented in the economy. This raises the questions: Why do Saudi women not fight for their rights? What factors hold them back? Al-Rasheed (2013) argues that neither conservative

parties nor tribalism alone are the reasons for women's exclusion in society. Instead, she believes that women are able to identify the real causes behind their problems but they avoid confrontation with the government, especially as at this time they do not have society's support over gender relations and greater equality. Also, women believe that it is in the government's hands to resolve gender inequality and to act in their favour to solve the challenges they are facing (Al-Rasheed, 2013). Moreover, AlMunajjed suggests that the reason is that Saudi women lack ways to protect their rights:

As trade unions are not permitted in Saudi Arabia, women do not have the mechanism to protect their rights, and their weak organizational and negotiating capacities are a serious impediment to effective programs that could lead to women's empowerment. (AlMunajjed, 2010, p. 12)

Another obstacle for Saudi women to ask for their rights is that they themselves have different views. Many Saudi women would not want to work in a mixed gender environment, and tend to demand jobs where there is no interaction with men. Also, many wives prefer that their husbands do not work with, or are exposed to, other females, as they view such mixed-gender activities as threat to their marriages and families.

Al-Rasheed (2013) has argued that there are two main divisions of women asking for change: there are *pro-Islamist* women who want to gain more rights while holding tight to Islamic and cultural values, and there are *liberal* women who call for the implementation of international treaties on gender equality and the exclusion of religious opinions. Islamist women demand the enforcement of segregation between genders. They are against women driving because some believe this will place more responsibility on women and free men up even more from their responsibility of running a family. They are also against the media openness that, for them, sexualises women and dishonours their image (Al-Rasheed, 2013). On the other hand, liberal women are pushing for wider employment opportunities, more flexibility regarding interaction between men and women, and they call for a lift on the ban on driving (Al-Rasheed, 2013).

While researching gender equality perspectives on a sample of women in Jeddah, Saudi Arabia, Bawazeer (2015) described the liberal women as Western feminists who stress equalization as a primary factor in addressing women's problems. She described pro-Islamist groups that tend to fuse religion with traditions, and that they see women as pure and beautiful, covered and protected by male guardians as if in a shell. They think that



women should demand justice and fair treatment rather than equality since they believe that women and men are not the same. Bawazeer (2015) mentioned that these two groups are highly vocal in the media and tend to go to extremes, which create 'perpetual discrepancies' that have disadvantageous effects on the educational strategies and positioning of women in the country.

Bawazeer (2015) found that there is a third group that comprises neither pro-Western feminists, who demand a complete change in women's positioning and ask for equality between women and men, nor the pro-Islamists, who try to hold on to tradition and previous positions. This third group comprises women who acknowledge problems, reject traditions when they contradict with Islamic teaching, and believe that they must inscribe Islamic rights while acknowledging both diversity and cultural requirements. This third group see the debate over equality and fairness that often takes place between feminists and pro-Islamists as a quibble over terms and thinks that what is needed is to be looked at is what ultimately can be achieved. This third group refuse to copy the struggles of Western women based on feminist perceptions, but, on the other hand, they call for variations in the definition and functions of feminism based on the rights prescribed to women in the Quran rather than on cultural bases.

### **2.3 The Importance of Voice**

When talking about women's position and their experiences being women in the context of Saudi Arabia, the notion of "voice" becomes important. Writers such as Gilligan (1982) and Belenky et al. draw on sociocultural theory (Vygotsky 1978; Luria 1979) to define voice as 'ways of speaking' that facilitates 'working things out' (1997, p. 33). These sociocultural roots suggest that voice is central both in generating our own understanding as well as to influence others and the social environment. Belenky et al. suggest that in order for this reflective and generative form of voice to develop "the oral and written forms of language must pass back and forth between persons who both speak and listen or read and write - sharing, expanding and reflecting on each other's experiences" (1997, p.26). They go on to argue that "such interchanges lead to ways of knowing that enable individuals to enter into the social and intellectual life of their community" (p.26).

There is a body of literature that is directly concerned with eliciting voices of otherwise 'under-represented' participants and groups. This literature tends to focus on giving voice to disadvantaged or marginalised communities in Western settings, such as e.g. Roma/Gipsy

groups (Ryder & Cemlyn, 2014), and migrants communities (Krzyzanowski & Wodak, 2008; Rose & Shevlin, 2004). This literature is concerned with situations where the (marginalised) participants may be less accustomed to their perspectives being valued by ‘outsiders’, and hence they may be reluctant (but not necessarily unable) to put their perspectives forward or in some cases were not given the chance to present their voices to policy makers, authorities and research.

However, the situation of Saudi female teachers is somewhat different. They are not marginalised in the same way. The feminist inspired literature on voice helps clarify the situation of Saudi women. Belenky et al. (1997) argue that if the representatives of authority are male, women are less likely to identify with this authority. This may pertain even if the women sympathise with the views put forward by the males in authority, and even if they see themselves as part of the socio-economic and cultural group whose positions are dominant. This, then, may describe the situation of many, if not most, female teachers and educators working on various levels of the Saudi educational system. These female teachers may identify with authority differently than men, but do not necessarily disagree with the views put forward by the males in authority.

More broadly, the feminist literature on voice concentrates on ways to enable women to present their voices and experiences. They believe that by engaging women collectively with other women, and by creating supportive environments in which women can explore their experiences and be active participants, the women can be empowered, giving them a feeling that their views and experiences are valued (Wilkinson, 1998). This challenge, of giving participants a safe space to develop their voice, is similar to the one I am facing when concentrating on the experiences of Saudi female teachers using technology. Presenting the voices of Saudi females is crucial, especially given that society, Islamic scholars, politicians and women themselves remain divided (see above) regarding the direction and the amount of change required to ensure a better future for women in Saudi Arabia (Al-Rasheed, 2013).

Later in this study (in section 4.2), I get back to the notion of the ‘voice’ but concentrate more on the notion of teachers’ voices, presenting literature (Butt et al, 1992; Goodson, 1991, 1992, 2006) that highlights teachers’ voices and reasons for why it is important to conduct more research that values teachers’ experiences from their own perspectives (Butt et al, 1992; Goodson, 1991, 1992, 2006). I then present ways this study used data collection and analysis methods that enabled the ‘voice’ of Saudi female teachers to surface and be presented.

## **2.4 Technology and Women**

Since this study is looking in particular at the use of technology by female teachers, it was important to shed light on the relationship between women, women's agency and technology. Here, technology in the narrowest sense consists of manufactured objects whose purpose is to either enhance human capabilities or enable humans to perform tasks they could not perform otherwise (Grübler, 1998). Technologies also consist of software or techniques which are the instructions for producing and using the hardware or artefact. Software provides the ability/know-how to use the device, for example, without a person who knows how to use it - and beforehand knows how to read and write - a typewriter is nothing but a heavy device (Grübler, 1998). Thus, technology in this study includes hardware and software that varies between computers, printers, etc. to the Internet, distance learning and social networking.

In the 1970s, technologies were seen as socially shaped, but shaped by men to the exclusion of women (Wajcman, 2010). Feminist approaches to technology stress the inherent masculine and patriarchal nature of technology and science. Some feminists condemn all technology as intrinsically oppressive of women and pointed out how modern Western technology had become a male domain (Bray, 2007).

Then in the 1990s, with the development of information technology, there was a shift in the relationship between women and technology. The digital revolution and the production of new kinds of technical systems resulted in the decline of traditional hegemonic structures and male domination (Wajcman, 2004). New communication technologies have emphasized women's subjectivity and agency and the different options offered by digital technologies (Wajcman, 2004). Plant (1998) has optimistic views regarding the new technology opportunities, and the affordances that the Internet offered to women by enhancing their agency and capacity for empowerment. She observes that technology has shifted the power from men to women and that old expectations, senses of identity, stereotypes and securities were challenged as women gained more economic opportunities, technical skills and cultural power.

Plant (1998) argues that women could participate as key actors in global networks without leaving their work or roles in their communities. She did add, though, that men were ill-prepared to deal with women who were independent, flexible and equipped with the adaptability that technology offers. On the other hand, Wajcman (2004) argues that Plant's

view regarding technology as freeing and empowering women was too optimistic, and that Plant ignored other factors that influence the development of technologies and which define their use, like media corporations and communications institutions. She adds that Plant did not ground her argument in real life-experiences, or refer to any in-depth actual accounts of women's experiences of computer facilities.

Thus, Wajcman (2004) remains sceptical of the "exaggerated" claims that the Internet represents the technological basis for a new form of society that it is gender free. Instead, she stresses that the Internet, like any other technology, is flexible and contains contradictory possibilities. At the same time, though, she recognises that women are reinterpreting the technologies as tools to increase their emancipation world-wide, economically, culturally, and politically. She gives a comparison of how cars increased women's mobility and capacity to participate in the public space, in the same way as new media such as the Internet have expanded women's horizons and ability to connect with networks and campaigns to improve their conditions. She gives an example of the National Breast Cancer Coalition, where women participated in online campaigns that resulted in convincing the US Congress to double the funding for breast cancer research. Here, women seized the Internet both as a source of information and as a tool for global exchange, support and political lobbying.

The ability to build local communities using new technologies made it possible for small and poorly resourced communities to engage with each other and achieve global social efforts. According to Wajcman, "these political activities are an enormous advance for women who were formerly isolated from larger public spheres and cross-national social initiatives" (2004, p. 120). In other words, women have the capacity to produce new, advantageous readings of artefacts and to develop new kinds of knowledge and skills, drawing on their own experience and needs, while remaining sensitive to racial, class and ethnic differences (Wajcman, 2004, 2010).

However, it is unclear whether this empowering potential of technology applies, also, to other cultures, where the positioning of women, people's beliefs and lifestyles are different from those in the Western world. When I looked at the literature and blog posts written by women located in the Muslim and Arab world, I found a post under the title, *Digital Technology*, that

was posted in a blog called *WISE Muslim Women*<sup>8</sup>. In this post the writer talked about how online media and social networks allowed Muslim women to develop their own understanding of Islam and gender equality, and to be more critical in discussing the hierarchies of power and authority on both the transnational and community levels. The blog post writer states that the internet is an empowering tool for facilitating Muslim women to coordinate, organise in their communities and start political movements. The post also mentions how the Internet gave options to women to contact Muslim scholars to ask private questions, which is a step forward as compared to the traditional ways of face-to-face or telephone encounters (WiseMuslimWomen, 2011) .

By looking at the literature, blogs and Facebook pages we can see that Muslim women from different countries are using technologies as tools to support and share local and global issues. The blog *WISE Muslim Women*, with its different posts, is in itself an example of Muslim women doing this. This mirrors Robinson's (2014) conclusion that social media provide spaces for Muslim women to share their voices, experiences and issues that affect women everywhere. This sharing of voices helps to bridge cultures, to engage with universal issues related to women's rights, and to encourage local-global dialogue. This has allowed women from all around the world to engage with each other in a way that would be very hard without technology.

Another example of uses that Muslim women have for social media is to dispel widely held beliefs and impressions about Muslim women locally and worldwide, e.g. the labelling of Muslim women as victims and oppressed (Cooke, 2000). There are also many examples of campaigns run on social media by Muslim women to support, and raise awareness about, gender equality and human rights. One example is the campaign that was run by a group of Moroccan activists (*Women Choufouch*) in 2012. They used social media to promote films that highlight street harassment and other kinds of gender violence. One of the films, *475: When Marriage Becomes Punishment*, addressed the rape law of the Moroccan penal code that allows rapists to escape prosecution through marrying their victims. The activists used Facebook pages<sup>9</sup> to highlight stories of girls who were forced to marry the rapists. The

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<sup>8</sup> "WISE Muslim Women "is a blog created by Muslim women activists to protect and promote religion, life, the mind, the family and dignity, and to support Muslim women's financial independence.

<http://www.wisemuslimwomen.org/>

<sup>9</sup> [https://www.facebook.com/permalink.php?story\\_fbid=409037705824345&id=132681343491773](https://www.facebook.com/permalink.php?story_fbid=409037705824345&id=132681343491773)

Facebook page attracted over 8000 likes and this enabled the activists to connect to other women's right movements around the world. After about 10 months of campaigning online and offline, the Moroccan government agreed to reform the law (Robinson, 2014).

Another example is the *HarassMap* initiative<sup>10</sup> launched in December 2010 in Egypt, when a group of women came up with the idea of a programme to record sexual harassment incidents on the streets of Cairo. The initiative was successful, and more than 500 community volunteers offered to report any sexual harassment incidents using SMS messaging connected to a mapping system. *HarassMap* was not only about gathering information, it was also to raise awareness of harassment and to convince people to speak out and act against it (HarassMap, 2010). *HarassMap* then started partnerships with other campaigns like the 'End Sexual Harassment' campaign where over 150 people, mostly from Arab and Muslim countries, contributed their stories online (Robinson, 2014).

However, there are also risks for women of participating online. In the blog *7aki Fadi*<sup>11</sup> there was a post by the name "The Difference Between Men and Women in the Middle Eastern (Arab) Blogosphere" (Fadi, 2009). This post provoked some Arab women - mainly from Lebanon, Palestine and Syria - to discuss how women in the Middle East have to be very careful about what to post in social media or what they write in their personal blogs because they are often judged by it. Some expressed that social media indeed offers more freedom, and that they can discuss topics that they cannot risk talking about offline. Others said that online environments reflect the oppression, policing and double standards of their societies. This obstacle has encouraged some women to create anonymous identities to be able to enjoy freedom in the online environment (Robinson, 2014). There are other challenges facing women, including the limited access to computers and the Internet in some areas, the restrictions and monitoring of online materials by some governments, and the fact that English remains the dominant language of the Internet, which is an obstacle particularly for Arab women (WiseMuslimWomen, 2011). Nevertheless, despite all the different barriers that women face regarding using technology and the Internet, it still enables Muslim women to speak out and become their own agents of change (WiseMuslimWomen, 2011).

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<sup>10</sup> *HarassMap* is a platform that uses Frontline SMS and Ushahidi-free software to create an anonymised reporting and mapping system to help report sexual harassment incidents across Cairo, Egypt <http://harassmap.org/en/who-we-are/our-partners/>

<sup>11</sup> *7aki Fadi* (which means empty talk in Arabic) is a blog by a Jordanian/Palestinian/Canadian living in Canada – she is a mother and a wife. It hosts different topics and blog feeds. <http://7akifadi.com/>

## 2.5 Saudi Women and Technology

Regarding the Saudi context, public access to the Internet began in 1999, but before providing Internet facilities to the public the government established the Internet Service Unit (ISU) to filter and control all online information going out of and coming into Saudi Arabia. The purpose was, and continues to be, to protect Saudi society from online materials that do not fit with Saudi values, or which go against the security of Saudi Arabia (Alsalloum, 2005). As is the case with any new initiatives, the introduction of the Internet attracted strong feedback from society. Some viewed it as a valuable communication tool that could connect and align Saudis with the rest of the world, while others saw it as a tool to spread poisonous ideas into the culture that would negatively influence the customs, values and traditions of Saudi society (Al Lily, 2011).

These diverse views did not stop the massive growth of Internet use in the country, which according to Internetlivestats (2014) stood at around 17 million users by 2014. The number of YouTube video views has exceeded 90 million per day (Khan, 2014), and GlobalWebIndex reported that Saudi Arabia is the country with the highest number of Twitter users amongst the country's online population, with 2.4 million users, making it the fastest growing Twitter market in the world (Mari, 2013). The fast adoption of the Internet by Saudi society has posed transformation challenges to the Saudi culture that are exceptional, compared to any other context (Al Lily, 2011). For example, Saudi government controls traditional media, civil engagements are not encouraged, and street protests are not allowed (Al-Saggaf & Simmons, 2015). The Internet is believed to have changed and reshaped this distribution of power, and to facilitate the public voice of many Saudis more than the traditional media (Al-Saggaf & Simmons, 2015).

There is a unique relationship between technology that is largely imported from outside the Saudi society and has global connections and the Saudi society that is mainly split into two spheres: the *public sphere*, where men are active in public and political life, and the *private sphere*, where women are private and politically inactive (Al Lily & Foland, 2014). In Saudi society, in this division between the two genders, it is male voices that overwhelmingly dominate public discourse in Saudi Arabia (Al-Saggaf & Simmons, 2015, p. 7). However, the Internet and social networks have transformed the way people communicate, share information and interact with one another (Yuce, et al., 2013). As a consequence the dynamics of the gender divide in Saudi society is changing. The two genders are becoming

virtually integrated while remaining physically segregated. Al Lily states that Saudi women see the Internet as an empowering tool that enables them to interrupt the hierarchical order based in the society, and it has given them more courage to communicate across gender lines, with policy-makers and society, to support their struggle to gain rights (2011).

By looking at social media threads, Al-Saggaf and Simmons' study shows that Saudi female voices were salient in public discussions and that women were speaking openly and confidently, participating online in forums that include both male and female participants (2015). Also, some Saudi women have their own blogs and they express their views through Twitter (Al Lily & Foland, 2014). Recently, some Saudi activists used social media networks such as Facebook, blogs and Twitter, to call for women to defy the ban on driving by driving on the streets and posting their videos on social networks. This has generated a big debate in Saudi Arabia (Alselaimi, 2014). In addition, the Internet has given Saudi women the opportunity to become exposed to the lives and experiences of other women and men - locally and worldwide - on the virtual platform of the Internet. This has had a huge significance in changing attitudes and perspectives.

The Internet has also increased different learning opportunities for women in Saudi Arabia. For example, the implementation of e-learning has given many Saudi women the chance to continue their education. In 2007, the Ministry of Higher Education established a National Centre for e-Learning and Distance Learning (NCEL), which aims to spread online learning through higher education institutions for both male and female students (Al Lily, 2011). Online learning has given Saudi women the chance to pursue their education while taking care of their other domestic responsibilities and to overcome some of the mobility problems they are facing since they do not need to leave their own homes (Al Lily, 2011).

Technology is also used as a problem-solving tool in Saudi society and is being reshaped based on the community's requirements and challenges, giving technologies new values. For example, male academics may give their personal mobile numbers to their female students and other female academics so they can communicate during office hours (Al Lily, 2013). Here, mobile phones are not only used as a fast communication tool, they are also used as a problem-solving tool to overcome the physical barriers between the two genders, since they are located in different campuses, and as a way to carry out their jobs more effectively.



From what has been mentioned so far it can be said that the Internet and new communication tools have served Saudi women positively by opening new ways of communication and development. It supports some feminist scholars like Plant (1998), who views new communication technology as empowering and a way of shifting power from men to women, and enabling them to participate in their communities while maintaining their roles. On the other hand, Al Lily (2013) states that technologies may in fact reinforce existing social and cultural norms and in some cases work alongside regulations and laws that, in the case of Saudi Arabia, may further reinforce existing gender division and challenges that women are facing. An example of how social norms can become entwined with technologies is how only male academics are allowed to teach both male and female students online, while female academics are excluded from teaching online. Female academics are excluded from online teaching not because the technology is 'unsuitable for women' but because existing social relations and regulations excluded them from doing so (Al Lily, 2013). This supports Wajcman's (2004) argument that technology is socially shaped, and in some cases shaped by men to the exclusion of women.

Saudi women are not only excluded from some online activities, they also face challenges being online. Al Lily (2011) addresses some of the challenges, because women are developing new perspectives and experiences from being exposed to different people and communities online, which usually creates conflict between them and the people around them, either from their direct families or even in the institutions of which they are part. Also, another challenge is that there are some voices presented online of Saudi women that are louder than others, that do not serve for the development of women in the country, and which have a negative effect on the diversity of women's voices online. Another challenge is that citizens are aware that expressing their opinions could land them in serious trouble because of the government's filtering and control of the Internet. There are examples of Saudis going to jail because they have posted statements on Twitter or uploaded videos on YouTube. One example is the case of Manal Al-Sharif who posted a video of herself driving on YouTube as part of a campaign to encourage women to drive. She was jailed the next day (Al-Saggaf & Simmons, 2015).

Wajcman (2010) suggests that the internet is flexible and may contain contradictory possibilities. Al Lily (2011) highlights a contradictory possibility of using the Internet and enjoying the affordances of e-learning for Saudi women. He expresses his concerns that although e-learning may help women to continue their education and open new doors for

them, it might actually have the opposite effect of opening up new ways of abuse and control by providing an excuse for women to stay at home and stop asking for more mobility options, since for many parties in Saudi society, home is the 'rightful' place for women. Therefore, Al Lily stresses that it is crucial to examine the views and experiences of Saudi women regarding incorporating the Internet in their lives from their own experiences and perspectives.

## **2.6 Conclusion**

In summary, through this chapter, the reader has been afforded a glimpse of general information on Saudi Arabia and the positioning of females in the country. It has given a holistic view of the country through the history of female education, and has described the challenges facing female employment and female social participation, thus leading the reader to a greater understanding of the Saudi social structure. The chapter has touched on important factors in the fast development of female education, and how it was and still is an uneasy journey full of challenges and difficulties. It has highlighted women's positioning issues, such as gender segregation, the ban against driving, and diversity of perspectives between different members of society and between women themselves. It also has highlighted the notion of 'voice', presenting some work that looked at voices of marginalised groups and ways this connect with presenting the voices of Saudi female teachers. Next, the chapter focused on technology and women, giving examples of scholars who have explored the relationship between technology and women, and a few examples from the Muslim and Arab world of women using technology to their own benefit, and the challenges they face. Finally, it illustrated some aspects of technology integration within Saudi society and how in some cases this has reshaped social structures, particularly those regarding women, and in some other cases has actually strengthened them.

The next chapter explores the literature focused on integrating technology into education, before looking specifically at integrating technology into the Saudi educational context and presenting the Ministry of Education policies regarding integrating technology into Saudi schools. Finally, I explore studies looking at Saudi teachers' experiences using technology in Saudi schools.

## **Chapter 3: Educational Technology and Saudi Context**

In this chapter, I look at some studies that explore the use of technology in teaching and learning, and I focus on the role of teacher beliefs in achieving effective integration of technology in teaching. Following this, I specifically address those studies that investigate the use of technology in education in the context of Saudi Arabia. Next, the Ministry of Education (MoE) policies regarding the integration of technology into education are explored, and finally, I present some studies that looked in particular at teachers' experiences in Saudi schools.

### **3.1 Integrating Technology with Education**

In the past few years, the field of information technology in education has born witness to new technologies. These technologies seem to have become fashionable and widely adopted that educational institutions, schools and teachers appear to have an almost universal shared optimism about the role of technology in education. However, this kind of optimism may result in unrealistic expectations, and, over time, these may lead to failure of effective integration of technology in education, and ultimately the abandonment of technology use (Maddux et al., 2008).

The rapid adoption of technologies into educational institutions, often before enough research and field trials have been conducted, may have a negative impact on the field of information technology in education. Richardson (2013) suggests that integrating technology is not about expensive tools that we add on top of a traditional curriculum. Rather, what is needed is to address what modern learners really need to know about and be skilled at, to help them have a successful future, and that spending billions of dollars on technologies such as interactive whiteboards and iPads in schools may, if ill considered, have little or no widespread effect on education. Cuban *et al.* (2001) observe that most policy makers, practitioners, parents and educational institutions usually assume that supplying technical resources in schools and classrooms will lead to improvement in the teaching and learning process, but in fact, although the access to equipment and software may lead to widespread teacher and student use, it often may sustain rather than change existing patterns of teaching practice. Consequently, they assert that “the prevailing assumptions guiding policy on new technologies in schools are deeply flawed and in need of reassessment” (p.830).

A closer look at recent research reveals that teachers themselves may play a key factor in successful use of technology in teaching. Teo et al. (2008), for instance, argue that teachers are the main contributor in either facilitating or obstructing technology integration, and that teachers' positive attitudes and beliefs regarding technology enhances the possibility of using it successfully in the classroom. More specifically, Cho and Littenberg-Tobias (2016) suggest that without knowledge about teachers' perceptions about using technology, it is difficult to understand the causes underlying their decisions to adopt (or reject) them, and I would argue, also, the reasons for why technology may sustain rather than change existing patterns of teaching practice. Cho and Littenberg-Tobias (2016) add that existing instruments examining teachers' perceptions of technology focus almost exclusively on students' academic outcomes, such as grades or test scores. This focus fails to take into account the ecology of beliefs and practices that can surround the use of technology. On an everyday basis, teachers work not only to improve students' grades and test scores, but also to promote qualities like self-control, teamwork, and service to a common good (Duckworth and Yeager 2015).

Past research has examined a range of other barriers that may hinder the effective integration of technology in education. For example, external factors such as a lack of computers and software facilities, insufficient technical and administrative support, large-size classrooms, and a lack of time appear to be common barriers to integrating technology. Internal barriers, experienced by teachers, include fear of change, lack of guidance, insufficient training, and a lack of motivation and support (Chen, 2008; Bitner & Bitner, 2002; Cuban et al., 2001; Marwan & Sweeney, 2010). Ertmer (1999) provides a conceptual distinction between these types of barriers: first-order barriers and second-order barriers. First-order barriers are external factors like resources (both hardware and software), training, and support, and second-order barriers are internal to the teacher, such as confidence, teachers' beliefs and attitudes. Although in many studies, first-order barriers have been documented as posing significant obstacles to achieving technology integration (Pelgrum, 2001), underlying second-order barriers are thought to pose the greater challenge (Dexter & Anderson, 2002; Ertmer, 1999; Ertmer et al, 2012). Simply increasing computer access to overcome the first-order barriers, then, does not seem sufficient to achieve effective technology use in classrooms. Rather, what is needed is a corresponding shift in teachers' pedagogical beliefs. Finally, ChanMin Kim et al. (2013) review research that shows that teaching using technology can be different as a result of teachers' different beliefs even when the teachers have similar

knowledge and skills. Hence, internal factors, and in particular teacher beliefs, appear to be more influential in achieving effective integration of technology in education.

In terms of teacher beliefs, a number of researchers note that teachers with constructivist beliefs (see below) tend to use technology to support student-centred curricula, and that those with traditional beliefs (see below) use computers to support more teacher-directed curricula (Andrew, 2007; Hermans et al, 2008). Constructivist beliefs are characterised by encouraging students to construct their own knowledge through social interactions and meaningful activities (Andrew, 2007, p.157). By contrast, traditional beliefs are characterised by emphasising that teachers are the tellers of truth and their job is to inculcate knowledge in students' brains, and that students' role is to listen, read, and perform prescribed exercises. However, Ertmer et al. (2001) have observed that even teachers with constructivist beliefs have been shown to use technology in fairly traditional ways, and hence their use of technology in teaching does not seem to reflect their pedagogical beliefs. Ertmer et al (2001) explain the disparity between practices and beliefs to external barriers that may be in place, such as pre-determined curricular or assessment practices. Ravitz et al. (2000) reached a similar conclusion, that the influence of teachers' constructivist beliefs on their use of technology in their classrooms was often limited by external barriers, including difficulties associated with meeting individual student needs within a large classroom, balancing multiple objectives, meeting the expectations to teach the content of a specific textbook provided to them, resources which teachers needed but that were not provided, and explicit direction of teaching from administrators.

Even so, research does show that teacher beliefs can be more powerful as an influence than first-order, external barriers may be. In a study looking at teachers' beliefs and technology use, Ertmer et al. (2012) found that award-winning technology-using teachers were able to enact technology integration practices that closely aligned with their beliefs, and that they tended to overcome first-order barriers, associated with lack of support, state standards, money, access, time and assessments, to reach their pedagogical goals. For example, teachers who believed that technology could be used to promote collaboration, described projects in which students collaborated with local and distant peers in ways that overcame external barriers. Ertmer et al (2012) stress that if the core beliefs were more aligned with student-centred practices, external barriers are less likely to prevent implementation of these practices. This was shown when teachers in their study brought in their own equipment in their

classrooms to facilitate their students learning and used Web 2.0 tools to overcome limited resources. Thus, for these teachers, the barriers tended to be first-order, or external, rather than second-order, or internal, and the teachers beliefs were a facilitative factor, providing the passion and drive needed to devote extra time and effort to enact their strong beliefs about good teaching and learning, and to overcome external barriers they were facing.

The above reported research suggests that the best way to support teachers to integrate technology in effective ways is not (only) by eliminating more first-order barriers, but by increasing knowledge and skills, which in turn, have the potential to change the teachers' beliefs. Alternatively, Kagan (1992) suggests that teacher beliefs may change through "conceptual change". That is, by asking teachers to critically observe and evaluate different beliefs, and by contrasting their own with such other beliefs, they may effect change in their own beliefs (Kagan, 1992, p. 76).

Regarding teachers' beliefs, Cross and Hong (2009) connect teachers' beliefs with teachers' psychological constructs of emotions, identities and goal settings, stating that they are not separate responses, but interconnected and interdependent. They also connect the use of technology not only with teachers' beliefs but with different emotions that the use of technology may provoke. They assert that the use of technology in teaching involves a change in practice, beliefs and identities of teachers, and this may have an emotional dimension as well. In the case where technology use objectives align with teachers' beliefs, and support their existing professional identities, the teachers projected goals are more likely to be achieved. This, then, may have positive emotional outcomes, and their integration of technology in teaching may be both more effective and lasting (Deci and Ryan 2000; Schutz 1991; Schutz et al. 2001). By contrast, if the use of technology clashes with teachers' beliefs and identity, and does not serve as an effective mechanism through which they can attain their goals, this may lead to unpleasant emotions such as frustration and disappointment. This, in turn, may lead teachers to revert to more traditional teaching approaches that require less time and resources. Furthermore, persistent feelings of frustration and stress may ultimately create new second-order barriers, both in the form of beliefs and emotions, making the integration of technology in the future an even more distant prospect.

In summary, the literature connecting teachers' beliefs to their technology use in their classrooms suggests that beliefs are an internal barrier that may hinder the process of

technology use. However, this literature also suggests that teachers' beliefs may be transformed from a barrier to a facilitator, especially when it is connected to teachers' goals that help them overcome other barriers that they might face. The literature also connects technology use with teachers' emotions and goal setting, concluding that if teachers find technology to be a facilitator to reach to their goals this will promote positive emotions, but if the use of technology creates more barriers and stress, this will provoke negative emotions like frustration or leaving the teaching profession.

### **3.2 Technology Integration in the Saudi Educational System**

In this section, I explore studies that looked in particular into the use of technology in education in the Saudi context. The reason I am reviewing these studies is to show that there are many initiatives in Saudi higher education for using the latest technology in education, and these initiatives are not only presented by the Ministry of Education (MoE) but also by faculties. Another reason for this review is to see if there are any connections between the experiences reported in these studies and the teachers' experiences presented in this study.

There are growing numbers of teachers and students integrating technology into their teaching and learning practices in schools in Saudi Arabia. This increase in use is related to the growing access to information and communication technology (ICT) equipment due to its decreasing cost, in addition to the multi-media support that technology offers to teaching and learning that has made it more appealing and beneficial to both students and teachers (Alshwaier et al., 2012).

At universities, technology integration is also gaining recognition and undergoing revolutionary development (Mirza, 2007). This growing interest in technology is due to the fact that universities have realised the benefits of adapting e-learning solutions, like making their programs and resources accessible to both students and faculty in multiple locations, like on-campus, at home, and in libraries and public places. This has made teaching and learning accessible anywhere and at different times.

A number of studies have investigated the advantages and challenges associated with the implementing of e-learning in Saudi universities. Most studies suggest the advantages associated with implementing e-learning, like making learning more enjoyable and accessible for students and giving the option to students who have family or employment obligations to continue their higher education. Also, it has a social advantage in overcoming gender

segregation challenges in higher education by making communication between both genders easier (for example, Albalawi, 2007; Al-Khalifa, 2010; Hussein, 2011; and Mirza, 2007).

There are a number of documented challenges regarding e-learning implementation in Saudi universities as well, such as lack of knowledge and skills, lack of clear policies and courses, , and lack of technical support (Albalawi, 2007). Alshwaier *et al.* (2012) state that the biggest challenge to institutions wishing to adapt e-learning solutions is not the cost of the technology system itself, but the infrastructure support and the maintenance required to run the system, plus the appropriate staff training that will enable them to use it effectively. So, this “hidden cost” is considered the main obstacle.

As a response to the recognition of the importance of adapting e-learning, and to help Saudi universities to overcome these challenges, the Ministry of Education (MoE) established The National Center for E-learning and Distance Learning (NCEDL) in 2005. The aim of this centre is to provide e-learning services and platforms to Saudi universities across the Kingdom through a virtual learning environment called Jusur (<http://elc.edu.sa/?q=en/aboutus>) that universities can use to upload their online courses. There are a number of Saudi universities that have used this e-learning service, such as Umm Al-Qura University, Princess Nourah Bint Abdulrahman University and King Saud University.

Some small universities, colleges and the school system, however, cannot afford to adopt a big virtual learning system with all that it requires in terms of technical support and training. This has led some researchers and academics to look for alternative solutions. For example, Alshwaier *et al.*'s (2012) study investigated the use of cloud computing as an educational environment and explored how it may be used in universities and other educational institutions in Saudi Arabia. Their study was an attempt to overcome the obstacles many Saudi schools and universities are facing. Afnan Oyaid (2015) took this initiative further by testing a model using Google Cloud Platform with 92 female students from the College of Education at Princess Nourah Bint Abdulrahman University. She proposed a model that includes several Google free applications working together to form a system similar to those offered by conventional virtual learning environments. She drew on her own experience as a lecturer at this university, which helped her recognise the needs and drawbacks associated with previous systems. She acknowledged that it is essential to introduce an accessible, widespread technology that is used by both teachers and students in their daily lives. She



chose Google apps for their ease of use, accessibility and social networking services, in addition to being free of charge.

In her study, Oyaïd concludes that using already available applications that are free and accessible changed positively views and attitudes regarding using technology in education for both students and teachers. In this case, technology encouraged teachers to develop their technical skills and teaching practices and increased their willingness to remain up-to-date with new innovations in their field. It also encouraged the teachers to be self-learners and to take more control over finding solutions to the problems they were facing. In addition, it enhanced the sharing of successful experiences between teachers and this increased the sense of collaboration between them (Oyaïd, 2015).

The Ministry of Education has recognised that e-learning opens up new opportunities for learning, but as Mirza (2007) points out, there are some policies that work as an obstacle for Saudi students trying to pursue their education through distance learning. Based on Ministry of Education policies, the Ministry will recognise degrees obtained by the distance-learning method only if the award is conferred from a Saudi government university. The Ministry will reject any degree obtained by the distance-learning method from any other university. This includes highly ranked universities like Harvard in the United States or Oxford in the United Kingdom. Being rejected means that the degree will not qualify the recipient for a government job, including an academic career at a Saudi government university, and the student cannot pursue any further graduate-level education at Saudi universities (Mirza, 2007).

### **3.3 Ministry of Education Policies and Plans**

Returning to the case of schools in Saudi Arabia, there are only a limited number of studies that address technology integration at the school level compared to at the higher education level, and studies that concentrate on school teachers' daily experiences using technology in their practice are even more limited.

One of the Ministry initiatives to bring attention to school teachers' use of technology is the Jehazi Project. This project enables all teachers to purchase their own laptops and other pieces of equipment, such as printers and scanners, at reasonable prices with monthly instalment payments and no deposit required. Also, the Ministry pays for all government teachers and supervisors to obtain the International Computer Driving Licence (ICDL) from

local computer training centres to ensure they have the basic computer competencies that they need (Oyaid, 2009).

In an attempt to understand the reality of female teachers' daily lives, I found myself investigating the Ministry's policies and goals which have a direct connection with technology integration in schools. In the past few years, Saudi Arabia has implemented a series of plans in order to adopt comprehensive policies as an attempt to upgrade the education system. Examples of recent plans are listed below.

### **The 10-year Plan of the Ministry of Education (2004-2014)**

After reading this plan (Ministry of Education, 2005), I selected the following objectives that have a direct connection to integrating technology:

1. To replace the government's school buildings with modern equipped ones at an annual rate of 10% for rented buildings
2. To develop the school buildings' facilities in view of the vision and schools' future
3. To secure and improve the required sources of education technologies in school buildings
4. To secure efficient financial resources for school construction and renovation (p. 16)

Another key goal of the plan is:

To develop the infrastructure of information and communication technology and its employment in education and learning (p. 16).

### **King Abdullah bin Abdul Aziz Project for developing public Education (Tatweer)**

In 2007, King Abdullah Al-Saud launched a major development plan for the country's educational system<sup>12</sup> called the Tatweer project. The project focused on the development of public education, and allocated 4.2 billion SR (Saudi riyals) for the improvement of the educational environment, SR 3.58 billion for extracurricular activities, SR. 2.94 billion for teachers' training and development, and SR 980 million for curriculum development programmes (Ghafour, 2007). The Education Minister at that time, Abdullah Al-Obaid, said

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<sup>12</sup> It is called Tatweer <http://www.tatweer.edu.sa/content/aboutus>

the project would help the Kingdom keep pace with scientific and technological development and meet the requirements of the country's vision and aim for education. The project aimed to provide teachers with modern information technology tools. Al-Obaid stated "They will also be given intensive training to help them become familiar with modern developments and changes," (Ghafour, 2007).

When looking at these reform goals, objectives, and the huge budgets allocated to implement them, one would expect that major developments have taken place in the school system in the Kingdom and that the problems that teachers and students suffered from in the past have been resolved. Also, by looking at the reform policies, with their huge emphasis on technology integration and the importance of implementing technology into education, one could assume that Saudi schools will be leading examples of successful technology implementation in the region. Unfortunately, although there are some successful examples in some Saudi schools, the results are not what Saudi policy-makers or teachers and students were hoping for.

Some research that evaluated the education system in Saudi Arabia concluded that despite all the comprehensive reports, including goals and objectives and reform processes completed to enhance the education system in Saudi Arabia, there is still no clear strategic vision that tackles the educational philosophy and analyses its problems systematically (Aldossari, 2013). In other words, as Alesa (2008) suggests, no clear vision has emerged from all the reform plans that can respond to the society's needs for development in the twenty-first century.

### **3.4 Saudi Teachers' Experiences Regarding Integrating Technology**

In her 2009 study on both male and female teachers in Riyadh that investigated ICT policies, and their effects on teachers' perspectives and practices, Oyaid (2009) found there was a lack of awareness of MoE policies among teachers. This lack of awareness had negative effect on the fulfilment and implementation of the aims and objectives of those policies. She added that even those policies known to teachers were misunderstood because of poor explanations by school administrators and supervisors, which resulted in poor application of the policies (Oyaid, 2009).

Oyaid (2015) drew on her own experience of teaching educational technology in a Saudi female university and her continuous work collaborating with female university teachers,

school teachers and students. She observes that, usually, Saudi teachers are keen to learn new ways of using technology in their practice, and they approached her to ask what the best and newest ways of technology integration were. At the same time, though, they rely heavily on their universities' and schools' leadership to adapt and support integrating technology both financially and administratively (Oyaid, 2015).

Another study, by Al-Furaydi (2013), looks at teachers of English as a Foreign Language in Medina city public schools, and tested teachers' computer literacy levels and their attitudes regarding using technology in their practice. His study also showed that the ambiguity and lack of clarity of MoE policies, and the ways in which these are interpreted in real-life practices, resulted in a low level of support given to teachers from school administration regarding integrating technology into their practice. This, Al-Furaydi argues, indicates an administrative gap between the Ministry plans and policies and school administrations. He concluded in his study that the level of computer literacy was high, which had a positive impact on teachers' attitudes regarding using technology in their teaching (Al-Furaydi, 2013).

Even so, there are positive reports about technology use in Saudi schools. A study by Oyaid (2009) found that both male and female teachers were using technology in their teaching practice and expressed positive views about their experiences using it. The most common advantages teachers mentioned was that technology changed the boring routine of the traditional way of teaching due to its capability to present information in many ways. They also added that technology saves them time and effort and they use it outside the classroom to communicate with their students via emails, mail groups, bulletin boards and, in some cases, the teachers' own websites (Oyaid, 2009).

Regarding teachers' motivation, Oyaid found that the main source of motivation of using technology was the teachers themselves. Their own belief in the benefits of technology and the importance of using it were the main reasons they cited for using it. Also, they said that training is a very important factor that helped them to implement technology in their practice, but that it was also a hindering factor when there is a lack of it (2009). Teachers mentioned lack of time and increased work load, particularly in the case of the managerial roles that teachers sometimes are asked to take. Teachers also complained that most educational and technology resources available online are in English, which most teachers have not mastered, hence, they asked for more Arabic online resources (Oyaid, 2009). Al-Furaydi's (2013) study showed that lack of financial support in providing technology equipment and programs

and the expensive financial constraints on the teacher of adapting technology, as well as not giving time and space to the teacher to be properly introduced to the different ways to use technology, were the main reported de-motivating factors of integrating technology. Interestingly, though, in his study he found that some teachers were determined to overcome the problems they faced, such as lack of technology resources, lack of time and the expense involved in the implementation of technology. In other words, they were keen to learn and develop their knowledge and skills from the people around them.

Another study that reports some of the challenges Saudi teachers face is Ali Aldossari's (2013) PhD thesis, which looked at the class management practices of male Saudi teachers in boys' schools. One of these challenges was the lack of school buildings suitable for the provision of education (Aldossari, 2013). Many schools rely upon rented buildings, and many government-owned schools do not meet the necessary specifications. The Ministry of Education (2007) states that 40% of government schools are not up to the required standards, needing more classrooms and more sophisticated educational equipment. In this study, poor infrastructure was addressed by teachers in girls' schools as well, that mirrors Aldossari's study (2013) findings. This shows that poor infrastructure is a problem that both girls and boys schools are suffering from.

Aldossari (2013) also highlights challenges that teachers face in government boys' schools that the teachers in this study also talked about, like the large size of classes, with up to 40 pupils being taught by one teacher. In addition, bureaucracy is arguably reflected in the widespread domination of autocratic school management in the Saudi education system which hinders change and innovation. Aldossari (2013) states that, despite the use of technology and the improvement of teachers' skills, the level of education has still not reached international standards despite the high government spending.

### **3.5 Moving to the Research Questions**

After reviewing the literature, I found that there are some studies that address the experiences of Saudi women using technology (e.g Al Lily, 2011, 2013), and studies that explore technology use in Saudi schools (e.g. Aldossari, 2013; Al-Furaydi, 2013; Oyaid, 2015). However, there is a lack of literature that addresses both the experiences of females using technology in their daily life in Saudi Arabia, and being a teacher and part of the educational system in Saudi Arabia. Thus, listening to the Saudi female teachers' voices not only fills a gap in the literature, but may also serve policy-makers, school administrations and other

teachers in the Saudi context, in addition to anyone who is interested in learning more about the experiences of teachers and females in this particular context.

More specifically, the literature presented in section 3.1 demonstrates that teachers play a major role in the process of integrating technology in education. Exploring the impact of teachers' beliefs on the process of using technology in education has been addressed by many studies, showing that teachers' beliefs can act as a barrier or a facilitator in the technology integration process (Cuban et al, 2001; Ertmer et al, 2012; Marwan & Sweeney, 2010). Section 3.4 includes research on the Saudi context, documenting the challenges teachers in both boys' and girls' schools find in using technology, and their attitudes regarding using technology in their classrooms (e.g. Aldossari, 2013; Al-Furaydi, 2013; Oyaid, 2015). The studies also document that teachers do not seem to be aware of the policies underlying technology integration in their context. Missing from these studies is an attempt to investigate further the ways teachers deal with technology integration challenges, the solutions they use, and what enable them to act the way they act. This gap in the research on technology integration in Saudi Arabia was recognised by Jamjoom (2010), who suggested that future research is needed to look at female Saudi teachers' experiences. She suggested that "it is crucial to shed some light on the importance of the [Saudi female] teacher and the lived realities of the teaching occupation itself". It is crucial, then, for research to focus on the influence that teachers have in schools in Saudi Arabia, to be able to understand ways their characteristics, beliefs and actions impact their use of technology, and to understand what factors facilitate or hinder their use of technology. This background motivates the first research question of the present study:

1. How do Saudi female teachers influence their own use of technology in their practice?

In section 2.4, I explored the role that technology affordances play in changing the lives of women in different parts of the world (section 2.4), and ways women from all different places used technology to support their local issues. Also in this same section, I explored studies that give examples of Saudi women using technology to expand their options, like the internet offering different learning opportunities for women (Al Lily, 2011) and ways women are using technology as a problem solving tool being shaped according to the requirement and challenges of their community. It seems important, then, for research to focus on the technology affordances available to female Saudi teachers, ways female Saudi teachers localise technology to fit their needs, and how these affordances enhance and change their

professional experiences as teachers and learners in this specific context. This lead to the second research question:

2. How does the use of technology enable Saudi female teachers to change their professional experiences?

In addition to exploring the role that female Saudi teachers have in the process of using technology, and the role that technology may have in opening new ways and options for Saudi female teachers to change their professional experiences, there is a need, also, for research to explore ways the use of technology may be changing the lived experience of teachers. This would be taking it further, going beyond simply viewing technology as a problem solving tool to understanding the impact of technology on the lived experiences of Saudi female teachers, including how it affects their identities, their agency, their experience as educators and Saudi citizens and their experience as women. The broader literature shows ways technology has served women positively but also created challenges that reinforces social norms. Al Lily (2011) stresses that it is crucial to know the experiences of Saudi women incorporating technology in their lives and ways it changes their experiences of being teachers, females and Saudis. This is the background to the third research question of this study:

3. How does the use of technology change Saudi female teachers' views of their lived experience?

In the next chapter, I outline the research methodology employed in order to respond to these three research questions.

## Chapter 4: Methodology

Building on the literature review undertaken in Chapters 2 and 3, and identification of gaps therein, Chapter 4 describes the methodology which underpins this investigation. It begins by restating the research questions, then the chapter is divided into three main parts inspired by the questions proposed by Edge and Richards (1998) to which researchers must respond. The first part is *position*, which addresses the position of the study, the researcher's rationale and understandings, and the researcher's stance, all of which were behind the choices taken within the field of research. The second part is *voice*, which presents the identities of the voices this study aims to represent and the methods of data collection used to generate them. The third part is *representation*, which underpins the analytical procedures employed to transform the voices into the study's findings, while maintaining accuracy to stay as close to the voices as possible. The aim of this chapter is to present the decisions I took through the study and to indicate resources which I found useful, alongside my reflections on this journey.

Three research questions have informed this investigation:

4. How do Saudi female teachers influence their own use of technology in their practice?
5. How does the use of technology enable Saudi female teachers to change their professional experiences?
6. How does the use of technology change Saudi female teachers' views of their lived experience?

### 4.1 Position

In this section, I discuss the question posed by Edge and Richards: "in the face of so many schools and traditions of research, how is the ... researcher to position his or her own work?" (1998, p. 340). To answer this question, I present the positioning of my research, including justification of the choices taken and useful sources that helped me in the process. Detailed reflection on my position as the researcher, who played a major part in the study, is also provided.

#### 4.1.1 Research Paradigms

There are distinct research approaches from which a researcher may choose, depending on her or his positioning in the study and the aims driving the project. One is the quantitative approach that is mostly situated in the positivist paradigm. Edge and Richards (1998) stated



that researchers adopting this approach see themselves “standing apart” from the phenomenon being investigated, where their own beliefs and values are not involved in the research process (p. 336). Stange *et al.* (1994) explain that a quantitative researcher will use statistical measures and techniques to understand the role of different variables. They add that the main aim of researchers adopting this approach is to generate results that will strengthen their argument and which can be generalised and replicated to other, similar, settings.

Another is the qualitative approach, which is situated in the naturalistic or humanistic paradigm. Edge and Richards (1998) assert that “researchers in this humanistic, or naturalistic, paradigm see themselves as participants in the situation they investigate, and assert that their values and beliefs are multiply involved in choosing what to research, how to research it, and how to represent and to use their findings” (p. 336). The aim of researchers adopting a qualitative approach is to gather rich and valid descriptive data by working with small groups of participants in order to reveal personally and culturally relevant meanings and understandings of a particular situation (see Cohen *et al.*, 2011; Edge & Richards, 1998; Stange *et al.*, 1994).

In the case of this study, my own curiosity as a researcher has arisen from an interest in conducting research that investigates contextualised experiences rather than controlled experiments. Focusing on people’s interactions with their world requires the researcher to be sensitive to the findings and interpretations of who is actually living in the context and the conditions being explored. Looking at the study’s aim and objectives (see section 1.2 in the Introduction chapter), the study does not aim for generalised results, rather, the aim is to represent in-depth experiences of female Saudi teachers that use technology in their practice to whom others can relate and be informed by. The focus is on their daily routine, challenges and realities from their own perspectives. Therefore, I orient myself as a naturalistic researcher adopting a qualitative approach as this seems most appropriate to the objectives and aims of the study.

Inside the boundaries of qualitative research, though, there are multiple disciplines and diverse traditions, each with its particular and special language (Miller & Crabtree, 1992). Although they overlap in some strategies and skills, like interviewing and thematising meanings, there are distinctions and differences in their nature. Holloway and Todres (2003) state that “there are distinctions and differences in the nature of qualitative approaches; in history, strategies, epistemology and ontology” (p. 347). They add that each qualitative

approach has specific data collection methods, and specific analysis and presentation techniques, that all need to be consistent and coherent with the approach being used and the aims of the project (Holloway & Todres, 2003).

Edge and Richards (1998) also challenge the notion of a single model of qualitative research. They suggest that what is important is not making a reference to a specific approach, but rather that researchers provide an argument, or a “warrant”, for the claims that they are making. They suggest postmodern thinking as a way for researchers to move away from using a single model and to follow their own logic, thereby choosing different ways to conduct their research according to the study aims and objectives. They add that the field of qualitative research is “rich” in conceptual and epistemological options, but the crucial point is to present a credible version of what happened rather than to remain stuck within traditional boundaries.

In my case, the first challenge was making sense of a diversity of qualitative approaches, each with a range of intellectual ideas, goals, and styles. I started by keeping the main aim of the study in the forefront of my mind: that is, to seek an in-depth picture of the individual experiences of female Saudi teachers using technology. Having teachers’ own views, perspectives and experiences using technology as the main focus of the study, alongside showing the unique context that shapes these experiences, made me realise that I needed to create opportunities and spaces for teachers to talk freely that would stimulate sharing and presenting their own experiences. I found myself shifting between different approaches and appreciating having freedom in the choices of methodological tools, or even piecing together new tools if necessary, according to the study aim.

I do recognise that not situating the study firmly within a single qualitative framework or approach may be viewed by some academics as a weakness, or a lack of coherence and consistency, but in other cases giving the reasons for doing so may be viewed as strength. In this chapter, I provide justification of the choices and claims made by the study, and indicate sources in the qualitative research literature that I found useful.

Denzin and Lincoln (1994) recognise that with methodological freedom comes a growing recognition of the close relationship between the researcher and the fieldwork. Therefore, before identifying what inspired the decisions taken in this study and the useful resources used, it is crucial to shed light on the researcher’s personal positioning and how this affected the decisions made.

#### 4.1.2 My Identity as a Researcher

When addressing the position of the researcher, the notion of insider and outsider researcher identities immediately surfaces. Researchers are routinely taught to consider their own positioning and how it might influence their research (Thomson & Gunter, 2011). Dwyer and Buckle (2009) state that,

Whether the researcher is an insider, sharing the characteristic, role, or experience under study with the participants, or an outsider to the commonality shared by participants, the personhood of the researcher, including her or his membership status in relation to those participating in the research, is an essential and ever-present aspect of the investigation. (p. 55)

For many researchers, however, their identities are neither fixed nor stable, which makes researcher positioning much more complex than the concept of insider and outsider. Thomson and Gunter (2011) realise this complexity and draw on Bauman's (2004) notion of 'fluid identity' to argue that the insider/outsider division gives an illusion of stability in a researcher's identity that limits the understanding of real experiences in messy research practices. The notion of 'liquid researcher' describes one who views identity as not stable, something not singular possessed by an individual, rather, it is frequently changing.

I experienced liquidity while conducting this study. I am an outsider by being a student in a university based in a Western country, who engages with different literature. Although I am Saudi, but I am not employed by any educational organisation in Saudi Arabia, do not have any previous relationship with any of the schools that participated in the study, and never studied or worked in the public school sector. That made me unaware of some of the issues they are facing. In other words, I went into the field with a 'fresh eye'.

On the other hand, I am an insider being a Saudi female myself, born in Saudi Arabia and educated in Saudi schools. I speak the same language and use the same accent<sup>13</sup> as the teachers. I have experience in the private school sector, I worked as a teachers' computer trainer, was a computer teacher myself, interacted with teachers and students, and shared meals and discussions with teachers in staff rooms.

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<sup>13</sup> In Saudi Arabia, there are different accents in each region. Some are easy for me to understand, while others are difficult. Being from the same region as my participants helped me to understand their accent.

I also experienced living as a female both in Saudi Arabia and in England. This gave me the opportunity to understand and try to explain the context that female Saudi teachers are coming from to Western English-speaking audiences who experience different ways of living.

Taking up these multiple positions, each position has certain expectations of me during the course of the study. I am an outsider, being a PhD student expected to deliver a trustworthy study following specific research standards. I am also an insider, being a Saudi student funded by the Saudi government to conduct a study that will benefit the educational system and the country as whole. I am a trusted insider to the school head teachers who opened their doors for me and enabled me to sit and talk with their teachers.

I am also an insider to the teachers who participated in the study, who viewed me as a channel through which their voices would reach the Ministry of Education by me presenting their experiences. This final insider role is clear in the following note I made during the fieldwork:

*Today after we finished the focus group session. I was assuring the teachers that I will not use their real names when using what they said in the thesis. One teacher said that she wants me to put her real full name beside what she said. She added that she is proud of whatever she said and wants the Ministry and decision makers to hear it, to know what they are going through. Other teachers in the group agreed. Of course I will not use their real names but this increased my motivation and made me realise the importance of what I am doing. (Note- 15-01-2014)*

In Table 1, I added an overview of my complex researcher identity, reflecting how I believe I was perceived by different stakeholders in my project.

Table 1: An overview of the researcher identity

By	Perceptions and expectations
Country/ Ministry	<ul style="list-style-type: none"> <li>• Conducting a useful study that will benefit the educational system and the country as a whole</li> <li>• Trustworthy researcher - giving me access to schools and teachers</li> </ul>
Teachers	<ul style="list-style-type: none"> <li>• Advocates of their views and experiences</li> <li>• Legitimizers of their right to speak</li> <li>• Link between them and the Ministry</li> <li>• Presenting hope for a better educational future through research</li> <li>• Trustworthy researcher (Being a Saudi and coming from a British university)</li> <li>• Outsider of their own daily experiences as public school teachers</li> <li>• From a private sector background</li> <li>• A Saudi living in the West</li> <li>• As an insider being aware of cultural and social customs and issues</li> </ul>
Academia	<ul style="list-style-type: none"> <li>• Researcher of the project</li> <li>• Being critical/and honest</li> <li>• Representing a study fitting research standards</li> <li>• Being ethical and accurate</li> </ul>
Myself	<ul style="list-style-type: none"> <li>• Being conscious of the various shifts in my identity</li> <li>• A representor of teachers' voices</li> <li>• Being influenced by the literature I engage with</li> <li>• Changed from interacting with teachers through the study</li> <li>• Believing in the importance of listening to teachers' experiences</li> <li>• Being influenced by the teachers themselves (The data)</li> </ul>

In summary, during the project, I continually shifted between different identities, and this affected the choices I made throughout the study. To overcome this challenge, I tried to be conscious of the various shifts in my identity, and to reflect on how the turns affected the ways in which I conducted the research and the methodological processes used. I use the word 'tried' because, as Thomson and Gunter (2011) point out, it is futile to think that we might or can be able to get a complete grip on the shifts that we as researchers experience through a research project. The journey I took, and the questions I have been asking myself during the journey of exploration, have been helpful. Throughout this journey, reaching and presenting

the voices of teachers was always the driver that shaped the decisions I took and helped me to stay focus on this aim of conducting this study.

#### **4.1.3 The Influence of Phenomenology**

As mentioned in the previous section, the aim of this study is to document and represent female Saudi teachers' experiences of using technology in their practice. The focus is on their own daily routines using technology, challenges and realities from their own perspectives, ways they perceive the world, and how the world is presented to them. Therefore, I did not adopt a research design that relies on classroom observation techniques, since the important thing is not what I observe as a researcher in the classroom. Rather, what is important is what the teachers observe and think of their realities. The aim is to present how teachers see themselves and see technology shaping and mediating their lives as teachers living in a specific context.

With this in mind, I developed an interest in phenomenology since its main focus is delivering a faithful description of how a phenomenon is experienced, through paying careful attention to unique concrete contexts (Holloway & Todres, 2003). Phenomenological research aims to obtain descriptions of experience without considering its cause or attempting to determine whether these descriptions correspond to an independent reality (Giorgi, 1997; Cilesiz, 2011). This connects to Verbeek's (2005) view of phenomenology as a "philosophical movement whose principal task is to analyse the relation between human beings and their world rather than as a method of describing reality" (p. 108).

My first encounter with phenomenology was through Jamjoom's (2010) study that uses a phenomenological design to look at female Saudi teachers' experiences teaching Islamic studies in a private school in Saudi Arabia. I liked how the study was driven by the teachers' experiences rather than the teachers' practices, and how the phenomenological strategy supported this aim. I was also inspired by Cilesiz's (2011) article that links educational technology with phenomenological research design. He emphasises the importance of comprehending the impact of technology on societies generally and on teaching and learning more specifically by understanding individuals' experiences with technology:

a phenomenological approach to studying experiences provides a suitable framework for research on experiences in educational technology and can advance the field by complementing and unifying existing research in this area (p. 488).

When I started reading about phenomenology, I found that there is diversity in the philosophy underpinning different kinds of phenomenology. Therefore, I decided to keep a diary and named it *My journey through Phenomenology* (see Appendix 1 p. 236).

In the process of looking at studies that used phenomenology to explore the experiences of people with technology, and its interaction with society, I came across post-phenomenology, presented by Don Ihde (1993), which offered a new way of looking at phenomenology and technology. Verbeek (2005) draws on the work of Ihde and many other philosophers in both phenomenology and constructivist approaches to propose a post-phenomenological approach that he describes as follows:

I articulate an approach to technological culture that attempts to understand the concrete role of technological artifacts in human existence. The key concept of this approach is ‘mediation’ ...when technological artifacts are looked at in terms of mediation – how they mediate the relation between humans and their world, amongst human beings, and between humans and technology itself. (Verbeek, 2005, p. 11)

Post-phenomenology involves combining philosophical questions with empirical investigations into technology. It combines interpretative phenomenological questions that ask:

how human beings realize their existence and thus are present in their world.... and ways in which reality is interpreted and thus present for human beings. (Verbeek, 2005, p. 10)

with empirical questions that technology researchers might ask, such as:

What is the role that technology plays in human existence and in the relation between human beings and reality? (Verbeek, 2005, p. 100)

and comes up with a new way of approaching it, proposing to focus on:

How technology mediates the involvement and engagement of human beings with their world and the ways in which they realize their existence. (Verbeek, 2005, p. 172)

The post-phenomenological approach then looks at concrete technologies with an eye to the relations between human beings and the world that these concrete technologies make possible, and elucidates the structure of these relations (Verbeek, 2005).

Coming back to the question proposed by Edge and Richards (1998, p. 340) - “how is the ... researcher to position his or her own work?”- the study is a qualitative study inspired by the phenomenological approach. It is not a phenomenological study, but phenomenological thinking has encouraged me at different stages in my research to look beyond practice, beyond technology use, to a deeper understanding of the relationship between the use of technology and the lived experience. At some points in the thesis, I describe an empirical investigation looking at technology affordances and the different ways Saudi female teachers use technology (Chapters 6 and 7), but in other parts I take a more phenomenological approach looking at how technology changed the experience of the teachers including who they are and how technology use made them realise and be more aware of their selves and their situation (Chapter 8).

#### **4.1.4 How I Understand Technology, Agency and Society**

In the process of positioning the study, I found it crucial to explore the relationship between technology, society and users of technology who are the main agents in the process of technology use. I understand that technology use must be approached in a way that goes beyond hardware and software. We must look at how these technologies are integrated by humans, institutions and societies, to examine how technologies become part of the social fabric, and recognise ways that technology affects and is being affected by social values. Al Lily (2013) mentioned that technology use cannot be explored in isolation from the social values in which the technology is being used, and that technologies are not isolated objects outside the fabric of history and the existing social structures. Al Lily and Foland (2014) emphasised that actors do not only shape technology according to their societies but technology also shapes societies as well. They used the term ‘culturalisation’ to express ways technologies are both products and agents of cultural change. Johnson and Wetmore (2009) used the term ‘sociotechnical systems’ to reinforce the idea that technology is socially constructed.

Because of the relationship between technology and society, technology use is usually associated with change. Therefore, we need to investigate technology together with the



social impact it has on individuals in a society that may vary from one society to another. That is why, scholars like Wajcman (2004) view technology as 'plastic' and characterised it as contingent and open, as the same technology can have different effects in different places. She suggests that instead of identifying technologies as a source of positive or negative change in societies, we should concentrate on the changing social relations in which technologies are embedded and how technologies may facilitate or constrain those relationships (p. 107).

In the process of social change and the development associated with technology, Bharat and Sardeshpande (2015) argue that identifying the problems and social needs, as well as using and adapting appropriate technology solutions that are acceptable to people in a specific context, is crucial in the process of social development and change. Moreover, Johnson and Wetmore (2009) argue that making decisions about technology is not only a matter of solving problems and maximising benefits, there are social values that people integrate with technology in order to make it fit into the fabric of society. Hence, technology systems then seem to take on their own power. They may facilitate certain actions and values, making them more concrete and permanent, or may in other cases constrain them. Therefore, social values shape technologies - and technologies have a significant effect on social values as well. Because of this intertwining of social values and technology, some technologies might promote democracy, decision-making, individual independence and autonomy, while others might reinforce social values, such as race and gender bias (Johnson & Wetmore, 2009).

There are many academics that have proposed frameworks to investigate the relationship between technology and society. For example, Pinch and Bijker (1987) and their collaborators proposed the social construction of technology framework (SCOT), which views the relationship between technology development and society as 'multidimensional', non-linear and heterogenous. A crucial concept in SCOT is 'interpretative flexibility', which can be demonstrated by showing how, for different social groups, the artefact (technology) presents itself as essentially a different artefact (Bijker, et al., 1987). Another conceptual framework regarding the shaping of technology is the concept of 'domestication'. In her 2006 study looking at the use of information and communication technology (ICT) in everyday lives, particularly at home, Haddon (2006) used the concept of 'domestication' of technology to explain the experiences of using ICT and how people evaluate their experiences, and what bearing it has on their lives. It looks beyond the adaptation of technology to what technologies mean to people, and what roles these technologies play in their daily lives. The

term ‘domestication’, more commonly used to describe how humans have tamed the wild, evokes a sense that technology can be wild and needs taming by its users depending on the context in which they live.

Since this study explores the experiences of individuals with technology, I am interested in the impact of the use of technology on people, people as agents in societies who, culturalise, localise, domesticate, or shape technology to create different meanings and uses to fit their daily lives, needs and routines. I want to investigate if the process of using technology has an impact on Saudi female teachers’ agency? Does it enhance agency or does technology help other social structures to maintain their power? Here, human agency is mostly defined as the capacity of human beings to act differently from the predetermined ways identified by social structures (Emirbayer & Mische, 1998; Sewell, 1992). It is the capacity of actors in a society not only to perform social roles or carry cultural values and tradition. Rather, actors also exercise agency through their control of resources and to reinterpret and mobilise these to serve specific goals (Sewell, 1992).

Some researchers who looked at technology use and human agency, like Yates and Orlikowski (1992) and Orlikowski (2000) acknowledge human actors’ capacities to use technology and to generate unintended patterns of use that enhanced their agency. Orlikowski (2000) uses the word ‘enactment’ to describe how people interact with technology in their ongoing practices with already established structures. She states that this enactment shapes and situates the use of technology to the particular setting, and that humans through the use of technology have the ability to enact, improvise and overcome constraints associated with both technology design and their own surroundings (2000). Orlikowski (2000) stresses that the effect of both individual understanding and social structure on the use of technology is so large and diverse that this has made it difficult to generate specific expectations on the occurrence of particular enactments with technology, and also made it difficult to generate a theoretical mechanism that will help explain why actors respond to one specific technology more than they do to others and how these responses change over time.

The practical perspective of technology usage suggests that human agency shapes how technology is used and is incorporated into social and work practices. Bakardjieva (2005) draws on several theoretical frameworks to provide a holistic picture of the user as an agent in the field of technological development and the shaping of technology, which supplements

technology use with user agency alongside their received cultural means. She views technology use experiences not as technology offering an absolute freedom of increased agency, but as a product of the specific encounter between technology and typical human projects arising in social situations. In such instances, reflexive actors create ways of using technology that have the potential to expand its meaning, form and function beyond producer 'scripts'. She states when looking at the use of Internet and agency:

Facing characteristic problems in their social-biographical situations, users discover affordances in internet technology that promise help in their struggle for regaining control over their lives. These are, then, the properties of the technology that users actualize on a systematic basis in the course of their everyday lives. By doing this they generate new practices anchored in that technology. (Bakardjieva, 2005, p. 118)

Bakardjieva (2005) observes that for technology to have a positive effect on human agency in any society or structure, it must be based on a situated rationalisation to transcend certain limitations or to open spaces for individual and collective action and creativity (p. 135). By identifying 'the possible' of a specific technology and the rationality of what an ordinary user is trying to do with it (identifying the need), in this case it can be empowering and may change the experiences of users. In contrast, in the absence of such situated rationalisation and identifying the possibilities of a certain technology, users will be forced to use technology in a specific way that surrenders to dominant economic and political rationality or social structures.

When looking at the Saudi context, I do understand that Saudi society has its own way of viewing change and dealing with it, regardless of whether this change is introduced through technology or not. The mixture between tradition and Islamic values is so complex that, according to Al Lily (2011), it becomes difficult to distinguish between social traditions and religion. This has resulted in Saudi culture being very strongly protected against any change that might lead people in society to question the social customs and norms. Therefore, social resistance accompanies any new initiatives or proposed changes to the traditional way of living, which is also evident in the case of technology development in Saudi society. For example, in the 1970s, an activist was killed by the police after he led a group which pulled down a television tower shortly after it was constructed. There was also a battle against selling foreign music; microphones and speakers in mosques were resisted for a long time;

and of course, the internet attracted much opposition (Al Lily, 2013). However, as mentioned in section 2.4, technology use became very popular, and now Saudi is recording world record numbers of Twitter users and other technology uses. Al Lily and Foland observe that, “despite the resistance, all these innovations have gone ‘above’ society and become popular in the country” (2014, p. 91).

I do not view the situation as that technology has gone ‘above’ Saudi society, but rather, society started to find relevance in technology. Since actors in a society are the agents who make, use and evaluate the technology, even if in Saudi they don’t make the technology but rather technology is imported from outside the country, but Saudi people are the ones who use it and evaluate it. Users of technology may see and use technology in a way that the engineers who designed it or marketers who advertised it never even considered (Johnson & Wetmore, 2009). This is apparent in technology use in Saudi, some recorded in this study, where technology is designed for one purpose but used to serve different purposes. In this case, technology didn’t go ‘above’ society, rather the emphasis is on social relations and context where technologies are being used, embedded and localised in a way that made technology affordances be used and recognised. I am aware that there are many political and economic reasons for the mass spread of technology and the Internet, but in this study, I focus on the ways technology, society and people as agents of change effect each other in a context like Saudi Arabia. I am interested to examine the impact of the use of technology on the agency of Saudi female teachers in this specific context, since they are the users and evaluators of technology.

## **4.2 Voice**

In this section, I answer the second question proposed by Edge and Richards (1998, p. 340): “To what extent does the research allow the people among whom it is taking place to speak their own thoughts in terms meaningful to themselves?”

### **4.2.1 Teachers’ Voices**

I have been inspired by some of the work done on teachers’ lives, like that of Goodson (1991, 1992, 2006), Butt *et al.* (1992), and Lynda Graham (2012). Through the study process, I have been seeking what Gore (1993, p. 68) calls ‘authority with’ rather than ‘authority over’, that is, working *with* the study participants whose experiences are central in this study rather than

*doing a study on them.* The ‘working with’ have led me as a researcher to enjoy direct engagement with the lives and practices of the teachers.

Goodson is a researcher in the field of teachers’ lives and an example of an academic who broke the boundaries of ‘traditional research’ (Edge & Richards, 1998). Goodson (1992) called for the field to reconceptualise educational research to make sure that the ‘teacher’s voice’ is heard both loudly and clearly. He provided a key statement in this regard:

I argued that researchers had not confronted the complexity of the schoolteacher as an active agent making his or her own history. Researchers, even when they had stopped treating the teacher as numerical aggregate, historical footnote or unproblematic role incumbent still treated teachers as interchangeable types unchanged by circumstance or time. As a result new more contextually sensitive research was needed which stressed life history. (Goodson, 1992, p. 4)

Butt *et al.* (1992) explained that what is most important is for the researcher and the outsiders to understand how teachers progress, develop and change their practice in the way that they perceive their experience of it. They argue that:

the notion of teacher’s voice is important in that it carries the tone, the language, the quality, the feelings, which are conveyed by the way a teacher speaks or writes. In a political sense the notion of the teacher’s voice addresses the right to speak and be represented. It can represent both the unique individual and the collective voice; one that is characteristic of teachers as compared to other groups. (Butt et al., 1992, p. 57)

Goodson (1991) encouraged a collaborative approach to investigate teachers’ work in the context of their own lives, allowing a rich flow of dialogue and data and affording teachers great authority and control. Butt and colleagues added:

we need to ask the teachers themselves what classroom change means for them, from their own perspective and criteria. In so doing, we need to develop research approaches that allow the teacher’s knowledge of classroom realities to emerge. (Butt et al., 1992, p. 53)

Reading the work of these scholars made me realise the absence in the literature of studies that give the Saudi female teacher the chance to speak, and represent her unique experiences of being a teacher and part of Saudi society in this era of rapid technological development.

Jamjoom (2010) states that today there exists a generation of female Saudi teachers who are believed to be the key players in the development of education. However, they lack voice and presence in current research, which has made it crucial to highlight their lived realities in research. This reinforced my conviction that the study design and methods must try to collect both the individual and collective voices of these women to produce in-depth and contextualised data that will allow teachers' knowledge of their own realities to emerge. Therefore, one objective was to represent as clearly as possible the voices of groups of female Saudi teachers working in primary schools in Saudi Arabia dealing with technology. This objective guided the decisions taken regarding the methods used in the study: i.e. the focus groups and interviews described in the following sections.

#### **4.2.2 Overview of Data Collection**

As this is a qualitative study drawing inspiration from the phenomenological approach, and whose main aim is to present teachers' voices, a smaller sample size seemed appropriate. Purposeful sampling was used, which is one of the fundamental distinguishing elements of qualitative enquiry (Patton, 2002). Patton (2002) identifies a number of purposive sampling strategies. One of these strategies, 'homogenous sampling', was chosen for this study in order to choose a small sample that will allow careful examination of the data generated to focus on the depth of information gathered, rather than on the number of participants. Homogenous sampling aims to describe a specific group (Patton, 2002) which, for the current study, is female Saudi teachers teaching in girls' public primary schools in Saudi Arabia.

I had to go through bureaucratic procedures to be able to access public school teachers. The procedure not only took time and effort, but also made me realise the reason why some researchers prefer to gain access to private schools instead of public schools. The procedure was time-consuming, with many letters rejected by the Ministry Research Department because of writing style or a missing word.

The first step of this process was to gain permission from the Research Department in the Ministry of Education to access schools. This permission was provided after a full description of the research and a letter from both the sponsoring body and my PhD supervisor for confirmation. After receiving the permission letter from the Research Department, I had access to the Head of the General Department of Education in the girls' section. After discussing the research, the Head of the General Department provided a list of schools'

names to select from, and then provided a written letter to each school's head teacher to allow me to enter the school. I selected three schools according to their use of technology.

After gaining permission, I went to three public primary girls' schools, that I name in this study Alef, Baa and Dal (inspired by Arabic Alphabets). In each school, I met the head teacher, to whom I introduced myself, explained the research and what I need the teachers to do, and set appointments for the focus group session and interviews. I also asked the head teacher for a room with a middle table where I can carry out the focus group activity, and that the room needs to be empty with only the teachers who are participating being there. Head teachers were cooperative, and provided a room for me to conduct research activities. They then introduced me to their teachers, with whom I had a chance to talk about the upcoming interviews and focus groups (see section 4.2.4). Potential participants then indicated their willingness to take part in the study. Most of the teachers were happy to participate, particularly as it was the end of the term and there were no students in the school. Potential participants were given an information sheet (see Appendix 2 p. 239) with information about the research and procedures for conducting focus groups and interviews, time allocated for focus groups and interviews as well as an explanation of privacy procedures and confidentiality of data. It also stated that participation is completely voluntarily and participants were assured that the collected data would be confidential and would not be used for any purpose apart from the study. They were also handed a form to sign indicating their consent to cite their words in the study under anonymous names (Appendix 3 p. 241). I explained the content of the information sheet and consent form fully to participants before starting the focus group sessions and interviews, as well as answering any questions they had.

This study used two data collection methods - focus groups using Ketso (see section 4.2.4) and interviews (see section 4.2.6). Regarding the transferability of the study findings, as I mentioned above, generalisation is not the aim of the study. Rather, the aim is to produce an understanding of a specific situation that readers can relate to, connect, and make use of what is presented in the study. To ensure the trustworthiness and credibility of the study findings, I generated different kinds of data from interviews, focus group interactions, and participant statements written on the Ketso leaves (more details on the use of Ketso in section 4.2.5).

I interviewed a total of four teachers, one teacher from Dal school (Haneen), one teacher from Baa school (Fadwa), and two teachers from Alef school (Sohila and Kinda). Each interview lasted around one hour (see more information on interview process in section 4.2.6).

I conducted three focus group sessions, one session in each school. Each focus group session had six teachers that lasted between one hour and an hour and a half. In Alef and Dal schools, the teachers I interviewed were different from the teachers that participated in the focus group. In Baa school, I interviewed Fadwa who participated in the focus group discussion as well. This helped me to observe different kinds of data generated from the two data collection methods (more insight into this is discussed in section 4.2.7).

Table 2: The schedule of data collection

Date	Activity	Name of School	Number/Name of participants
5-January- 2014	Introducing myself to Dal school head teacher/ distributing information sheets to teachers/ making appointments	Dal School	
6-January-2014	Focus group 1 using Ketso	Dal School	Five teachers
7-January-2014	Interview 1	Dal School	Haneen
7- January-2014	Introducing myself to Alef School head teacher/ distributing information sheets to teachers. Making appointments	Alef School	
8-January-2014	Focus group 2 using Ketso	Alef school	Five teachers
9- January-2014	Interview 2	Alef School	Sohila
9- January-2014	Interview 3	Alef School	Kinda
12-January-2014	Meeting Baa school head teacher, distributing Information Sheets and making appointments	Baa School	
13-January-2014	Focus group 3 using Ketso	Baa School	Six teachers
13-January-2014	Interview 4	Baa School	Fadwa

### 4.2.3 Challenges

Difficulty of access, particularly to the schools in the public sector, is considered a big challenge for both male and female researchers. For male researchers, the conservative nature of Saudi society and the fact that schools are segregated makes it difficult for a male researcher to enter girls' schools to interview, observe or interact with female Saudi participants. Some male researchers try to overcome this obstacle by sending their



questionnaires for female teachers to fill in, some others use emails to send their interview questions for teachers to answer. Of course, these ways can be valid for some research designs, but for studies that need in-depth interviews and the use of prompts which the researcher employs to gain more detail and insight, these approaches are ineffective. Also, public schools are much harder to access compared to private schools for both male and female researchers. The long and complicated process to gain access to public schools leads some researchers to situate their studies in private schools that need only the permission of the head teacher to gain access.

There is also the challenge of audio recording data in the process of data collection. Jamjoom (2010) stated that research with Saudi women is scarce and often lacks careful description of their personal experiences and views due to the fact that women in Saudi culture are regarded as *oura*, a term used to describe something extremely private. Women are also regarded as an object of family honour that needs protecting from the public by shielding physical body parts, voices and identities (Jamjoom, 2010). This means that video- or audio-recording of data is not acceptable in most female Saudi settings and is, therefore, considered a big challenge facing researchers.

Being aware of all these challenges made me more determined to overcome them. First, I was determined to enter public schools, although it is much easier for me to access private schools since I have personal relationships with head teachers with whom I used to work, and others who knew me as a student in their schools. But teachers in public schools were like a mystery to me that I needed to uncover, not only for myself but also for the others who will read this thesis.

#### **4.2.4 Focus Group /Ketso**

So far, I have argued for the value of making the voices of Saudi female teachers available for research and policy-making. However, educational change also happens ‘bottom-up’, and an ethical position, then, is to empower the individuals I work with as participants. Focus group methodology can act as a vehicle for this empowerment. A focus group is a method believed to help create a collaborative and safe atmosphere for participants to share their own experiences, and to explore and clarify their views with each other as well as the researcher (Kitzinger, 1995). It is defined by Kitzinger as follows:

Focus groups are a form of group interview that capitalises on communication between research participants in order to generate data... focus groups explicitly use group interaction as part of the method. This means that instead of the researcher asking each person to respond to a question in turn, people are encouraged to talk to one another: asking questions, exchanging anecdotes and commenting on each other's experiences and points of view. (1995, p. 299)

The aim of focus group is to capture the dynamic between the group of participants and the ways they interact with each other, and to assess what the main issues are that are being raised. Shahrokh (2014, p. 17) explains that “through the extensive surfacing of experiences, and through the sharing of challenges and solutions, research participants come to develop a more complete and holistic understanding of their situation”. In this study, one of the objectives is to allow a non-threatening and safe environment where teachers feel free to discuss and share their experience, and to create a context of collaborative thinking to encourage different kinds of dialogue and utterances to go back and forth between teachers.

Kitzinger states that, “When group dynamics work well the participants work alongside the researcher, taking the research in new and often unexpected directions” (p. 299). Wilkinson (1998) argues that the focus group method is considered as a distinctive data collection tool not for its mode of analysis but rather for the data collection procedure. It helps capture different kinds of dialogue and the process of co-construction of meaning. She adds that giving participants a space to engage collectively with each other in a supportive environment of sharing experiences enables the co-construction of realities between participants through the dynamic negotiation of meaning in the context being studied. Harrison and Barlow (1992, p. 12) connect sharing experiences in a focus group setting with the notion of empowerment: “Such active participation empowers group members who feel that their views and experiences are valued”. They added how sharing knowledge also empowers participants: “Those who participate are empowered by validation of their own knowledge and ideas and their capacities are augmented by the knowledge of their peers and the new connections made through collective analysis” (p. 12).

Focus group methodology has also been criticised. (Sim, 1998) argues that focus group methodology may encourage more confident members of a group to dominate. This means that focus groups may be less than ideal for uncovering individual views – especially from more passive participants. It also means that focus group methodology is unlikely to yield all

group members' views on every aspect, and hence the identification of group norms may not be as reliable as is sometimes claimed. Another potential limitation of focus group methodology is the tendency for participants to focus on what they 'find interesting to discuss' rather than 'what they think is important' (Morgan 1995, cited by Sim, 1998, p. 349). This may be particularly likely to happen if the participants already know each other well (Parker & Tritter, 2006). A related challenge for focus groups is the 'magnification effect', that is, focus groups may encourage a kind of 'collective moaning', which (Carey, 1995) claims means that the magnification effect "is always negative" (p. 490).

Looking at studies that used focus groups with women in the Gulf region, I found Winslow, Wilkins, Honein and Elzubeir's (2002) study, *Seeking Emirati women's voices: The use of focus groups with an Arab population*. They state that there is a lack of studies on the use of the focus group method in non-English speaking communities or in developing countries. In their study they conduct a series of focus group sessions with women of the United Arab Emirates in an attempt to identify Emirati women's health needs as a prelude to planning additional services and programmes for health. The researchers believe that focus groups were the most appropriate technique for collecting the variety of voices and in-depth data required for their study. However, they report on a number of challenges in using focus groups. This includes the facilitator doing most of the talking, group members talking over each other, and some engaging in one-to-one discussion with the facilitator. On the other hand, they say that in the group environment, women shared their thoughts and ideas freely.

Winslow *et al.* (2002) recommend that when conducting focus group with women in the Gulf region context, a researcher must seek women in settings where they normally congregate, to reduce the problems associated with transportation. They also mention that it is crucial to have a facilitator from the same gender and that they are a fluent Arabic speaker, but not to be from the same family or from the same community since participants were concerned with confidentiality issues, thinking that the facilitator might spread what they shared in the focus group to other people in the community. They advise researchers who plan to use focus groups in the Gulf region to make cultural adaptations to it, like making sure the questions being asked are appropriate to the culture, not having any male facilitator or research assistant in women focus groups, and making sure that participants come from the same religious and cultural backgrounds. They add that focus groups can provide rich insights into the needs and problems of women in this particular context, but they also conclude that

Emirati women participating in their study referred to themselves when talking about non-sensitive issues, but when talking about sensitive issues they spoke in generalities about other women. They also said that women were open in their criticism of the health-care system and saw the focus group as a channel to make their concerns known to the authorities.

Thomas (2008) has also written about conducting focus group research in Arabian Gulf settings and proposes it as a culturally sensitive methodology. He suggests that the focus group is an appropriate method to be used in the Gulf area since it allows for the cultural values and behaviours of the researched to have a “breathing space”, as he called it, plus allowing for a naturalistic way of collecting deep data from the local context.

We might say that these advantages and challenges of using focus groups apply not only to the Gulf region but to any other context as well. It may be better to say that focus group methodology is a data collection technique that is sensitive to cultural variables (Kitzinger, 1995). The importance of studies like Thomas (2008) and Winslow *et al.* (2002) in listing the advantages of using focus groups in the Gulf region is that it highlights the practices and culture of people, especially women, participating in the focus group activity, and that using focus group methodology is a helpful way for capturing these practices.

### **Ketso as a Focus Group Methodology**

In the first year of my PhD, I attended a workshop focused on Ketso as a way to help group dynamics and creative thinking. Ketso is a mind-mapping, hands-on kit that uses the analogy of a tree, with the main focus as the trunk of the tree, the branches presenting the themes, and the leaves being used for participants to write their ideas and thoughts. Ketso is used to structure a group conversation involving all participants in the process of generating ideas, both individually and as a group. Participants using Ketso are asked to write their ideas individually on colour-coded leaves, and then collaboratively place them on a shared felt workspace laid out as a tree structure. This process enables all participants to give input and then share and discuss this input with others in the group (Tippett et al., 2009). The Ketso facilitator can develop her/his own meaning of the leaf colours. However, the ‘standard’ meanings are roughly as follows: brown leaves signify ‘what works’ or ‘what we have already’ (metaphorically corresponding to the soil in which the tree structure grows); grey signifies ‘challenges’ (corresponding to clouds that bring rain); yellow signifies ‘goals’ (may be loosely linked to the sun driving growth); and green signifies ‘future possibilities’ or

‘solutions’ (corresponding to new leaves in the tree) (for additional uses, see Ketso, 2012, pp. 15-20).

After attending the Ketso workshop, I thought, “Why not using it as a research tool?” I then piloted it to see if it would be a good focus group method. I used Ketso with a group of female Saudi PhD students in the university, then with a group of master’s students (see Image 1), and then finally I piloted it with a group of female Saudi teachers from the school at which I previously worked in Saudi. I also carried out a few presentations and displayed posters in different conferences presenting Ketso as a potential research tool and got a range of feedback from academics and fellow researchers.

Ketso ([www.Ketso.com](http://www.Ketso.com)) was developed by Dr. Joanne Tippet in the mid-1990s in an attempt to help local villagers in southern Africa to be part of the process of village planning. It was then further developed and tested in the Environment Agency and Sustainable Consumption Institute at the University of Manchester (Furlong & Tippet, 2013). Each component of the physical toolkit, Ketso, was designed to enable key principles of community engagement and to give a voice to all. Tippet drew on the work of fundamental theorists like Gardner’s (1999) ‘multiple intelligences’, highlighting different ways people learn. Tippet considered the visual aspect of learning by using colourful, shaped leaves on which participants can write or draw. Also, she considered the physical aspect by enabling participants to move and place leaves in different places on the felt (Furlong & Tippet, 2013).

She also used the concept of mind mapping in designing the Ketso, referring to the work of Tony and Barry Buzan. Buzan and Buzan (1993) suggested that the human mind best thinks when there is a central point to start with, placing it in the middle with main themes displayed as branches from the centre. Each branch has a key word or an image to explain this branch, topics then are represented as expanded branches. All branches are connected. A further assumption is that starting a new mind-map helps clear previous assumptions from the mind, and that it therefore provides ‘space’ for generating new ideas. They emphasize the use of images and colours to aid creativity and the recall of information, they also recommend asking questions while working on the mind map to challenge the brain and stimulate answers, add images, prepare the materials before starting, and to prepare the workplace. They added that by doing a group mind map, members of the group join creatively, they combine the recall of knowledge and experience, they problem solve and analyse together, and they make decisions together. Although Tippet in her paper did not explain in detail how

she used the ideas of mind-mapping in designing Ketso, after using the kit I can see that there are many aspects of using mind-mapping that are considered in the design and application of Ketso. (More explained in the next section of how I used Ketso).

The existing uses of Ketso in literature tend to be within a participatory research frame (e.g. Furlong & Tippet, 2013; Ivashinenko, 2014; McIntosh & Cockburn-Wooten 2016; Tippet et al., 2011; Whitworth et al., 2015), where questions around the ownership and co-production of knowledge, as well as returning knowledge to its origins, are being asked. Participatory research aims at “reconstruction of knowledge and ability in a process of understanding and empowerment” (Bergold & Thomas, 2012, p. 19). The visual-tactile aspect of participants deciding where to place leaves on the Ketso branches (Furlong & Tippet, 2013) will potentially activate a wider range of cognitive processes than may be the case with ‘standard’ focus group methodology. This fits with the objectives of this study and qualitative research in general, which values the empowering element of giving voice to participants, particularly, in this study, to Saudi female teachers. However, Ketso has limited visibility in the mainstream qualitative research literature, which gives this study a methodological contribution in the field of qualitative research methods.



Image (1): Piloting Ketso with group of master's students

The reasons that motivated me to use Ketso include, first, my determination to get everyone involved in the discussion, even if one of the teachers is not active in a group setting, she will

also contribute by writing on the leaves and telling the group what she wrote. Second, I was also afraid that teachers would not elaborate in sharing their problems and the challenges they face. I was keen that teachers write down a problem, see it in front of them, share it, realise that others have the same problem, and think as a group about the source of this problem before placing it on the felt.

#### **4.2.5 Using Ketso with Participants**

Ketso was used in this study with a focus group to facilitate alongside the researcher. The teachers gathered in a room with Ketso felt placed on the table. The session took one hour. Prior to the focus group session, the teachers had time to read the information sheet and written consent was requested for approval to cite their words in the study and to audio record the workshop using a Dictaphone. The focus group was led by the researcher, who explained the main aim of the research and the steps for using Ketso (See Appendix 4 p. 243 for a full transcribed focus group session p. 255).

The Ketso workshop process was described to the participants using the analogy of a tree, with the trunk being the main focus, ‘Experiences using Technology’, and the branches being the themes. The first branch had the theme “Sources of Knowledge and Skills”, and this was further divided into three sub-branches with the themes - personal, school, and social. The second branch was “Technology Use”, and this was divided into three sub-branches - Teacher, Student, and Society. There was a third empty branch to allow the teachers to create their own theme for ideas that did not fall into any predetermined themes, as evident in Figure 1.

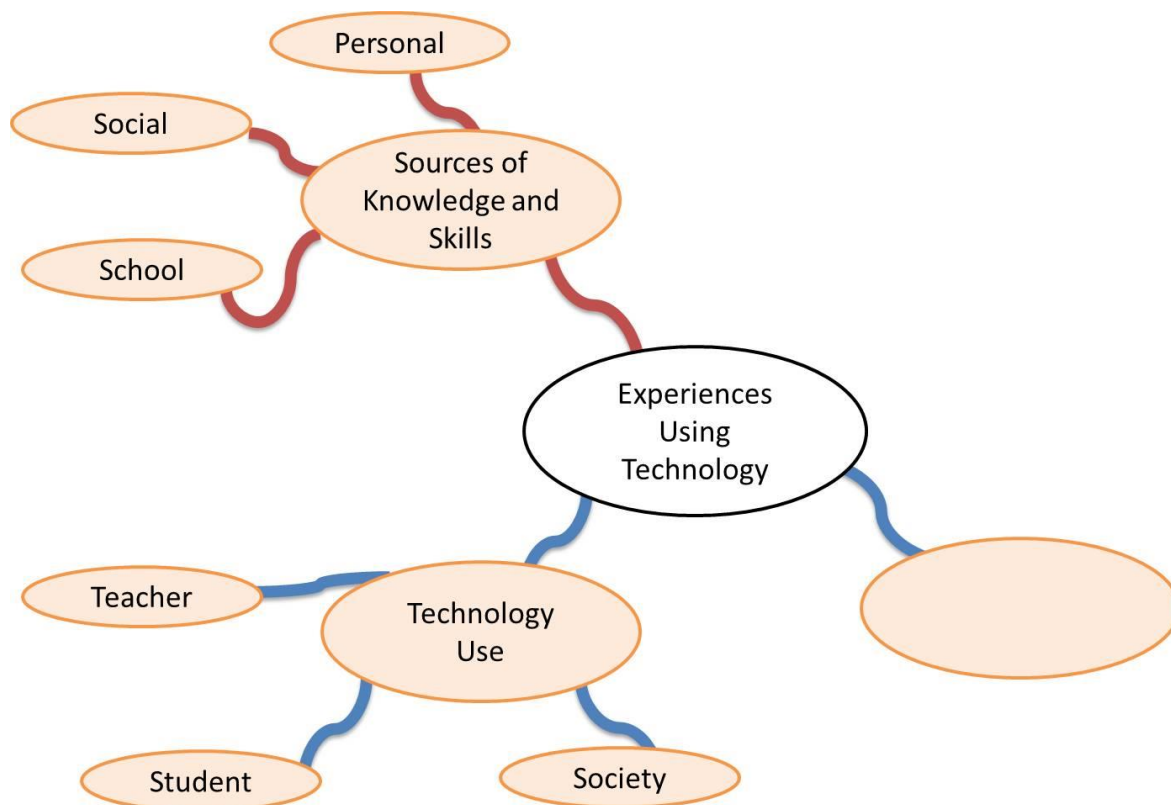


Figure (1): The Ketso branch structure

The process was as follows: I first informed the teachers of the colour of the leaves they will use, I asked a question, then each teacher answered the question individually by using as many leaves as she needed, after, collaboratively, each teacher read what she wrote on each leaf and teachers worked together to place each leaf under the suitable branch. This process was repeated for each branch, answering different questions, using different colour leaves. In the process, the teachers were asked to cluster leaves with similar ideas together. This process not only allowed an opportunity for all members to participate with their ideas and thoughts, but also allowed explorations of new ideas, which in some cases made the teachers write new ideas while reading each other's leaves. Because of this process, later on in following chapters, I use the phrase "The teachers" when presenting a common experience that teachers shared and talked about. The use of "The" does not propose that quantifiably all teachers shared an experience. It proposes that teachers in this process of collaborating and engaging in the focus group session with Ketso, chose to talk about this particular experience where most, if not all of them, agreed about.

Each colour leaf was used broadly as originally suggested by Ketso (see previous section), but with the following adjustments: brown leaves were for experiences of learning and using



technology, yellow leaves were for identifying positive impacts of using technology, grey leaves were for describing challenges associated with using technology, and green leaves were for suggested solutions. Participants were asked to think of each theme separately. The session started by working on ‘sources of knowledge and skills’ theme, and me asking: ‘How do you learn and develop your technology skills?’ The teachers were given three to four minutes to use the brown leaves to write each experience on a leaf. They could use as many leaves as they wished. Next, the teachers took turns to read their leaves, and as a group they positioned each leaf on one of the three sub-themes (personal, school and social – see Figure 1). Occasionally, this resulted in the writing of yet more leaves ‘as a group’. In order to make shared views visible, the teachers were asked to place any duplicated or similar statements together.

Next, the teachers were asked: What are the positive impacts and feelings associated with these experiences? Using the yellow leaves, each teacher individually recorded positive impacts and feelings, and this was again followed by group work to position this next set of leaves on the Ketso felt. The procedure was repeated with the grey leaves, prompted by the question ‘What are the challenges for development?’, and the green leaves, prompted by ‘How can we overcome these challenges?’ The sequence of questions that started by listing experiences of positive feelings, then challenges, then finally solutions, was crucial. Starting with positive thinking before barriers and challenges was designed to enhance creativity, based on De Bono (1990) that is, “creativity can be inhibited by overly critical, negative thinking [and] this tends to limit people from seeing possibilities outside of the existing situation” (De Bono, 1990, cited in Tippett et al. 2009, p. 41).

In order to generate more in-depth data, I as the researcher was involved in the process when the teachers read what they wrote on the leaves and placed them on the felt. In this process I listened to what the teachers wrote and then asked for more explanation, such as: ‘Why did you write this?’ and ‘Can you give me an example about this?’ By so doing, what was written on the leaves were like opening keys or cues for more detailed discussion that generated stories of lived experiences. In the focus group session, I emphasised that there were no right or wrong answers and what was important was to explore their own experiences and not to think about whether the experience described is present among other teachers in the same context.

Using Ketso in addition to focus group method helped the construction of knowledge between the teachers and to promote collaborative thinking between them when identifying experiences, challenges and solutions. Focus group data as stated by Berg and Lune (2004, p. 173) shows that “meanings and answers arising during focus group interviews are socially constructed rather than individually created”. Therefore, the data generated created a window onto the society through a collection of shared personal experiences. By using Ketso in the focus group session, it allowed it to be both individually created and socially constructed.

After using Ketso with the focus group method, there were some limitations with the focus group method presented in section 4.2.4, which Ketso helped to overcome: for example, the tendency for more confident group members to dominate the discussion in a standard focus group setting. Using Ketso helped to reduce this limitation since a central feature of using the kit was asking participants to write their views in advance on the leaves, and then asking each teacher to read what she has written. This encouraged less confident members to participate more fully, allowed time to all participants for individual reflection, and gave each teacher a more equal status in the subsequent interaction. Another limitation in a standard focus group is the difficulty of determining the extent to which participants share a view. However, Ketso, by asking participants to cluster similar statements together on the felt, created a record of individually and collectively generated views. This record then serves as a visual aid and starting point for the group discussion. Ketso also helped avoid the pitfalls of the ‘magnification effect’ recorded as one of the limitations that might occur in focus groups. In addition, the use of the different coloured leaves helped keep the participants focused, avoiding the possible magnification of the teachers’ dislike for a specific experience when using the grey leaves, and moving the discussion on to a more productive possible ways forward by using the green leaves.

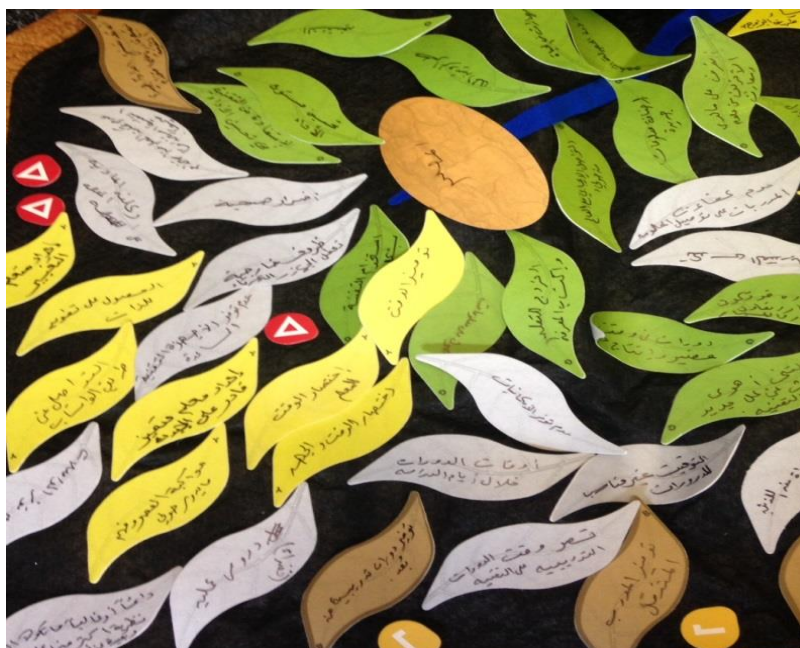


Image (2): Sample of Ketso leaves using different colour leaves

The data produced in the focus group were the statements written by the teachers on the leaves and the recorded discussions between teachers and the researcher. The numbers of duplicated leaves were recorded which indicated the importance of an experience and that was taken into consideration. In the following chapters, I present some of the statements that teachers wrote in the focus group sessions. For each presented statement, I identify the name of the school where the statement was written. With Some statements, I identify more than one school beside it, since it was repeated by teachers in two schools or in all three schools. That does not mean that the statement was completely identical in all schools, but it means that the meaning and the content was the same across schools but it may be written slightly differently by teachers.

#### 4.2.6 Interviews

The aim of doing interviews was to attain a rich description of the participants' practices, beliefs and perceptions of using technology in the context in which they live. It was also aimed to know the history of teachers' use of technology, how they used it in their personal lives and why they used it. Interviews are an effective method of collecting qualitative information: it provides good access to participants, particularly when researchers are interested in understanding the perceptions and meanings that participants attach to particular phenomena or events (Berg & Lune, 2004).

Since the aim of the study is to understand teachers' experiences and to let them present their voices, the interview questions were inspired by the teachers' voices literature reviewed in section 4.2.1. I piloted an interview that first had 13 questions, but I found that the interviewee answered most of the questions before I asked them. The story-telling technique provided a space for the teachers to talk freely and tackle most of the areas I was interested in. Therefore, I reduced the questions to 8 as this allowed more space for prompting and asking for more examples from their practice (see Appendix 5 p. 256 for a list of the interview questions).

This study's interview questions focused on the following areas:

- When did you start using technology? This question opened a channel for teachers to talk about their past experiences of using technology as children, at home, in school as students, in university, and in their working experience. Through this '~~life history~~' question (Goodson 1992), the teachers started telling stories of their development.
- Can you tell me more about yourself? Through this question, the teachers explained the subject they were teaching, their teaching styles, and ways they used technology in their practice. Prompts are aimed to elicit more specific examples of ways of using technology. I was conscious of not asking direct questions relating to their teaching. I wanted the teachers to feel free to talk, and not to feel that I was more interested in their practice than their experience.
- Can you tell me about a critical moment or an incident that happened to you while using technology in your practice? The teachers talked about experiences and phases in life that had left an impact on their use of digital technologies. Goodson (1991, p. 42) emphasises the importance of critical incidents in teachers' lives and experiences that have left an impact on their practice.
- What is your ambition, your future self, what you wish to be/not to be, to happen, or to change? Butt *et al.* (1992) mentioned the need to project into teachers' preferred personal/professional futures in a way that relates to their reflections on their personal and professional lives so far.

#### **4.2.7 Conducting Interviews with Participants**

I interviewed Haneen from Dal school, Sohila and Kinda from Alef school, and Fadwa from Baa school. The interviews took place in a private room in each school. Unlike the focus group sessions, where the teachers shared their experiences in front of each other, the

interview gave an opportunity for the teacher to talk privately only with the researcher. I started by introducing myself and explaining that my main interest was in their experiences and stories.

The first interview with Haneen went really well. As soon as I gave her the opportunity to talk about herself she talked freely and shared even personal stories from outside the school. She was emotional when she talked about her father and even had tears in her eyes. Her experiences with technology were very rich. I noticed that Haneen was not afraid to challenge society, and she was eager to say what she wanted to say, even against the Ministry. She shared the challenges she faced being a teacher, a Saudi woman and even a wife. Her responses were long and rich.

The second interview with Sohila was rich as well. Sohila made comparisons between her experience when she studied at university a few years ago, without technology, and her sisters' experience studying at university with new technologies. Her teaching practices using technology were impressive (see Appendix F p. 248 for a full translated interview). Although she didn't share personal stories and challenges she faced in her personal life, like Haneen did, she gave a detailed picture of herself as an ambitious teacher with creative practices, her dreams, what she wished for and the challenges she was facing as a teacher.

Kinda's interview was different, perhaps because Kinda was teaching English in two schools at the same time, and the fact that she was younger than the other teachers. Kinda provided good data but she needed guidance throughout the interview. I needed to prompt her with many questions to encourage her to share her experience.

Interviewing Fadwa was a challenge. Fadwa was a 'strong headed' woman with a high level of confidence. She challenged all the obstacles she faced, she had big dreams, and she also challenged Ministry policies and was eager for development professionally. When interviewing Fadwa, I noticed that she was strict in her beliefs and that she didn't want to challenge society or culture. My experience interviewing Fadwa was different than interviewing other teachers, although they are all teachers I never met before, but with Haneen, Kinda and Sohila, I felt we are at the same level, teachers talking to each other. But with Fadwa, perhaps because she had a high level of confidence and strong personality, I felt I needed to give her a higher position for her to be happy to share her experience and to open

up by praising what she was saying all the time. She provided rich stories especially of how e-learning opened a new opportunities for her.

The data generated by the focus groups and interviews were different. The focus group data showed common and various experiences and attitudes between the teachers, by giving them space to articulate their experiences through thinking individually and collectively in a group setting. On the other hand, interviews provided more detailed, personal data, where the teachers had an opportunity to talk about their life history, weaknesses, people who had a great impact on their lives, and their ambitions. The interview design gave more opportunity for both the interviewer and the interviewee to talk freely. In this case both methods complemented each other by providing different approaches to the teachers' experienced realities.

### **4.3 Representation**

In this section I answer the third question proposed by Edge and Richards (1998): "Through what forms of discourse will the writer best be able to express what he or she has to say?" (p. 340). To answer this question, I highlight three main points. The first point is the process involved in conducting a multilingual study, including ways of handling and transcribing data, while the second point is the data analysis process and the approaches employed in this research.

#### **4.3.1 Undertaking Multilingual Research**

Conducting multilingual research has been discussed by an increasing number of researchers in the field. For example, Robinson-Pant (2005) has reflected on her own journey as well as her international students' journeys in undertaking multilingual research. She stated that studies that looked at international students' experiences in UK universities tend to view conducting research in more than one language as a deficit and a 'language problem'. She suggests that language issues need to be carefully considered throughout fieldwork and writing-up stages. Holmes *et al.* (2013) have also highlighted the different experiences of international students conducting research in two languages and the problems they face. These include, for example: additional work required in multilingual contexts; analysis software that does not support many languages; challenges in reporting metaphoric expressions; and translation, among others. Holmes *et al.* (2013) suggest that multilingual studies involve many possibilities that "create both affordances and complexities but often

the issues involved remain hidden and unspoken” (p. 3). Below, I discuss language considerations, given the fact that this study is multilingual.

The study is considered multilingual since I, the researcher, collected data in one language (Arabic) and presented it in another language (English). As I started my study, I realised that conducting multilingual research is time consuming, and involves many additional skills, like translation. However, I also realised the potential advantages of my multilingual background. In writing my literature review, I explored English literature as well as Arabic literature, which provided some insight to the study.

I also had the advantage of speaking the same language and having the same dialect as the participants in both focus groups and interviews, since Arabic is the mother tongue for all the participants taking part in the study as well as for the researcher. Using the same Saudi dialect, I believe, helped establish a comfortable atmosphere and an insider-insider relationship between me and the participants.

After the data collection process, I transcribed the data in its Arabic original language (for more details, go to section 5.3.3). In the process of analysing the data, and based on insights I had drawn from my pilot study, where I translated all the interview data from Arabic to the English language before analysing it, I found that some meanings were lost in the translation. Hence, since my concern in this doctoral study is to try the best I can to represent the voices of the Saudi female teachers who participated in the study, I decided to analyse the data in its original language and then translate the parts I would use in the main body of the thesis (see Appendix 7 p. 265 for an example of the Arabic transcripts).

In the process of reading and re-reading the Arabic data (for more details, go to section 4.3.3), I started to write notes beside the data and create codes. What I noticed is that I generated codes in English rather than Arabic. This might be because I was continuously cross-referencing what the participants said with the research questions, literature I had read, and my own experience in conducting research in English.

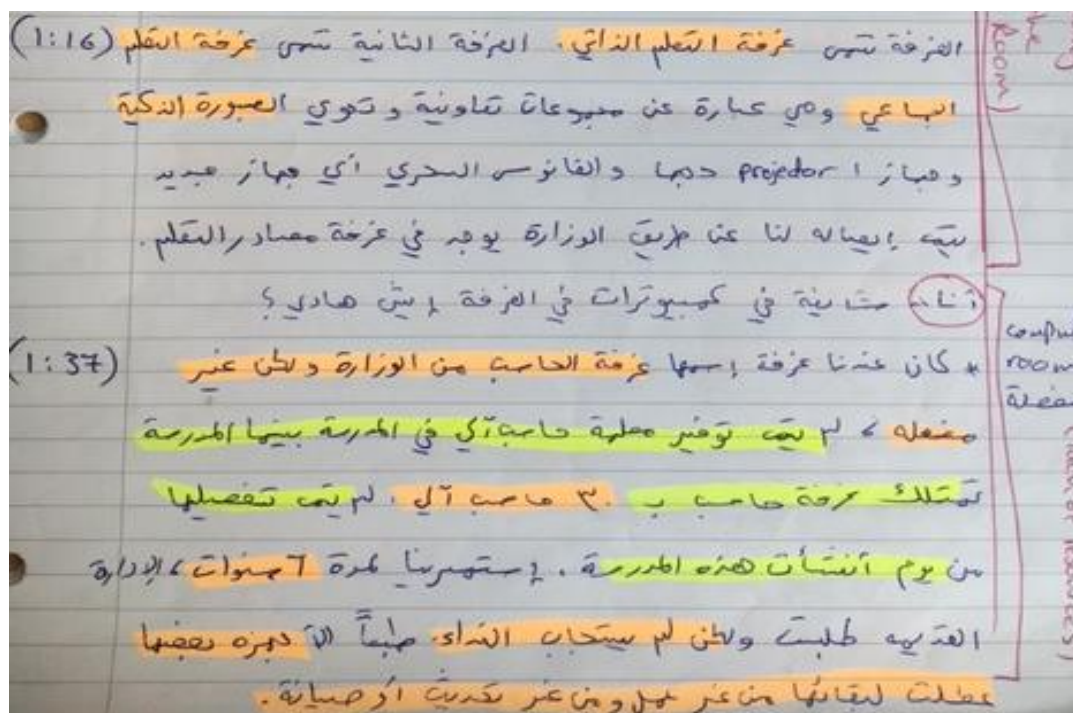


Image (3): Original interview data showing Arabic data and researcher coding notes

For example, when a participant said that “in this school, we teachers gathered money from each other to install projectors (زى هذه المدرسة احنا المعلمات قطينا ودفعنا وركبنا شاشات عرض) then, I thought of the codes “taking responsibility” and “lack of resources” rather than its closest Arabic equivalents (تحمل مسؤولية) and (عدم توفر اجهزة). In other words, I found myself formulating codes in English and then thinking of what are their Arabic equivalent was. Therefore, I decided to write the codes in English straightaway.

Another issue that I had to consider when doing research multilingually was the representation of data in the study. I decided to provide the reader with both the original Arabic and translated English extracts of data in the main body of the study, to give the readers the chance to look at, and for some readers to read, the original data that represents the real words and expressions of the teachers participating in the study.

Exploring both English and Arabic literature, and generating data in Arabic and presenting it in English, plus adding Arabic extracts in the main body of the thesis, took time and effort. On the other hand, having both languages offered me as a researcher the possibility to continuously make comparisons to check the translation. Also, having my mother tongue presented clearly enriched and empowered the study, the participants, the Arabic language,



and me as an Arabic/English multilingual researcher, and that all feeds back into the notion of voice and presenting the voices of my participants.

### 4.3.2 Analysis Process during Data Collection

As stated by Patton (1990), analysing qualitative data is neither systematic nor standardised, but rather long and detailed. In this study, the first step in the analysis process started in the data collection phase. In focus group sessions, I asked participants after writing their ideas on the Ketso leaves, to place similar ideas together and cluster them under a theme that was identified either by myself or the participants themselves. Identifying common patterns of experiences and clustering them under themes was the first step of the analysis process. Repeating Ketso three times in three different schools, showed patterns that kept coming up, and this helped me to identify common experiences. Thus, the teachers had an active role not only in the collection of data but also in part of the analysis process.



Image (4): Ketso leaves clustered with a theme identified by participants

Image 4 demonstrates an example of ideas clustered by the participants in one of the Ketso/focus group sessions. The teachers placed similar ideas together and created a new theme that re-presented these ideas. They named the theme “easiness and flexibility” (سهولة و المرونة), and under this theme they placed similar yellow leaves that represented positive experiences of using technology:

“Reaching information easily” (سهولة الوصول للمعلومة)

“Presenting information easier” (تسهيل عرض المعلومة)

“Facilitating the recall of information and making linking knowledge easier”  
(تسهيل الاستدكار وربط المعلومات)

“Reinforcing information to the receiver” (تثبيت المعلومة في ذهن المستقبل)

All these ideas are talking about different ways technology helped the teachers to present and find information in an easier way. Here, the different teachers in the group placed similar ideas together. They also clustered challenges regarding using technology with their students using the grey leaves in the same area. Later in the analysis process, this cluster helped me to see the positive experiences of the teachers using technology in their classrooms and the ways it facilitated their teaching.

Also during the data collection phase, I always had a notebook into which I wrote notes of the main points raised, common experiences that I noticed, rich phrases used by teachers, or any other observations that I found interesting immediately after finishing an interview or a focus group. These notes were helpful in the analysis process since it reminded me of my reflections at that time and the common issues that I found similar in the three different schools.

#### **4.3.3 Analysis Process during Data Processing (Transcription)**

Organising data, which means that all data are ready for the later, more formal analysis, is an important and crucial step in the analysis process. All interview and focus group discussions were fully transcribed in Arabic. The process was carried out by myself since it allowed me to get closer to the data, and write comments and potential codes.

I did not use any analysis software in the analysis process. I used MS Word alongside actual paper and highlighters. In the transcribing process, since I wanted to transcribe the data myself, I decided to write by hand since I am a slow typist with an Arabic keyboard. I found that writing by hand allowed me to concentrate on what had been said and helped me a lot in listening carefully to what the teachers were saying. I made sure the papers used had big margins for notes and I added recordings of the time on the left side of the transcripts. After transcribing the data, I used highlighters to highlight parts of the data and used the paper margins to write comments.

For the data generated in the Ketso sessions, all data written on the leaves were transformed into an Excel spreadsheet made specifically for the Ketso kit and then translated to English. Using the readymade Excel sheet helped me in identifying leaf colour, themes and the number of repeated leaves. I repeated this process with the three focus group sessions; Image 5 demonstrates an example of one of the Ketso sessions transformed into the Ketso spreadsheet.

Felt	Branch	Leaf Type	Participants' Idea (written on leaf)	most important challenge	most important s
Felt One	Student uses of technology	challenges	Poor handwriting and spelling skills ظروف خارجية كالتقطع التيار و تداخل الجيران		
Felt One	Student uses of technology	challenges	external conditions like machine crashes or electricity shutdown عدم وجود مكان مهيأ لاستخدام التقنية		
Felt One	Student uses of technology	challenges	The lack of a set place in school for the use of technology انعدام مساحة كافية لخدمة جهاز العرض و غيرها		
Felt One	Student uses of technology	Solutions	health damage because of to the projector rays and other تهيئة صفوف ذكية		
Felt One	Teacher uses of technology	experiences	prepare smart classrooms اختصار الوقت و الجهد		
Felt One	Teacher uses of technology	experiences	brevity of time and effort اعداد معلم متميز قادر على الاندماج		
Felt One	Teacher uses of technology	experiences	distinct teacher capable of creativity مواهبه المبررة و فهم ما يدور حوله		
Felt One	Teacher uses of technology	experiences	Keep up with what is going on around me time and understand and know what is going on around me		
Felt One	Teacher uses of technology	experiences	communicate through WhatsApp التواصل عن طريق الواتس		
Felt One	Teacher uses of technology	experiences	Access to self-development التحسين على تطوير الذات		
Felt One	Teacher uses of technology	experiences	Prepare a learner capable to make a change اعداد معلم قادر على التغيير		
Felt One	Teacher uses of technology	positive feelings and ex	Identify and know what others have of Science and Skills التعرف على ما لدى الآخرين من علوم و مهارات		
Felt One	Teacher uses of technology	positive feelings and ex	adding more information and knowledge تحسين المعلومات و المعرفة		
Felt One	Teacher uses of technology	positive feelings and ex	Positive communication with the world around me التواصل الإيجابي مع العالم من حالي		
Felt One	Teacher uses of technology	positive feelings and ex	breaking the boring routine كسر الروتين الملل		
Felt One	Teacher uses of technology	positive feelings and ex	زيادة الحماسية التعليمية		

Image (5): An example of the Ketso spreadsheet

#### 4.3.4 Analysis Process during reading and re-reading

After all the data was transcribed and organised, I started the process of reading and re-reading the interview data: first, each interview alone, then all together, and I then moved to the focus group discussions - each focus group alone, then all together. I found this process helpful because it helped me to reach an initial idea of common experiences across different interviews and focus groups, and to have a sense of the different kind of data generated by the two different methods. For example, in this process I noticed that interviews generated more personal data that showed how the teachers viewed themselves and their personal experiences and what they want to achieve. It also showed some gender issues that were not addressed

clearly in the focus groups. On the other hand, in the focus groups the teachers were more critical and talked about political and social challenges and different ways to overcome it. Focus group discussions using Ketso also generated more data on collective experiences, with the teachers encouraging one another to open up and be more critical by either agreeing or challenging each other.

In the process of reading, I used the paper margins to write notes to indicate any contradictory experiences or any important examples that needed highlighting. I also highlighted phrases participants used that indicated an experience that they found important. These notes were very helpful in the following step of identifying codes more formally and later also when looking for specific information in the data.

#### **4.3.5 Analysis Process: From Data to Codes**

At this stage, I decided to use thematic analysis, which is focused on finding patterns (themes) within the data (Boyatzis, 1998). Braun and Clarke (2006) suggest that thematic analysis is a flexible and useful research tool for both its theoretical freedom and its capacity to provide a rich and detailed account of data. I used the inductive approach of thematic analysis. This means that codes, categories and themes emerge from the data rather than being imposed by theory or previous studies. I use the term 'pattern' to refer to regularity in the data which later might become a code, category or a theme. Table 6, later in this chapter, shows how I distinguish between codes, categories and themes. For now, it is useful to know that codes are more specific things which in later stages of the analysis 'add up to' categories, and combinations of categories 'add up to' themes. In this analysis stage, for both interviews and focus groups, after reading each transcript separately then reading them several times together, I started writing notes and identifying shared patterns, then giving these patterns names that described them. Through this process, I started creating codes.

At this stage, I found adapting an inductive approach to identify codes from the data very challenging and complex. Since there is no clear framework to guide the selection of data that will be useful to the study and the identification of codes, and wanting to do my best to represent the voices of the participants, I questioned myself continuously about the experience that the teachers tried to describe and how I could produce a name or a label that sufficiently captured it. This process involved reading some sentences several times, each

time revealing a different angle. This involved my moving back and forth between data and codes, and continually modifying codes.

In this process, I also compared statements written by the teachers on the Ketso leaves with the codes identified in the transcribed data, asking myself if the codes captured the issues the teachers identified and were discussing. I also compared codes identified in the interviews with others identified in focus group discussions to check similarities and differences. There are some codes that were present in the interview data, some others were discussed in the focus groups, but most codes appeared in both the interviews and focus group data.

The following tables present the codes *Liberation from Traditional Teaching* and the code *More Control over their Development*. It attempts to show the process of moving from data to codes, it also shows the triangulation between different sources of data and how it feeds into the same code. In Table 3, I demonstrate the code *Liberation from Traditional Teaching* from different data sources.

Table 3: Demonstration of the code *Liberation from Traditional Teaching*

Data	Data Source	Code
<i>-Breaking the boring routine</i> <i>-Improve the level of performance</i> <i>-Prepare a distinct teacher capable of creativity</i> (Alef School)	Statements on Ketso leaves: Teachers discussed how technology helped them to move from the boring routine of teaching.	Liberation from Traditional Teaching (The data in this code were from three sources)
<i>Ghada: technology made teaching more enjoyable and fun, it changed teaching</i> <i>Sara: before technology, teaching was very boring.. We had to follow a specific protocols but now it's different, now we have more freedom .</i> (Alef School)	Focus group discussion: teachers talked about how technology changed their teaching experience.	
<i>In Quran lessons, most students find this lesson boring, I downloaded name-mixing software. I told my students that this program picks the name of the winner who will recite the Quran. The software mixes their names then stops at one name, this chosen student will then start reciting the verses that they needed to memorise. I repeat</i>	Interview data: In interviews teachers gave examples of new practices using technology and their experiences regarding using it in their classrooms.	

<i>the process so most students' names are picked. This software made reciting really exciting for students. (Interview 1:Sohila)</i>		
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In Table 4, I demonstrate how the code *More Control over Their Development* emerged from different data sources.

Table 4: Demonstration of the code *More Control over Their Development*

Data	Data Source	Code
<i>-Keep up with the world and understand what is going around me</i> <i>-Access to self-development</i> <i>-Getting out to learn and gain knowledge</i> <i>-learn independently from the internet</i> (Alef School)	Statements in Ketso leaves: Teachers wrote that technology gave them the opportunity to learn independently and gave them more choices to develop.	More Control over their Development (this code was present in all three data sources)
<i>Abeer: I feel technology made me open to the world around me by searching what other teachers are using, it widened my horizons</i> <i>Raja: Technology gave us the opportunity to go out and learn something new. (Dal School)</i>	Focus group discussion: Teachers discussed how technology made them open to the world and gave them more opportunities to continue learning.	
<i>Technology gave me the opportunity to learn from others online. I don't need to wait until they find me a place in training. I can learn independently (Interview 2: Haneen)</i>	From interview: teachers gave examples of ways technology helped them to be independent learners.	

Writing notes, making comparisons between data from different sources, and looking for shared patterns helped me in the process of identifying codes. The next section explains the next step, which is joining common codes to create categories, then themes.

#### 4.3.6 Analysis Process: from Codes to Categories and Themes

This step involved finding similarities between different codes and giving them a category name that described them. Then, reviewing the categories in relation to codes and joining categories to form themes, as suggested by Braun and Clarke (2006).

Refining the names of codes, categories and themes was an ongoing activity throughout the analysis process.

Here, I present an example of the analytical procedure of moving from codes to categories then to themes, using the previous two codes presented in Tables 3 and 4. For instance, when looking at how the use of technology changed the experiences of participants, *Liberation from Traditional Teaching* and *More Control over their Development* were grouped under the category *More Control over Teaching and Learning*. I noticed that the teachers, by using technology, have more options in their teaching, and that they access information and gain knowledge from open resources available from the Internet. This gave them more control over their teaching and development, and therefore increased their sense of agency.

I found other codes relating to the sense of the teachers' taking control and gaining more agency through using technology. The codes *Overcome Transportation Barriers*, *More Communication Options*, and *Easier Communicating across Gender Lines* were grouped together in the category *More Control over Communication*. This showed part of the teachers' experiences when they talked of ways technology gave them more options to communicate with others, and made them overcome a lot of the challenges they were facing. These major categories *More Control over Teaching and Learning* and *More Control over Communication* were grouped under the theme *Enhancing the Sense of Agency*.

#### **4.3.7 Analysis Process: Codes, Categories, Themes and the Research Questions**

Visualising relationships between codes and the ways they developed to create categories then themes by using tables was a powerful analytical tool. I found it very useful because it showed a comprehensive view of the analytical steps in the light of each research question (See Tables 5, 6 and 7). Each research question had a table illustrating different codes and how they are grouped to create categories, then create themes, in order to eventually answer the research question.

Each code in the table is coloured according to where it was mostly addressed. The codes in yellow appeared mostly in interview data, the codes in blue were mostly discussed in focus group discussions, and codes in green appeared in both interviews and focus groups.

Table 5: The codes, categories and themes for the first research question

Characteristic codes and Categories	Teachers Characteristics	Themes	Teachers Actions	Activity Codes
<b>Self-Image Category</b>		Resisting Current Situation		Buying Technology Resources
-Self-Image as Fighters				Physical Burden
-Self-Image as Ambitious		Taking Responsibility		
-Self-Image as Responsible				Applying New ways in Teaching
-Self-Image as Different				Learning Independently
<b>Teachers' Beliefs</b>				Searching for Technology Activities
-Beliefs in Technology Advantages		Improvising		Sharing and Collaborating with Others
-Religious Beliefs				Adapting Technology to Society
<b>Financial Ability</b>				
-Financial Ability				
<b>Teachers' Skills</b>				
-Problem Solving Skills				
-Reflection (Adaptation) Skills				
-Technological Skills				

Table 5 illustrates the codes, categories, themes and the relationship addressing the first research question: How do Saudi female teachers' influence their own use of technology in their practice?

After reading and re-reading the data and identifying codes, I realised that the teachers enabled their use of technology both by being who they are, displaying their own characteristics, and by what they do, i.e., their actions. For this reason, Table 5 is different from the tables for research questions 2 and 3. It has codes on both sides. The left-hand side displays codes that feed into the teachers' characteristics. There are four categories: a *Self-Image Category* that contains the codes *Self Image as Fighters*, *Self-Image as Ambitious*, *Self-Image as responsible* and *Self-Image as Different*. These codes were mostly from the interview data where the teachers had the opportunity to talk more freely about themselves and the ways they view things. Examples of data include phrases such as: "I always see myself as different" or "I do things differently", "I want to open new doors", and "Saudi women are warriors" - that is, phrases that showed clearly how they viewed themselves. We can see that the code *Self-Image as Responsible* is highlighted in green since it appeared in both interviews and focus group discussions. For example, when the teachers were discussing their actions of spending their own money on the school in the focus groups, they said that they can't leave their school dirty or without any resources, and hence that they needed to



take action. This shows how they view themselves as being responsible and how this was linked to action.

The second category is *Teachers' Beliefs*, and this had two codes. *Beliefs in Technology Advantages* representing teachers' beliefs regarding the need to apply technology, and that technology will help the educational process. It also includes the second code *Religious Beliefs* that includes data showing the teachers saying that buying things for school from their own money is charity and that they do this because they believe God knows what they are sacrificing and it is recorded as a good deed. These beliefs again had an effect on their actions. Both codes were present in both the interview data and the focus group data.

The third category is *Financial Ability*, and this includes their ability to buy things for the school that has an effect on their actions. This code appeared only in the focus group data; the teachers did not talk about spending their money on the school in the interviews. This issue seemed to arise in the focus groups because the teachers appeared to provoke one another to talk about it.

The fourth category is *Teachers' Skills*, and this includes the code *Problem-Solving Skills*, representing their use of technology to solve the challenges they were facing. It also includes *Reflection (Adaptation) Skills*, representing testing a certain technology and reflecting on the advantages and challenges they faced. Finally, it included *Technology Skills*, representing the high level of technology competence teachers had and which helped them take actions.

The right side of the diagram contains teacher action codes. There is the code *Buying Technology Resources*, which shows teachers' experiences of supplying their schools with technology resources paid for with their own money. There is the *Physical Burden* code, representing the teachers' experiences of carrying the equipment from class to class and how this placed a physical burden on them. The code *Using Available Resources* represents the teachers' experiences of using technology from their daily life in their teaching, like using their smart phones to supply internet in their classrooms or connecting their smartphones to projectors to display a YouTube video. The code *Applying New Ways in Teaching* represents different ways the teachers use new technology resources in their classrooms. The code *Learning Independently*, represents an action the teachers do to learn new technology skills, such as searching the internet for new ways or looking for tutorials to learn new skills. The code *Sharing and Collaborating with Others*, represents ways they shared and collaborated to learn and develop, either with other teachers, or technicians or through forums. Finally, the

code *Adapting Technology with Society*, represents the teachers making sure that any technology fits into society and does not challenge any social beliefs or practices.

Between the codes describing characteristics and the codes describing actions are the main themes that represent the experience of the teachers. These include *Resisting Current Situation*, *Taking Responsibility* and *Improvising*. The table illustrates how the teachers' personal characteristics, which include their self-image, their beliefs, their financial abilities and their skills, enabled them to resist their current situation, take responsibility and to improvise new solutions. It also illustrates how the teachers' actions also feed into them resisting their situation and taking responsibility and improvising new solutions. Their characteristics and actions come together to make them resist their current situation, take responsibility and improvise. Chapter 6, which responds to research question 1, discusses these themes in detail.

Table 6: The Codes, and themes for the second research question

Codes	Themes
Enabling Development and Learning Individually	Enabling Saudi Female Teachers as Learners
Enabling Development and Learning through Distance Learning	
Enabling Development and Learning Socially	
Enabling Communication with Mothers	Enabling Saudi Female Teachers' Communication
Enabling Communication with Society and the World	
Enabling Information Filtering	
Enabling Collaborative and Interactive Learning	Enabling Saudi Female Teachers as Teachers
Enabling Enjoyment and New Encouragement Ways	

Table 6 illustrates codes and themes that helped answer the second research question: How does the use of technology enable Saudi female teachers to change their professional experiences? I added “the use of technology”, rather than just “technology”, to the research question because it is not only the technology itself that facilitates the change of experience, it is the *use* that is determined by technology users influenced by their beliefs, skills, and society. Many data in these codes have been used in other codes but here it is viewed under the lens of technology affordances. The teachers' experiences of technology are represented as ways in which technology offered new opportunities that changed the experiences of the teachers and women in this specific context.

The teachers' experiences from both interview and focus group data showed that technology enabled teachers to learn and develop in many ways: for example, distance learning and the ways in which it opened new options for development, such as, open online resources and distance-learning programmes. These experiences were placed under the code *Enabling Development and Learning thorough Distance Learning*. Technology also opened up new channels to learn from others through social media, either from YouTube videos, forums or other resources that enabled teachers to be independent learners. I placed these experiences under the code *Enabling Development and Learning Individually*. The teachers shared experiences of the ways technology use opened new opportunities for them to share and learn from each other and from other people online; I placed these experiences under the code *Enabling Development and Learning Socially*. I joined both codes under the theme *Enabling Saudi Females as Learners*.

Another major effect of technology in the Saudi teachers' lives is the communication options that it offers. I placed the code *Enabling Communicating with Mothers*, representing ways in which technology helped the teachers to reach their students' mothers in a more effective and easy way. This code was present in both the interview data and the focus group data. Also, the code *Enabling Communicating with Society and the World* represents data that arise mostly in interviews detailing the ways technology opened new channels of communication between females and males in the Saudi context and with other people all around the world. I added the code *Enabling Information Filtering* to represent the ways technology helped the teachers to be better connected and to communicate information, by reaching and filtering information that they received through technology. I joined all three codes under the theme *Enabling Saudi Female Teachers' Communication*.

The codes *Enabling Collaborative and Interactive Learning* and *Enabling Enjoyment and New Encouragement Ways*, represent teachers' new practices of using technology and how it changed their teaching experiences. I joined the two codes under the theme *Enabling Saudi Female Teachers as Teachers*. Chapter 7, which responds to research question 2, discusses these themes in detail.

Table 7: The codes, categories and themes for the third research question

Codes	Category	Theme
-Liberation from Traditional Teaching -More Control over their Development	More Control over Teaching and Learning	Enhancing the Sense of Agency
-Overcome Transportation Barriers -More Communication Options -Easier Communicating Across Gender Lines	More Control over Communication	
-Teacher Work Overload -Training Problems -Lack of Appreciation -Inaccessible Resources -Ministry of Education Policies	Challenges as Teachers	
-Language Barrier -Power Struggle	Challenges as Learners and Females	Becoming More Aware of their Reality (Frustration)

Table 7 illustrates codes, categories and themes that helped answer the third research question: How does the use of technology change Saudi female teachers' views of their lived experience? Again, there are many data that are repeated in these codes but were viewed from the experiences of teachers that connect to teachers' feelings and their experiences of living in their world.

These two initial codes *Liberation from Traditional Teaching* and *More Control over their Development* represent the ways technology changed the experiences of Saudi female teachers as teachers and learners. It helped them to move away from the routine of teaching to find a more creative and enjoyable way. It also represents the ways technology changed the experience of teachers as learners by giving them options to learn and develop. These two codes include data addressing teachers' feelings and the ways technology affected them, offering more choice and control over their situation. These two codes appeared in both interview and focus group data, and are joined together in the category *More Control over Teaching and Learning*.

The codes *Overcome Transportation Barriers*, *More Communication Options* and *Easier Communication across Gender Lines* represent the ways technology changed the experience of teachers being Saudi and living in this particular context. By giving them more options to communicate with both females and males in their society and more options to communicate

and learn without leaving their houses, they were helped to overcome the barriers placed on them, such as transportation challenges. These codes are more specific to Saudi women living in the Saudi context. It highlights the challenges they are facing and the ways technology changed teachers' experiences. These two codes are joined together in the category *More Control over Communication*.

By examining both categories *More Control over Teaching and Learning* and *More Control over Communication*, it shows that technology's effect on teachers in both these categories was to give them more choices, and by increasing the number of choices their control over their situations increased as well, and by increasing their control over their situation comes the increase in their sense of agency. Therefore, these two categories were joined to form the theme *Enhancing the Sense of Agency*, which is a crucial part in the teachers' experiences of using technology.

However, using technology is not always a positive experience. The teachers are facing challenges while using it that made them express feelings of frustration. The initial codes *Teacher Work Overload*, *Training Problems*, *Lack of Appreciation*, *Inaccessible Resources* and *Ministry of Education Policies* are codes representing the problems that the teachers face but have become more significant with the use of technology. They became more aware after using technology that they are overloaded with extra duties that are not part of their teaching duties. They became more aware of the lack of resources either because it is not available or they can't access it. After using technology and making so much effort to use it, they also became more aware of a lack of appreciation. These codes appeared in focus group data since the teachers joined voices to discuss these challenges and slowly opened up to share them. These codes were joined together in a category *Challenges as Teachers*.

The codes *Language Barrier* and *Power Struggle* represent social challenges that the teachers face using technology in Saudi society. Teachers became more aware of their language barrier due to the fact that most technology resources and facilities are in English. The code *Power Struggle* represents the ways technology made teachers come in contact with a power struggle under which they have always lived. The power struggle regarding the Ministry appeared in focus group data, but the struggles they faced at a personal level appeared in interview data. These codes were joined together in the category *Challenges as Learners and Females*.

The categories *Challenges as Teachers* and *Challenges as Learners and Females* were joined together to form a theme *Becoming More Aware of Reality (Frustration)*. The two themes *Enhancing the Sense of Agency* and *Becoming More Aware of Reality* represent the ways technology gave Saudi female teachers more control of their own situation, which in turn enhanced their agency, but also show the ways technology made the teachers more aware of challenges they face: placing financial, physical and emotional stress, and positioning teachers in direct conflict with other parties in society. The teachers gave examples of incidents in which technology use liberated them and in some other cases made them realise challenges in the reality they are living. Chapter 8, which responds to research question 3, discusses these themes in detail.

Chapter 9 concludes the three findings and analysis chapters. It is divided according to the main contributions of the study: Saudi female teachers are active contributors in the process of using technology, teachers shaping technology, enhancing the sense of agency, and teachers' awareness of challenges and realities. The chapter then presents possible direction for future research and a brief summary of the study.

#### **4.4 Conclusion**

This chapter presents the study position, my own position as the researcher, and the studies that I was inspired by during the process of conducting the study. It also presents the study participants, the ways I approached them, the data collection methods used and data processing, and the rationale behind my choices. The chapter also presents detailed steps of the analysis procedure, in addition highlighting some points regarding conducting multilingual research.

In the following chapters, I move to answering the research questions by presenting the analysis and discussion for each research question.

## **Chapter 5: Introducing the Analysis**

In previous chapters, I reviewed some of the literature highlighting the context from which the study participants come, mainly the history of education for Saudi women and the position of women in the country. I then concentrated on studies that discuss technology integration with education within the Saudi context, in addition to its application in Saudi schools. Then, in the methodology chapter, I described concepts and studies that influenced my thinking and the way I approached the data, the study design, methods used and the process of handling the data. I demonstrated the steps of transcribing, coding, finding common themes and dealing with different ways of conducting multilingual research.

This chapter is an introduction to the next part of the study, which includes answering the research questions and presenting a final conclusion. Hence, this chapter includes an introduction to the participants, the context - including challenges the teachers faced in this context from their own perspectives - and finally, an overview of how the remaining chapters are structured.

### **5.1 Introducing the Participants**

The main aim of this study is to present an in-depth view of the reality teachers are living using technology from their own perspectives and experiences. Three public primary schools were involved in the study. In each school, one focus group session was conducted that included six to seven teachers. In addition, I conducted four interviews with teachers (Fadwa, Haneen, Kinda and Sohila) who were actively teaching different subjects. All interviewed teachers were married with children. They taught in different schools, with the exception of Kinda and Sohila, who were employed in the same school.

Three of the teachers interviewed shared similar circumstances. Fadwa, Haneen and Sohila had been teaching for more than 20 years. They grew up in small towns where, at that time, bachelor degrees were not available to girls, except in large universities located in the main cities, such as Jeddah and Riyadh. Their only option was to enrol on a two-year teaching diploma.

Fadwa taught Islamic studies to higher classes in primary school, year six. She gained her bachelor degree in Islamic Studies after 20 years of teaching, when Imam Muhammad Ibn Saud Islamic University began offering online courses. She graduated with a first-class honours degree.

Fadwa recalled:

University study was always in my mind, I wanted to study; I wanted to develop myself. I have the will, the ambition and I was looking forward to it (I; Dal; Fadwa)

*الدراسة الجامعية كانت دائما في نفسي و حابه أدرس, حابه أطور نفسي, عندي طموح و تتطلع*

Sohila had taught Islamic studies to year six for 20 years. She managed to earn her bachelor degree from King Abdul Aziz University, while working as a full-time teacher, through the Entisab<sup>14</sup> programme.

Haneen used to teach Arabic to year six, but then obtained a new position that is a resources teacher in the same school. She started her bachelor degree after 18 years as a teacher, and at the time of the research, she was in her final year of the Entisab bachelor programme at King AbdulAziz University in Jeddah.

In contrast, the fourth participant, Kinda, who was younger than the other three teachers, had been teaching English for 10 years. She finished high school and went immediately on to a bachelor degree at King AbdulAziz University. After graduation, she secured a job as an English teacher in a public school. Kinda was different from the other three teachers in that she was a ‘supply teacher’<sup>15</sup>. In other words, she worked in three different schools during the week. Kinda is happy with her career teaching English. However, she would like more resources and to be in a more stable role in one school, rather than moving between institutions.

Sohila, Haneen and Fadwa did not seem very content in their jobs, and felt that they could contribute more to the educational process and to society. They wanted more challenges and seemed to possess skills and energy that were not fully utilised. Sohila stated that she was very good at administrative work and that she could be an excellent head teacher. Fadwa stated that she is really good at thinking of new developments and believed she was destined to work with the Development Team in the Ministry. Haneen enjoyed working with children

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<sup>14</sup> Entisab: That is when a student is enrolled in the university as an external student, but is not required to attend any lectures. However, at the end of the semester, they are examined alongside other full-time students. This option is good if the student cannot attend lectures, either because she is working or living in another city.

<sup>15</sup> A ‘supply teacher’ in Saudi schools is contracted to more than one school at the same time. This type of contract is used when the teacher takes subjects that are taught only once a week.



with special educational needs, had always enjoyed psychology, and would love to work with children with learning difficulties.

Regarding technology, the teachers said that they began using computers when they became available to buy commercially. Initially, they all had desktops before moving on to laptops. Fadwa and Haneen stated that they learned through trial and error. They said it was very hard in the beginning, particularly as all commands and instructions were in English. They learned the main competencies by taking ICDL <sup>16</sup> training or training provided by the Ministry. They mentioned many ways of learning, but most often relied on personal efforts, using the Internet to learn either from forums or YouTube videos (this will be discussed in more detail in Chapter 7).

Regarding their careers as teachers, each interviewee said that embarking on this profession was both a way of resisting and adapting to their social positions. They pointed out that they did not originally choose to become teachers; it was their circumstances that pulled them towards this career choice. Like Fadwa, Haneen and Sohila, found themselves teaching because the two-year teaching diploma was their only educational option. Although their head teachers considered them creative and very hard-working candidates, they did not always want to be teachers. Indeed, they had hoped to become something else. When I asked them, ‘what do you hope for?’ the following responses from Sohila, Haneen and Fadwa were revealed in this regard:

Sohila: I want to do bigger things than being a teacher or a head teacher. For me, I like administrative work more than teaching, when the head teacher gives me administrative tasks, I feel I can be more creative, I search more and try my best to prove to myself than just being a teacher. (I; Baa; Sohila)

*اريد أن أكون أكبر من معلمه أو مديرة. بالنسبة لي أحب العمل الإداري أكثر من التدريس. لما المديرية تطلب مني شغل إداري احس اني استطيع أن أبدع، أبحث أكثر و أحاول أقصى جهدي لأثبت لنفسي اني أستطيع أن أقوم بأعمال أخرى*

Haneen: I always wanted to study psychology, to be a psychologist. I took training on learning difficulties and I felt I hoped I can reverse time so I can learn about learning difficulties and become a specialist in this (I; Alef; Haneen)

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<sup>16</sup> ICDL stands for International Computer Driving License. It contains different modules representing a range of different computer skills, ranging from basic IT concepts and terms, to organising files to word-processing skills, spreadsheet, presentation, using databases and online essentials.  
[http://www.icdlsaudi.org/icdlsaudi\\_en.nsf/link/Home.html](http://www.icdlsaudi.org/icdlsaudi_en.nsf/link/Home.html)

كنت أتمنى اني ادرس و أطلع أخصائية نفسية، أخذت دورة في صعوبات التعلم وتمنيت الزمن يرجع لكي  
أدرس صعوبات التعلم و أصبح متخصصه في هذا المجال

Fadwa: If I move from teaching, I don't want to be a supervisor, I want to work in a development department, to be one of those people who are effective in the development of education in Saudi. I have ideas that can benefit education (I; Dal; Fadwa)

أريد أن أخرج من التعليم ليس لأكون موجهه و لكن نفسي أصبح في مجال التطوير .. نفسي أكون من الناس  
الفاعلين في تطوير العملية التعليمية .. عندي أفكار ممكن تفيد العملية التعليمية

Kinda's reply was different. She did not say that she wished to leave teaching. Rather, what she hoped for was a language room in the school where she could place all the resources required to teach English as a second language.

During the focus groups, some teachers suggested that they entered the profession because their families refused to let them work in mixed-gender environments. This supports Mobaraki and Söderfeldt's (2010) argument that, in some cases in Saudi, it is socially unacceptable for women to work in fields other than teaching, since most families do not allow their wives or daughters to work in a mixed-gender environment. Sara in Baa school stated:

When I finished high school I had excellent marks; I wanted to study medicine. My dad didn't allow it because he is against mixed-gender environments. Therefore, I studied biology instead, and now I am working in a girls' school. But I wish I had accomplished my dream. (FG; Baa)

لما خلصت سنوية عامة كان مجموعي جدا عالي، كان نفسي ادرس طب. بس الوالد كان رافض الفكرة بسبب  
الاختلاط . فدرست احياء و الان انا معلمة علوم في مدرسة بنات بس الى الان أتمنى كنت احقق حلمي

Hence, they regarded teaching as the convenient career option and, as stated, a better option than staying at home. Some viewed their home as a place where they had no opportunity for development and no financial independence. Kholud from Alef school confirmed this when she said:

I never wanted to be a teacher and I still don't want to be a teacher. I found myself in the education field because it is better than staying at home, but there is no other field that I can work in. (FG; Alef)

انا لم أريد أن اكون معلمة و الى الان أنا لا أريد أن اكون معلمة، لقيت نفسي في مجال التعليم لأن أحسن من  
الجلسة في البيت، لأن لا يوجد مجال اخر أقدر أشتغل فيه

Some teachers talked about becoming teachers as a result of their responsibilities as wives and mothers. They preferred to work in schools because it involved fewer working hours than other full-time jobs. In three focus group sessions, three teachers described teaching as better than staying at home, but not as their preferred option. This resonates with the statistics that 85 percent of Saudi women in the labour force work in the education sector, in both teaching and administrative positions (Al Munajjed, 2010).

In the following section, I present aspects of the three schools in which the participants worked that highlights the context of the teachers.

## **5.2 Introducing the Context**

This section focuses on experiences that the teachers shared in both interviews and focus groups. The experiences relate to their positions as teachers in public schools in Saudi Arabia, in addition to their position as women in this context. These experiences are not related directly to technology use, but teachers chose to share them when asked to identify challenges they were facing when using technology. This demonstrates that these broader experiences have an impact on teachers' use of technology, inside and outside their classrooms.

The reason I discuss these experiences before answering the research questions is to set the scene for the teachers' social context, which will help the reader to understand the teachers' experiences with technology in the schools and in Saudi society. It is worth mentioning that these experiences are based on the teachers' own perceptions as shared experiences in both interviews and focus group sessions.

The teachers discussed experiences pertaining to their positions as teachers working in the public school sector under the authority of the Ministry of Education. Although all schools in Saudi are governed by the Ministry of Education, private and international schools have some freedom regarding extracurricular subjects and activities. Moreover, they have their own budgets, depending on tuition fees. However, public schools fall totally under the Ministry of Education; their budgets, resources, teachers, and even cleaners are all funded by the Ministry.

### 5.2.1 Teacher Overload

The participants talked about factors that overload them both as teachers and women in this context. One factor that put pressure on the teachers was the lack of technological resources and the insufficient infrastructure in their schools. This challenge was almost identical in all the schools participating in this study, which placed financial, physical and many other pressures on the teachers when they wish to use technology. This challenge will be further discussed in section 7.3 since it has a direct connection with the use of technology.

Another factor that teachers viewed as overwhelming was the many responsibilities and duties imposed on them by the Ministry: for example, participating and preparing for morning assemblies, non-curriculum activities, paperwork, such as working on the preparation book<sup>17</sup>, photocopying worksheet assessments, or the continuous follow-up from their supervisors that usually involved a great deal of paperwork. They viewed these duties as having a negative impact on the level of teaching and being of little benefit to the students. They regarded them as a waste of time and effort, and cited them as the reason why many teachers wanted to leave the profession.

Table 8 shows examples of statements written on Ketso leaves when the teachers were asked to identify the challenges they faced while using technology. These statements were present in the data from all three schools, albeit in different written forms:

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<sup>17</sup>

Preparation book is a physical note book that teachers are asked to write their lesson plans inside. The process that each teacher need to do involves writing a plan for the lesson showing a detailed picture of what the teacher will do in the lesson. This includes the lesson content, questions asked, the learning resources used and so on. The supervisors always ask to see the preparation book for each teacher.

Table 8: Example of Ketso statements related to teachers being overloaded

Translated leaf	Original Arabic leaf	School name
Large number of non-curriculum projects	كثرة المشاريع	Alef
Overload at work	الاثقال في العمل	Alef
Large amount of work that teachers are assigned to	كثرة الاعمال المكلفة بها المعلمة	Baa
The increase in the number of students in classrooms	زيادة عدد الطالبات في الفصول	Dal
I want to be creative but the overload on the teacher is holding me back	اريد أن أكون مبدعه و لكن الضغط على المعلمة	Dal

During my interview with her, Haneen stated:

Teachers are overwhelmed with Ministry demands and paper work that does not have any no effect on success. Anything a teacher does with her student, she needs to prove in detail on paper. That puts teachers off and makes them unwilling to do anything new. They overload teachers with demands; they take the teachers' attention from the main things that really affect students to subordinate things that don't have any direct benefit to students. When you tell teachers to subscribe to this website to learn something new, they reply, 'we don't want to - we already have what we need to finish (I; Alef; Haneen)

المعلمات مثقلات بالطلبات الوزارية و المخرجات الورقية الذي ليس لها أساس في النجاح. أي شيء المعلمة تقوم به يجب تقديم أوراق للإثبات فيثقلون على المعلمة بالطلبات فتتجنب أن تقوم بأي شيء عشان كده المعلمات ما صار عندهم رغبة . يشتتوا انتباه المعلمة خلوهم يهتموا بالفرعي و يتركوا الاساسي. اذا قلت للمعلمات ادخلوا الموقع الفلاني و سجلوا يقولوا "يا شيخه خلاص ما فينا ، يالا نخلص إلي علينا"

Kinda added that the large number of students in the class places pressure on the teacher. She compared her experience of teaching in a village with a small number of students and fewer non-curriculum demands with her current experience of teaching in a big city with a large number of students in one class. She explained that in the village she had time to concentrate

on her students, but when she moved to Jeddah the huge number of students, in addition to non-curriculum activities, distracted her focus.

Haneen suggested that the pressure and the overload of the teachers experience in their daily routines have led many teachers to abandon the profession.

Look at the amount of retired teachers last year; it is more than 7000 teachers. Why they chose to retire was because of all the pressure placed on the teacher. If they gave us a bit more freedom or, let's say, flexibility, this pressure will be reduced. The Ministry needs to break the routine; since I was a student we had the same routine. Only small things need to be changed that will reduce pressure (I; Alef; Haneen)

شوفي كمية المعلمات الي يطلبوا تقاعد فقط السنه الي فاتت، أكثر من 7000 معلمة لماذا برأيك المعلمات يختاروا يتقاعدوا؟! عشان الضغط الي على المعلمة. اذا يعطونا شوية حرية أو مرونة هذا الضغط سيقفل. الوزارة محتاجه كسر الروتين، من لما كنت صغيرة في المدرسة هو نفس الروتين لم يتغير. أشياء جدا بسيطة تتغير و الضغط على المعلمة سيقفل

Raja in Alef school said that she cannot wait to retire because of the load placed on the teachers, although she is happy teaching. In this regard, she explained:

Look at me, I want to retire now. All the pressure placed on the teacher from photocopying to lack of technology resources to the pressure from non-curriculum projects after teaching 18 lessons, plus I have four other files I need to fill other than my usual class preparation files. Instead of concentrating on my students and myself, they overloaded us with these things that made us want to take early retirement. (FG; Alef)

شوفيني الان أريد أن أطلع تقاعد بأي شكل بسبب الضغوط الي نواجهها مثل التصوير، و التقنية لازم تكون متوفرة دائما و ضغوط ثانية مثل مشاريع لامنهجية و هذا كله بعد تدريس 18 حصه و ليه؟! عندي 4 ملفات اعبها غير ملفات دروسي. هذا كله تضيق وقت بدل ما أتابع طالباتي و نفسي هذا خلاني أريد أن اتقاعد

To overcome this problem, Haneen has suggested employing someone in the school to be responsible for all paperwork. This would remove the most exhausting part of the teachers' jobs, thereby leaving them free to be creative and affording them the space to use technology more in their practice.

Nouf from Dal school suggested that the pressure means teachers are unable to improve student attainment or to use new practices that include technology. Reflecting on this, Sara commented:

Yes, there is no concentration on students and their needs because of all the Ministry requests from the teacher. (FG; Dal)

بسبب طلبات الوزارة ، المعلمة غير قادره على التركيز على طالباتها و احتياجاتهم

In Alef, Dal and Baa schools, the teachers mentioned that their continuous assessment by their supervisors placed them under psychological stress. The feeling that they needed to prove in written form everything they do with their students, and being questioned regularly by their supervisors placed pressure on them and made them reluctant to take the time to integrate technology into their teaching.

The teachers added that the increased number of lessons per day placed pressure on them, alongside the amount of different curricula they had to teach due to the lack of teachers. Haneen explained:

We are overloaded; we have a subject that we had to distribute amongst teachers because there is no teacher to carry it out. The Ministry does not supply enough teachers to carry all subjects, so the school administration distributes them between teachers, which puts pressure on and overloads teachers. (I, Alef; Haneen)

المعلمات مضغوطين من عدد الحصص، في مادة لا يوجد لدينا معلمة تدرسها فقررت المدرسة أن توزع على المعلمات . الوزارة ليست قادره على توفير معلمات مما أضاف ضغط كبير على المعلمة

Furthermore, the teachers noted that they were not only overloaded in school, but also in their homes. They all had other responsibilities as wives and mothers, and the fact that they need to work at home as well placed them under additional pressure. The teachers in Dal school mentioned that because there was no internet available in the school, they needed to carry out all their work at home. In Alef school, Raja said that most teachers can't attend training after school hours because of their responsibilities at home:

I swear it is very hard for us to attend training in the evening. We all can't attend, because we have our children at home. (FG; Alef)

و الله مره صعبه ما في أحد بيروح الدورة في المساء .. كلنا عندنا أولادنا في البيت

This shows that the teachers were overloaded with tasks and duties inside and outside their schools that had a negative effect on their use of technology and their willingness to develop and to try new practices. This is further discussed in Chapter 9.

### 5.2.2 Lack of Appreciation

The teachers were not only overwhelmed by the factors mentioned in the previous section, they stated that with all the extra work they did and the responsibilities that they took on top of their teaching, they were not being appreciated. That is, the teachers discussed a lack of appreciation when they were asked to note the challenges and difficulties they faced. The following Ketso statements illustrate this.

Table 9: Example of Ketso statements regarding lack of appreciation

Translated leaf	Original Arabic leaf	School Name
Not appreciating the teacher	عدم التقدير للمعلم	Dal
Lack of working environment that appreciates development	عدم وجود بيئة مقيدة للتطور	Dal
Lack of encouragements for teacher creativity in using technology	عدم وجود الحوافز لابداع المعلم لاستخدام التقنية	Baa

More particularly, in Alef school, the teachers engaged in the following discussion:

Samia: I wrote ‘not appreciating the teacher’.

Raja: The one who can see us and know the effort we are making is God, and you and your students. The supervisor writes a report once or twice on the teacher that has no effect on a salary or any prize.

Hanan: In my case, only the first semester, I paid not less than 5000 riyals for the school. I want to do this and I want to develop myself, but this is between me and God. No one ever appreciated the fact that I am using my own laptop for the school while others don’t, or I am providing new equipment and trying to be creative in my subject, not at all. There is no one to see your improvement except the supervisor who comes once or twice a year.



- Mariam: Even if the supervisor liked what I am doing, what happens!? Nothing.
- Raja: The supervisor reports 'they can have it' ['they' refers to the Ministry and 'can have it' indicates that they don't want it], it does not increase the salary, or decrease the number of working hours and does not get a prize.
- Mariam: That means any encouragement from the supervisor or from the head teacher does not change anything for the teacher.
- Hanan: The job hierarchy and grade is only according to the years of teaching. If the teacher is creative, this does not change anything in her career ladder (progress). (FG; Alef)

سامية : عدم تقدير المعلمة

رجا: بس الي شايف و عارف هو الله سبحانه و تعالى و انت و طالباتك ، الموجهة تأتي مره و لا مرتين تكتب التقرير, لا يزيد راتب و لا مكافأة

حنان: أنا في الترم الواحد أدفع مالا يقل عن 5000 ريال للعلم. انا حابه هذا الشي و حابه أطور نفسي و لكن هذا بييني و بين الله سبحانه و تعالى . ما عمره أحد قال انت جيتي جهازك و غيرك لا ، انت جايبة أشياء جديدة و بتحاولي تبدعي في مادتك .. أبدا لا يوجد من يرى تطورك الا الموجهة مره أو مرتين في السنه

غادة: حتى اذا عجبها الموجهة ايش صار

رجا : تقرير الموجهة خليه عندهم و لا يزيد راتب و لا ينقص من ساعات العمل و لا يجيب مكافأة

غادة: يعني التعزيز الذي يأتي من الموجهة أو المديرية لا يعني شيء في المقابل بالنسبة للمعلمة

سارة: لا يوجد تسلسل وظيفي يوجد فقط مراتب حسب سنوات العمل . و لكن اذا كانت المعلمة مبدعة لا يغير شيء في تسلسلها الوظيفي

The discussion reveals that in the educational system, whether or not a teacher is outstanding has no effect on her salary, certificates, prizes or job grades. The only thing that counts is the length of experience.

During my interview with her, Sohila also expressed her frustration about the Ministry's policy regarding job grades. She wanted to have a bigger impact on the educational system. However, the Ministry's rules of allocating job grades according to years of experience, and not according to the quality of teaching or willingness to work hard, meant those who had been teaching for longer were more eligible for higher positions and grades:

I really wish that the Ministry would implement new rules that enable experienced teachers to jump positions and save time either by testing them, or asking them to submit a research project or taking specific courses that entitle teachers to become an assistant head, then a head teacher, without going through all the routine procedures. What is happening is that you submit an application to apply for the position; then you need to sit and wait until you reach 20 or 25 years of experience in teaching to be eligible to apply. For me I went to apply with one of my colleagues, and they told us that anyone who got employed earlier will be more eligible for the job. (I; Sohila)

أتمنى الوزارة تجدد قوانينها مثلاً يعتمدوا خبرة المعلمة لتوفير الوقت فأما يختبرونا أو يطلبوا بحث أو ورشة عمل عشان أقدر أكون مساعدة مديرة و بعدها مديرة مو الطريقة الروتينية انه لازم تدرسي 20 أو 25 سنة عشان تقدري تقدمي . بالعكس الدماء الجديدة و الحديثة هي الي تمسك – القوانين بيغالها اعادة نظر ، انا و زميلتي قدما نكون مساعدة مديرة قالوا لنا الي مقدمين و هم أقدم في التدريس لهم الأولوية ، الي ما كملت 20 سنة تدريس ما تقدر أصلاً تقدم على عمل اداري. طيب الي صار لها 25 و 30 سنة ايش هتمسك هتكون خلاص تبغها تتقاعد بس الي صار لها 15 و 20 سنة تقدر تبدا.

In the focus group sessions, the teachers also talked about other challenges they faced from the Ministry of Education policies. The Ketso statements in table 10 illustrate such other challenges.

Table 10: Example of Ketso statements regarding struggles with the Ministry

Translated leaf	Original Arabic leaf	School Name
No teacher union	عدم وجود اتحاد معلمين ( عدم وجود صوت للمعلمة )	Baa
The feeling of frustration	الاحساس بالإحباط	Dal
Policies that does not make sense	قرارات تصفية غير منطقية مثل ممنوع التصوير	Baa
Change of supervisors	تغيير الموجهات	Alef
Aggressiveness in policies	عنف في التعاميم خاصة اجازة المنتسبات	Alef

During the interview, Haneen gave an example of an experience that demonstrated how policies that are for the benefit of teachers and students are not implemented. This also created a feeling of frustration between teachers. She cited an example of a computer lab that

was fully equipped and ready for students to use in her school six years ago, but was never used because the Ministry did not hire a computer teacher. For six years, the lab was closed since Ministry policy stated that it should only be used by a computer teacher. Eventually, as Haneen explained, the 30 computers in the lab stopped working because they were not maintained. Haneen asserted that the school asked the Ministry on numerous occasions to activate the lab, but no one responded. Finally, the new head teacher, described by Haneen as a decision-maker, took responsibility for the lab computers and distributed them between school offices, classrooms and the resources room (usually there is only one resource room in each school) for use by the teachers and students.

### 5.2.3 Training Problems

One of the experiences highlighted by the teachers was training. They stated that the Ministry of Education offered training courses to teachers in special training centres. They gave examples of training courses they had taken in these centres, and from which they benefited. They also mentioned problems they were facing with training and proposed solutions using the grey and green leaves in the Ketso sessions.

Table 11: Example of Ketso statements regarding training

Translated leaf	Original Arabic leaf	School Name
Not taking advantage of good times for training	عدم استغلال الوقت المناسب للدورات	Dal
Lack of qualified trainers	عدم توفر مدربة مؤهلة للتدريب على التقنية	Dal
Courses always or often more theoretical than practical and far from classroom reality	دائما او غالبا ما تكون الدورات نظرية أكثر منها عملية و بعيدة عن أرض الواقع	Alef
Unsuitable time for training courses	التوقيت غير مناسب للدورات	Alef
Not enough time for technology training	قصر وقت الدورات التدريبية عن التقنية	Alef
Oversubscribed trainee	تكدر المتدربات	Alef

One of the problems faced by the teachers regarding training was the process of choosing teachers to attend the training sessions. Haneen mentioned that the method used for choosing teachers to attend training was either supervisor recommendation or random name-picking. Although the Ministry had created a website where teachers could select the training they want to attend, the head teacher and the supervisor had first to agree. In some cases, when no agreement was reached, the teacher could not attend the training, as was the case for Haneen.

Moreover, the teachers experienced problems with the training: for example, the huge numbers of teachers attending each course, unqualified trainers, training that was more theoretical than practical, and that had no effect on their technological competence. In fact, in some cases they had to miss their lessons to attend training, which was detrimental to the students.

The teachers also declared their frustration at being unable to take advantage of the weeks at the beginning and the end of each semester, while students were still on their holidays. Sohila said:

In days like these where students finished their exams and we teachers need to continue going to school. We have a lot of free time, so why not provide a trainer to give teachers what they need to know and learn? (I; Baa; Sohila)

*في أيام مثل هذه لما ما يكون في طالبات في المدرسة بعد الاختبارات ، المعلمات عندهم وقت ، لماذا لا  
يوفرنا مدربة لتدريب المعلمات للمهارات التي يحتاجوا أن يتعلموها و يتقنوها*

Similar points regarding training were raised in all three schools. This discussion took place in Baa school:

Lamia: Like the training, you find yourself going to the training without benefiting from it, they don't know how to deliver the information.

Ghada: Maybe the trainer is not qualified enough to give the training.

Solafa: One time I went to the training and didn't benefit from it because the trainer didn't know how to deliver the information to us, it was a waste of time.

Ghada: Also the huge number of teachers in one training.

Sara: Also the time of the training is not suitable, we have our classes and curriculum to finish, when you take me out to do training in the school time, it is very bad timing.

Researcher: What do you think can be done?

- Ghada: There are times we don't have anything to do.
- Hanan: To take advantage of these days when there are no students, we don't have a lot of things to do. As we said it needs better planning.
- Ghada: Yes, the solution is good planning.
- Hanan: They also repeat the same training, we already know it, we don't want to take it again, we want something new, more practical
- Lamia: Yes, the training is very repetitive. (FG; Baa)

لمياء: مثلاً التدريب تلاقي نفسك رايحه التدريب و ما استفدتى ، ما يعرفوا يوصلوا المعلومة  
 عادة: يمكن المدرب غير مؤهل كفاية لإعطاء التدريب  
 سلافة: في يوم رحت للتدريب و ما استفدت منه لأن المدربة ما عرفت توصل المعلومة ، كان تضییع وقت  
 عادة: مرات يكون بسبب الاعداد الهائلة من المعلمات في التدريب  
 سارة: أيضاً مرات وقت التدريب يكون غير مناسب، إحنا عندنا حصصنا و مناهجنا الي لازم نخلصها فلما  
 تأخذيني للتدريب في وقت المدرسة فهذا توقيت جدا سيء  
 الباحثة: متى وقت مناسب  
 عادة: في عندنا أوقات ما عندنا شيء نسويه  
 حنان: لازم نستغل مثل هذه الأيام لما ما يكون في طالبات و ما عندنا أشياء كثيرة نسويها. زي ما قلنا يجب  
 تخطيط أحسن للتدريب  
 عادة: أيوه الحل هو التخطيط الجيد  
 حنان: كمان يوجد تكرار في الدورات، احنا عارفين كل هذا الكلام لا نريد نكرر. نريد شيء جديد ، شيء  
 تطبيقي  
 لمياء: أيوه التدريب جدا مكرر

This suggests that the teachers were eager to develop and attend training, and the problems they faced could be solved with better planning and more qualified trainers. In Chapter 9, I address how the use of technology helped the teachers overcome some of the challenges associated with training.

The teachers felt positive about online training since they could attend such training in their own time without leaving their classes. In Baa school, the teachers came up with a suggestion for a mobile trainer. In other words, instead of the teachers leaving their school to go to the training, the trainer could come to them in the school; thus, saving time and effort.

- Sara: I suggest that the Ministry send a trainer to each school instead of us going to the training centre. For example, the trainer comes to the school and she trains the 45 teachers at once, instead of the 45 teachers going out of school throughout the year to take the training. This will

save time and a lot of effort and will reduce the traffic at the training centres.

Lamia: Yes, I agree, and the training could be suitable to different disciplines.

Sara: There would be a mobile trainer.

Solafa: And this will reduce all the transportation problems as well. (FG; Baa)

سارة: أقترح أن الوزارة تبعت مدربة للمدارس بدل من المعلمات يذهبوا لمراكز التدريب. مثلا المدربة تأتي للمدرسة و تقوم بتدريب 45 معلمة في نفس الوقت بدل من أن 45 معلمة يذهبوا لمراكز التدريب على مدار السنة. كده هيفروا وقت و جهد و يقلل الزحمة على مراكز التدريب  
لمياء: أيوه أنا أوافق و التدريب يكون مناسب لجميع التخصصات  
سارة: زي المدرب المتنقل  
سلافة: و أيضا هيقفل مشاكل المواصلات

Here, I need to comment on the word ‘training’. This is a translation of the Arabic word (تدريب). I am aware that there are terminologies in teacher education literature that are used interchangeably as mentioned by Freeman (1989). Freeman (1989) suggests that teacher training and teacher development are both used to ‘describe the strategies by which teachers are educated’ (p. 37). On the other hand, he proposed distinctive differences between the two terms. In this study, I used the two terms consciously, referring to Freeman’s (1989) definitions. Training is a strategy that is clear and direct, that focuses on specific outcomes that can be achieved by following steps which the trainer or the ‘collaborator’ follows. The trainer usually takes the lead, and it is based on the assumption that through improving teachers’ knowledge and skills, teachers will improve their classroom practices. Development, on the other hand, is more complex and less concrete than training. It focuses on increasing and shifting teachers’ awareness, to recognise ones’ own needs and weaknesses. It depends on the individual teacher, and the interaction between the teacher and the collaborator (that can be a trainer, supervisor, colleague or anyone from whom the teacher learns), where the collaborator asks questions to trigger teacher awareness, shares teaching experiences and monitors teachers to help them in the process of reflection, critique and refinement (Freeman, 1989).

#### 5.2.4 Power Struggles

The teachers shared experiences that reveal power struggles between them and other people in their context: for example, the relationship between teachers and their supervisors. Each teacher in the Saudi educational system has a supervisor responsible for monitoring their

skills, observing their teaching and checking that they submit all the required paperwork. Moreover, supervisors arrange and provide training in the training centres.

The relationships between the teachers and their supervisors were diverse. Some explained that their supervisors are supportive and encourage them to learn and develop, while others, mainly in focus groups, explained that they struggle with their supervisors because they are not collaborative and sometimes want them to teach in a certain way. In Dal school, the teachers provided the following responses when I asked them to use green leaves to identify solutions:

Researcher: Can you use the green leaves to think of solutions?

Solafa: Freedom for the teacher.

Researcher: Freedom in what?

Aziza: In dealing with our students and choosing the way we teach our curriculum.

Sara: The problem is that I collaborate with my supervisor in a specific way in teaching, but when they change the supervisor to a new one, the new supervisor has a complete different way and she wants me to use her own way. Every supervisor wants her teachers to follow her own way.

Solafa: For example, I go to a training session about teaching strategies, and after I start implementing these strategies in collaboration with my supervisor, a new supervisor arrives, and tells me 'no, change this way'. So, why should I go to a training session, if I will not use the things I learn. (FG; Dal)

الباحثة: ما هي الحلول في رأيكم .. استخدموا الاوراق الخضراء

غادة : الحرية للمعلمة

الباحثة: الحرية في ماذا

حنان: في التعامل مع الطالبات ، اختيار الطريقة التي ندرس بها

سارة: المشكلة اني اكون متعاونة مع موجهتي بالنسبة لطريقة التدريس و لكن عندما تتغير الموجهة تيجيني وحدة لها طريقة مختلفة تماما و تريدني أن استخدم طريقته . كل واحدة تريد أن تمشي معلماتها بطريقته الخاصة

غادة: يعني أروح دورة على استراتيجيات معينة في التدريس و بعدها تأتي موجهة مختلفة تقول لي غيري الطريقة .. أقول طيب لماذا ذهبت للدورة اذا ما أستخدامها

During the interview, Haneen mentioned that she is struggling because of the power her supervisor has over her training. To be able to attend training in the Ministry training centres,

her supervisor must recommend her and agree for her to go. Although technology helped her to overcome this power struggle by learning from forums and social networking resources, she was still frustrated that she could not attend the training offered by the Ministry, because of her supervisor.

The relationships with supervisors varied between teachers. Hence, it seemed a question of luck as to whether or not the teacher will be supervised by a woman who is open-minded and gives the teacher freedom to do what she thinks is right, as was the case with Sohila's supervisor, or one who controls the teacher and creates obstacles that prevents her from receiving training, as in the case of Haneen. This shows that there is no policy implemented on the ground to standardise the rights of teachers and their relationships with their supervisors.

### 5.2.5 Transportation Problems

Another challenge discussed by the female teachers was transportation: specifically, their reliance on male figures to transport them from place to place, including attending training events. This dynamic has been observed by Al Lily (2011), Al Munajjed (2010) and Prokop (2003). That is, one of the main challenges Saudi women are facing is their inability to enjoy freedom of movement. Although Saudi women rely completely on cars for transportation, they are not permitted to drive a car, a motorcycle or a bicycle. Moreover, it is not culturally acceptable for women to walk on the streets, even for short distances (Al Lily, 2011). The teachers in this study expressed that being unable to drive was an obstacle.

Kinda stated that transportation was one of the main barriers for her in terms of attending training:

Transportation is the main reason I can't attend training. Who will drop me and pick me up from the training? Regarding the price of the training, if I will benefit from it in my teaching, then I have no problem paying. I really wish in these days were there are no students, they provide a trainer to train us on things we need to learn. (I; Baa; Kinda)

المواصلات بالنسبة لي هي الأساس مين يوديني و مين يجييني. بالنسبة للأسعار أنا ما عندي مانع ادفع اذا شيء يستأهل و حاجة تتفعني في وظيفتي بالعكس ادفع و استفيد. أنا نفسي مثل هذه الايام ما في طالبات يوفروا مدربة تعطينا أساسيات و اشيء نحتاجها



When asked to offer solutions, the teachers did not suggest being allowed to drive as a solution. Instead, all their suggestions focused on technology that might help them to learn and attend training without leaving their houses. This may, of course, be a result of the focus of my research, which was known to the teachers. Even so, it does show that the teachers find in technology a way to overcome their problems.

The following section presents a brief overview of the following chapters, which address the research questions.

### **5.3 Analysis Chapters Structure**

The next three chapters (6, 7, and 8) will each address a research question. In Chapter 9, I link all the chapters together in an attempt to present a holistic view of the teachers' experiences, thereby demonstrating the main contributions of the study. The data abstracts in all chapters are presented in both the original Arabic language and translated into English.

The chapters are structured according to the understandings developed in response to each research question. By following the order of the chapters, the reader will gradually come to see the bigger picture, revealing the development of these teachers using technology and how this affected their experiences.

Chapter 6 addresses the first research question: *How do Saudi female teachers influence their own use of technology in their practice?* It presents the actions that the teachers take that enable their use of technology, including the factors that contributed to these actions. Answering this question shows that the teachers have an active role in the process of using technology, which is linked to their agency and positioning in the context in which they are living. Chapter 7 addresses the second research question: *How does the use of technology enable Saudi female teachers to change their professional experiences?* This chapter demonstrates how different technology affordances have an impact on the experiences of Saudi female teachers, as teachers and learners, by opening new ways of teaching, communicating and developing. It draws on the notion of technology affordances and how these affordances changed the experience of the teachers who participated in the study. Chapter 8 answers the third research question: *How does the use of technology change Saudi female teachers' views of their lived experience?* This chapter discusses the results of using technology on teachers as individuals, and the ways it influences their agency. Chapter 9

discusses holistically all three research questions to provide a conclusion and highlight the main contributions of the study.

## **Chapter 6: Ways Saudi Female Teachers Influence the Use of Technology**

This chapter presents the interpretation of data to address the first research question:

### **1. How do Saudi female teachers influence their own use of technology in their practice?**

The discussion revealed findings emanating from data collected via four semi-structured interviews conducted with Fadwa, Haneen, Kinda and Sohila, and three focus group sessions involving 18 teacher participants drawn from Alef, Baa and Dal schools (see Chapter 4 for more details of the data collection process). In order to answer the research question, I highlighted the characteristics and actions that enabled Saudi female teachers to use technology in their context (see section 4.3 for more details on the analysis steps). A detailed presentation of the themes emerging from the teachers' characteristics and actions can be found in Table 5, p. 89 section 4.3.7.

The teachers position themselves and their work in highly complex ways, ways which shape their use of technology in their practice. I use the concepts of positioning and different kinds of 'capital' as analytical lenses in order to, first, tease out these complexities and, second, understand how these positions affected the construction of the teachers' roles and actions, in terms of enabling the use of technology in their practice. By examining the actions and practices of teachers, as agents, in the process of teaching and learning using technology, it has helped reveal the positions they are offered by their society and the new positions they construct that enable them to use technology in their setting.

I first want to clarify what is meant by position and repositioning in this chapter. There are positions that are offered to teachers, being Saudi, female and working in the public sector. From this follows a set of offered and afforded positions. Holland and Leander (2004) called them social positions, referring to social theory to describe social position as "a person or group is 'offered' or 'afforded' a social position when a powerful body, such as a government agency proposes a particular sort of subject ...and calls on an individual to occupy the position. Faced with such an offer, the person may either accept the position in whole or part, or try to refuse it" (Holland & Leander, 2004, p. 127). Therefore, each individual perceives a set of social positions offered by powerful forces around her or him.

More generally, Martin and Van Gunter (2002) draw on authors such as Maher and Tetreault (1993) and Haraway (1988) to identify positionality as "a concept that acknowledges that we

are all raced, classed, and gendered and that these identities are relational, complex, and fluid positions rather than essential qualities” (p. 46). They add that teachers are positioned by their gender, race, age, ethnicity, sexual identity, physical ability and social class, and that these different positions often reflected in their practice. Martin and Van Gunter state that to be able to understand ways teachers create equitable and culturally representative pedagogical strategies and practices, we must comprehend the construction of knowledge based on multiple positions that teachers take in a given situation. Maher and Tetreault (1994) noted that teachers “fashion themselves in terms of their awareness of others in their particular classrooms and institutions and in terms of their individual and group relationships to the dominant culture” (p. 165). On top of all the multiple social and biographical positions and complexities that individuals inhabit, each individual has her/his own subjectivity, that is the “actor’s thoughts, sentiments, and embodied sensibilities, and, especially, their sense of self and self-world relations” (Holland & Leander, 2004, p. 127). These subjectivities, alongside experiences of being positioned in a certain setting, contribute to the creation of new experiences that both accept previous positions and help maintain or work against them. In this chapter, I understand this process of positioning ‘as an act of agency’, and I build on these concepts to highlight the social positions that these teachers inhabit and ways they create new positions as an act of agency, thereby enabling the use of technology.

The data suggested that they enabled technology use by:

- Resisting their social positions and showing determination to create new positions
- Taking responsibility
- Improvising solutions and ways of using available resources in their practice.

This chapter is divided into five parts, with four sections each addressing different themes: 1) teachers’ different capitals, which presents the teachers’ capitals that helped them construct new positions; 2) resistance and determination, which presents the ways the teachers resisted social positions and showed determination to create new positions; 3) taking responsibility, which presents the different ways the teachers take responsibility and how these responsibilities enabled them to use technology; and 4) improvising solutions, which highlights ways that the teachers localised technology to fit their needs and social context. Finally, I discuss the findings generated from these four sections.

## 6.1 Teachers' Different Capital

When looking at technology use, numerous 'life circumstances' either limit or increase people's confidence and ability to use technology. These 'life circumstances', in Bourdieu's sense, form different kinds of capital (North, et al., 2008). That is, when looking at teachers' experiences, one of the main factors that enable teachers to use technology is their different types of capital. The data revealed types of capital that increased the teachers' ability to use technology in their practice by either resisting a position, taking responsibility or improvising new solutions, which had an impact on their experiences. Some of these types of capital were based on their position in the context, while others were based on the way they perceived themselves, their beliefs and their skills. In this section, I highlight teachers' capital and how, in some cases, one kind of capital seemed to be in conflict with another form of capital.

I borrow the notion of different types of capital from Bourdieu's (1985, 1992) distinction between economic, cultural and social capital. The teachers' different capital offers valuable insights into the reasons the teachers chose to take an action, and to explain their practices and choices. Economic capital refers to the teachers' income in addition to other financial resources and assets. Cultural capital takes various forms, including incorporated cultural capital such as education, academic qualifications, achievements and credentials awarded for people's efforts in education and their occupation, knowledge and skills, including also symbolic cultural capital, which consists of morals, values, standards and qualifications. Social capital is the social network that a person creates, including other actors and organisations (Anheier et al., 1995). Bourdieu also argues that:

one kind of capital may shift and change form to another kind of capital: as economic capital, which is immediately and directly convertible in to money and may be institutionalised in the form of property rights; as cultural capital, which is convertible, on certain conditions, into economic capital and may be institutionalised in the form of education qualifications; and as social capital, made up of social obligations ('connections'), which is convertible, in certain conditions, into economic capital and may be institutionalised in the form of a title of nobility (Bourdieu 1986, p. 243).

From the teachers' experiences, their economic capital appears in the form of teachers' financial independence and the technological assets that they already have. In the interviews and focus groups, I noticed that the teachers always responded, "I pay from my own money".

A teacher from Dal school, for example, said, “Yes, we do receive good salaries but most of it is spent on the school”. Raja from Alef school said, “In one term I pay between 5000 and 10000 Riyals to the school”. The use of “I” and “my” and “own” money, and looking at the number of things for which teachers needed to pay, indicates that the teachers had some agency and freedom in spending their salaries, including spending it on the school. If the teachers did not have the freedom to use their salaries as they pleased, there would not be this general practice of spending significant amounts of money to supply the school with resources (see section 7.2 for more details). Important in this respect is that Saudi women, as part of their position, are not asked to contribute to family expenses. In Saudi Arabia, the man is the main financial contributor to the family and a woman’s money is considered her own to spend as she pleases.

Another capital that contributed to the teachers’ experiences with technology is their symbolic cultural capital. In interviews and focus groups, the teachers connected their use of technology in their practice with their spiritual beliefs, that God can see what is happening, and knows they are doing their best. The relationship between their actions in taking extra responsibilities and their faith was present in the teachers’ discussions.

Haneen: I also have faith in God and that I need to do my best; since I am in this position and taking a salary I need to do my best for my students. (I; Alef, Haneen)

*انا عندي ايمان برب العالمين اني يجب أن أبذل أقصى ما عندي. بما أني في هذا المنصب و بأخذ راتب يجب أن أقدم الأفضل لطالباتي*

Fadwa: The main thing is the strength of your faith and your relationship with God, this gives me strength. (I; Dal; Fadwa)

*أهم شيء هو قوة ايماني و علاقتي مع رب العالمين، هذا يعطيني القوة*

This belief motivated the teachers to pay out of their own pockets, although they knew this was not their responsibility. I found that the teachers often reminded each other of this belief in the focus group sessions, thereby reinforcing the act of giving. Here, the teachers connected their symbolic cultural capital with their economical capital.

Another symbolic cultural capital was the teachers’ determination to achieve and develop, and the way they perceived themselves as fighters and ambitious. During the interviews, the teachers saw themselves as never giving up in the face of all the obstacles they encounter.

Haneen stated that a person will strive hard to achieve what she/he needs, irrespective of cost:

When I look at people who reach higher positions, I ask myself, how did they reach what they want? It's impossible that they had all the resources available to them but they created something from nothing. I have a dream to achieve something no one achieved before. I also have faith in God and that I need to do my best; since I am in this position and taking a salary, I need to do my best for my students. My motivation is from my religion, that I need to carry the responsibility; my strength is from my religion. (I; Alef; Haneen)

عندما اتطلع لناس وصلوا مراتب عالية أقول مستحيل تكون توفرت لهم كل الامكانيات و لكن أوجدوا من عدم.  
فكنت دائما عندي حلم اني أوصل لشيء ما في أحد وصله. أنا أخاف الله و عندي أمانة في الراتب إلي يستلمه و  
أخاف الله فيه، لازم أسوي الأفضل لطالباتي لأنني حريصة ان أؤدي الأمانة من منطلق ديني. قدوتي هو ديني قبل  
كل شيء

She also said that she liked to open doors no one had opened before, describing herself as adventurous, a risk-taker, someone who liked to do things differently, and she positioned herself as someone moving out of the norm and the usual way of doing things. She added:

I love adventure but often I get into trouble because of being adventurous; I have a dream of opening doors that no one opened before me. I am not the kind of person who stops in front of barriers and that's it, if I fail, I fail and try again. (I; Alef; Haneen)

انا احب المغامرة بس عادة اخذ على راسي , أحلم ان أفتح أبواب لم تفتح قبلي, أنا لست من النوع الذي  
يقف أمام العقبات , اذا غلطت غلطت و لكن احاول من جديد

Fadwa also had similar description of herself:

I have confidence that I can give and can accomplish special things; I have love for the work, reading, discovery, achievement and adapting things to my own practice. I love to challenge myself a lot and I have ambition. I also have curiosity for anything new. (I; Dal; Fadwa)

عندي ثقة اني أقدر أعمل شيء و عندي حب للعمل , حب للقراءة , حب للاستطلاع و للاقتباس و الانجاز ,  
عندي حب اتحدى نفسي كثير و عندي الطموح . أيضا عندي حب استطلاع لأي شيء جديد

In this regard, Sohila said that she liked to break all barriers. She hated to stay in the same place without developing, loathed routine and wanted action in her life. Fadwa used the

metaphor “I want to go beyond the school walls” to describe her eagerness to do something new and get involved in different activities. She also noted how frustrated she was when she kept doing the same things:

I wish, I wish to collaborate with researchers to present new things. I feel frustrated when I find myself trapped in a seven-lesson schedule while I have the energy and ambition to do more. To find myself trapped in seven lessons that I can't escape. Honestly, I get psychologically drained. I wish I could go beyond the school walls. (I; Baa; Sohila)

ياريت .. ياريت نتعاون مع باحثين و نقدم أشياء جديدة .. أنا أنقهر عندما أجد نفسي محصورة في جدول سبع حصص و مواد و أنا عتدي طاقة و طموح .. أجد نفسي محصورة في جدول سبع حصص لا أستطيع الخروج عنه .. صراحه أتعب نفسيًا. أتمنى أخرج خارج أسوار المدرسة

The teachers' incorporated cultural capital refers to their skills, knowledge and past experiences. They stated that technology saved them time and effort and helped their lessons become much more interactive and run more smoothly. In both Dal and Baa schools, the teachers gave examples of the development of their practices using technology, which started with presenting PowerPoint slides during the lesson but, with more experience, changed into using different learning tools and technology resources. The more aware, competent and experienced they became, the more determined they were to change, and the more their incorporated cultural capital was enhanced.

Haneen: I feel using technology in education is something enjoyable. Technology is development, and we all need to develop, I love to develop. I consider it like eating and drinking these days. (I; Alef; Haneen)

أنا أحس استخدام التقنية في العملية التعليمية متعة، التقنية تطور و جميعنا محتاجين نتطور ،أنا أحب أنطور .  
أعتبره هذه الأيام ا مثل الأكل و الشرب

Sohila: I believe in using technology and asking students to develop in using it as well. It gives them confidence. I always encourage my students to learn and search for new things in technology. I tell my students “I give you keys for knowledge” and then “show me what you can do and what I can learn from you”. My students come up with amazing things. (I; Baa; Sohila)

أنا أو من باستخدام التقنية، دائما اشجع طالباتي انهم يتعلموا تقنية، تديهم ثقة في النفس فمثلا أشجعهم يتعلموا أشياء جديدة يبحثوا عن أشياء جديدة بقول لطالباتي أنا أعطيكم مفاتيح المعرفة و انتو وروني كيف تبدعوا و خلوني أتعلم منكم. طالباتي يجيبولي أشياء رائعة



The teachers' social capital included their social networks: that is, their families, students, students' mothers, their supervisors and their colleagues, and being part of online teacher communities. This social capital includes the notion of "warm experts", as suggested by Bakardjieva (2005), taken from their family, friends and people within their social circles, from whom they learn.

There are many cases where the teachers connected their social capital (for example, their colleagues and families) to their cultural capital (to increase their skills and knowledge). The teachers stated that they use their social networks for learning and sharing their experience. They said that they learned from their sons and daughters, from technicians, from people they do not know in forums, and from their students. Furthermore, being connected through the Internet increased their social capital and gave them the opportunity to learn from a wide variety of people.

In Baa School, Haneen stated,

If I want to learn something using technology, I will just look for someone to help me, either from school or outside the school. (FG; Baa)

*إذا حبيت أتعلم شئ جديد في التقنية، هبحث عن أحد يعمني سواء من داخل المدرسة أو خارجها*

In the following sections, I expand on how these different types of capital contributed to the actions of the teachers. Teachers were able to use technology in their practice by challenging their current positions, taking responsibility and improvising new solutions. Different kinds of capital contributed to the teachers constructing new positions regarding their use of technology, thereby increasing their agency and autonomy as individuals.

## **6.2 Resistance and Determination**

The teachers stated that by working in public schools, they either lack necessary resources and/or are equipped with a substandard school infrastructure. Saudi Arabia may be famous for its wealth and big budgets, and its strategic plans and determination to adapt to new technologies (see Chapter 3 for Saudi Ministry policies), but listening to the teachers' work experiences in the field indicated that these practitioners were still lacking some of the basic requirements for students and teachers in the 21<sup>st</sup> century.

When the teachers were asked if they have to pay for all the technology resources in Baa school, Ghada replied abruptly, "Of course we pay for everything, we are a public school not

a private school. We have to pay for everything”. This may tell us something about a perceived position held by teachers: that public school teachers and students are not expected to have similar learning resources compared to a private school. Presumably, it is part of the norm in public schools to suffer a lack of resources, particularly those that are technology-oriented. In this study, teachers in both interviews and focus groups revealed that they resisted the reality of not using technology in their classrooms due to a lack of resources. Rather, they were creative, developing new skills, sharing different ways of using technology with other teachers, and adapting this for use in their classrooms (the ways that they achieved this are detailed in sections 6.3 and 6.4).

Another perceived position that the teachers explained is that a teacher is repeating the same content every year by being involved in routine, boring practices. Teachers gave examples such as organising the preparation book and repeating the same curriculum year after year (see section 5.2.1). Here, teachers shared a perceived position based on the Ministry rules of having to teach a specific curriculum and following their rigid rules. Teachers worked against this perceived position by constructing a new position that embodied creativity and enabled them to apply new ways of teaching and learning. Knowing that the Ministry’s firm rules still applied, and all teachers still had to follow these rules, some teachers still managed to create a new position by trying and experiencing new ways of teaching through using technology. In all three focus groups, teachers wrote on the Ketso leaves that technology helped them escape the boring routine (كسر الروتين) (breaking the boring routine) (see sections 7.1 and 8.1 for more details).

In interviews, teachers also gave examples of ways they used technology to move away from the position of repeating the same practices over the years to a new position of being creative in their teaching. Sohila in Baa school stated clearly, “I hate routine” and “I like to do things differently”. She viewed herself as enjoying doing things differently, including moving against the rigid rules that the Ministry imposed on teachers and the routine practice of being a teacher in this particular context. She decided to implement in her classroom new practices that helped her move away from the routine. She said she preferred to teach more than 20 lessons rather than filling a teacher preparation book, which she described as a very boring practice. She then described how happy she was when she made an electronic version of the teacher preparation book and presented it as a CD with images and hyperlinks. She added that it took her more time and effort to do it, but she was very satisfied with the result. These

examples of new practices that Sohila shared made her realise even more how she hated routine and how she enjoyed developing new practices that made her more eager to learn, develop and take responsibility for her students' situations. That is, Sohila constructed a new, more satisfying position for herself as a teacher that satisfied her need to develop, be creative and create new experiences in her teaching practice.

Fadwa in Dal school cited examples from her practice that reveal how she moved away from routine: for example, using JClic<sup>18</sup> software to design classroom exercises and using the latest presentation programmes. Moreover, she cited her delight in working with a researcher (social capital) to test a new collaborative exercise with her students. She used the words "trapped" and "frustrated" to describe the routine and the position of teaching without new practices or "the adventure" of using new tools for teaching and learning. Fadwa stated that she had endured significant psychological, financial and social pressure. However, in order to achieve what she wanted, she freed herself from all these pressures by concentrating on her goals and being connected to God (symbolic cultural capital). Here, the new practice of using JClic, satisfied Fadwa's need to implement interactive lessons with her students, which she observed had a good impact on her students. It also satisfied her need to develop and stop feeling "trapped" by routine practices.

The determination of spirit among the teachers can be observed in comments made by Haneen, Fadwa and Sohila when they insisted on continuing their studies. Fadwa recalled how people in her community often told her that she did not need to go through all the hard work of continuing her studies. All three teachers were determined to achieve their bachelor's degree and wanted to take their master's as well, despite all the obstacles they faced. They constructed a position of being active, loving to learn and developing themselves. They refused to keep repeating the same content and ways of teaching, and refused the social construct that a woman must choose either studying or having a job and a family. Fadwa stated:

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<sup>18</sup> JClic is an interactive programme developed in Spain that allows the creation of different kinds of activities for students. It has 16 exercise types that can work online and off-line, integrating all multimedia components (video, picture, animation).

Guerrero, E., Muñoz, A. and Sotelino, C. "JClic: a New Software to Teach and Learn Easily. Implementation of Multimedia Activities in Our Classroom." *ICT in Education: Reflections and Perspectives* (2007): 172-176.

When family members say, why are you doing all this, why all this pain, what do you want by studying after all these years? I don't like to listen to this. I will live once, and will learn until I die. Even if I didn't reach what I wanted, at least I learned for myself and I set an example for my husband and children to look up to. I achieved my ambition to learn and to go through the experience. I believe if I have faith, God will help me. (I; Dal; Fadwa)

عندما الأسرة من العائلة يقولوا (ليش التعب، و ليش الهم، ليش الدراسة بعد هذه السنين) أنا لا أحب أن أسمع هذا الكلام . أنا سأعيش مره واحده حتى اذا لم أصل لما أطمح له فأنا قدمت شيء لنفسي و زوجي و أولادي حتى اني أكون رمز يفتخروا فيه ليس شرط أني أوصل . فقد وصلت للطموح للعلم لخوض التجربة . ان كان حبلك قوي مع الله فلن ينقطع أبدا

In focus group discussions, the teachers described positioning themselves against the bureaucracy associated with the centralisation of the Ministry of Education (further details can be found in section 6.2.5). They stated that if they needed anything they had to fill in a form for the head teacher to send to the Ministry's administration office. They stated that it took a lot of time and effort, and the process was time-consuming and really boring. They chose to seek alternative ways to satisfy their individual needs, without having to wait for the Ministry to take action. For example, Haneen in Alef school said that the Ministry supplied one smartboard in the school, but did not employ anyone to teach the teachers how to use it or to activate the board. She then took the initiative of using her personal earnings to pay for it, stating she would not be passive and wait until someone acts.

I got a computer technician to the school, whom I paid from my personal money to activate the smart board in the Resources room. I also asked him to teach me some basic skills of using it. I then went to YouTube and watched more videos to educate myself more. We need to overcome the barriers in front of us; I can't waste my time by waiting. I need to solve the problems myself. (I; Alef; Haneen)

جبت على حسابي الخاص أخصائي حاسب لكي يفعل لي السبورة الذكية الموجودة عندي في غرفة المصادر و طلبت منه يعلمني على أساسيات تشغيلها. و أيضا أتعلم من اليوتيوب على فيديوهات من خلالها اتق نفسي . نحن نتجاوز العقبات ، أما أجلس أنتظر و أضيع وقتي لازم أحل الموضوع من نفسي

Thus, Haneen and many other teachers refused to be passive and go through the long process of waiting for the Ministry to respond to both teachers' and students' needs. Instead, they chose to take action and refused to waste time and effort. In this case, Haneen transformed

her economical capital (her own money) and her social capital (finding someone to teach her) into cultural capital: that is, her skills in using the smartboard.

By listening to the teachers' experiences and the way they viewed themselves, education and society, I noticed that resisting current situations by constructing new positions connected with the way the teachers viewed themselves (symbolic cultural capital and their discursive identity). Teachers in both interviews and focus groups viewed themselves as resisting and seeking new opportunities. Fadwa, Haneen and Sohila shared the opinion of doing something special, and viewed themselves as exceptional women, capable of achieving far more and eager for a challenge.

Conversely, Kinda used different language when talking about herself:

I try to implement new things... I try to take the best of what I see and learn. I try to do my job in the best way I can. I feel am satisfied when I present something good, it gives me happiness (I; Baa; Kinda)

أحاول أن أطبق أشياء جديدة.. أحاول أخذ أحسن من ما أتعلمه و أشاهده من حولي.. أحاول أن أقوم بعملتي بأحسن وجه ممكن . أحس بالرضا عندما أقدم شيء كويس، هذا يعطيني سعادة

Fadwa, Haneen and Sohila used phrases like “I like”, “I don’t like”, “I love” , “I have confidence”, “ I dream”, and “I have passion”. By contrast, Kinda used different phrases when talking about herself like “I try”, “I feel satisfied” , “I hope”, “present something good”, “I struggle أعاني”. The words used by Fadwa, Haneen and Sohila suggest more confidence and determination than Kinda. This may be because Fadwa, Haneen and Sohila had to fight to obtain their degrees and, in order to progress, they needed self-belief to overcome the challenges they faced.

Four teachers, including Kinda, saw themselves as fighting an ongoing battle, and they expressed the different pressures they endured. This included social, financial, family, and work pressures (see section 5.2.1 regarding teachers' overload). Haneen described herself and other Saudi women as “fighters” who always needed to fight to achieve their desires against other social positions that would create an obstacle to their development (this point will be further discussed in Chapter 9).

Fadwa also saw herself as being pressured, but she confirmed that this would not prevent her from achieving her goals.

Sometimes I face psychological pressure, financial, social and family pressure as well. But for me to be able to achieve what I want, I have to disregard all these pressures. The main thing is the strength of your faith and your relationship with God, this gives me strength. (I; Dal; Fadwa)

*أحيانا اتعرض لضغوط نفسية, مادية اجتماعية وأسرية. ولكن لكي أصل لما أريد أتجاهل هذه الضغوطات و  
سبحان الله الشيء الاساسي هو قوة علاقتي بالله عز و جل*

This section revealed the first way that the Saudi female teachers influenced their use of technology. That is, they resisted their current position and challenged the obstacles they faced in relation to the use of technology. By teachers resisting traditional social positions, they positioned themselves as more active, more autonomous individuals in their professional development and teaching. This active positioning was an expression of agency, and this agency also helped them in taking responsibility and improvising solutions, which will be discussed later in this chapter.

### **6.3 Taking Responsibility**

The teachers influenced their use of technology by taking responsibility for things that were not part of their regular duties. The previous section showed that the teachers' resisted their perceived positions and were determined to create new positions for themselves, thereby motivating them to take the next step of taking responsibility to change their situation.

In all the focus groups, the teachers were asked to share the main obstacle they faced regarding using technology in their practice. They all agreed that this main obstacle was the lack of resources. Hence, to overcome this obstacle, teachers took responsibility to provide the needed physical equipment, including laptops, projectors, speakers, papers and ink for printers, electricity connectors and, in some cases, the Internet for use in the classrooms. Table 12 shows statements in Ketso leaves written by the teachers.

Table 12: Example of Ketso statements regarding lack of technology resources

Translated leaf	Original Arabic leaf	School name
Financial overload	الانتقال المادية	Alef
Carrying equipment from place to place	تحميل الاجهزة من مكان الى مكان	Alef
Teachers taking responsibility of all equipment expenses	تحمل المعلمة جميع المصروفات الاجهزة	Baa
Wasting time to plug equipment in every lesson	ضياع الوقت في تشبيك الاجهزة في كل حصة	Dal
Lack of equipment in classrooms	عدم توفر الاجهزة في الفصول	Dal

Changing position was not an easy option for the teachers. In all three schools, participants stated that in public schools teachers were not asked officially to use technology. Rather, it was the teacher's personal choice. It was not part of a teacher's duties to buy anything for the school, but they chose to take the responsibility of supplying most of what they needed at school from their own income. They also stated that although using technology was not part of their duties, they were still expected to use technology in one way or another. The teachers explained that the Ministry provided one computer with a projector or smartboard in the resource room, but it was impossible for all the teachers to use it. Therefore, the teachers either bought their own personal equipment or made monetary donations to be able to provide some for their classrooms.

Sohila explained how, in her school, teachers who already had projectors raised money to hire someone to hang them in their classrooms, while those who did not have projectors contributed some money to help buy new ones. By doing this, they managed to hang projectors in all year five and year six classes. For other classes, teachers still needed to supply their own projectors, which meant that every teacher carried her laptop and projector with her to each lesson.

Hanan in Baa school made it clear that they used a lot of their own money to be able to procure and use technology during classroom instruction:

We pay thousands of riyals for the school, although we are not forced to pay anything. We are not asked to use any technology but because we care about our

school and our students, we see it as a way of collaboration with the school to make it better. (FG; Baa)

احنا المعلمات ندفع الاف الريالات للمدرسة، نعم نحن غير مجبورات أن ندفع أي شيء ، نحن غير ملزمات باستخدام التقنية و لكن مدرستنا تهمنا و طالباتنا يهمونا . نشوقها طريقة تعاون مع المدرسة لكي نجعلها أحسن و نطورها

In Baa school, this conversation took place between teachers. It started when Sara stated her own experience in connecting the equipment every time she entered her classroom and how it occupied a significant portion of the lesson.

Sara said: The equipment is not provided from the school so everything is on the teacher, the laptop, projector, speakers, even electricity adapters are on the teacher. Every time I enter the classroom I have to plug my laptop and the projector and sometimes the speakers that I bought from my own money. I really hope they provide projectors in the classrooms that are already attached to the ceiling and ready to use. There is a lot of time wasted in the process of plugging and re-plugging the equipment.

Lamia: Everything on us, except the electricity - it's from the school. Even if something went wrong, we bring the technician at our expense. In some classes, we donated our projectors to the school, but we had to pay for the technician to attach them to the classes ceiling.

Ghada: No, we didn't pay the technician.

Lamia: Yes, Ghada, we paid him, but because all the things you pay for the school, you started to forget what you paid. (hahaha)

Sara: Oohh we pay thousands of Riyals for the school (FG;Baa)

سارة: المدرسة لا توفر الأجهزة فكل شيء على المعلمة، اللابتوب، البروجيكتور، حتى توصيلة الكهرباء على المعلمة. كل مره أدخل الفصل لازم أشبك اللابتوب مع البروجيكتور و في بعض الأحيان كمان السماعات، كله على حسابي. أتمنى المدرسة يوفرها بروجيكتور في كل فصل مثبت في السقف جاهز للاستعمال. وقت الحصة مهدر في عملية تشبيك الأجهزة و فكها

لمياء: كل شيء على المعلمة بس الكهرباء على المدرسة، حتى اذا شيء خرب ، المعلمة تجيب المختص أو الكهربائي على حسابها. في بعض الفصول المعلمات تطوعوا ووفروا جهاز بروجيكتور و دفعنا للمختص عشان يعلقه في الجدر في بعض الفصول

غادة: لا ما دفعنا للمختص عشان يعلق



لمياء: لا عادة دفعنا بس انت من كثر الأشياء الي بتدفعيها نسيتي ههههه

سارة: احنا ندفع آلاف الريالات للمدرسة

In this conversation, teachers were overwhelmed. However, simultaneously, they began to see the humour in the situation, despite their frustration. In Dal school, teachers also, while using the grey leaves, wrote lack of equipment as the main challenge they face.

Samira: Lack of technology equipment.

Gadeer: We have one computer and a projector in the resources room.

Hadeel: We provide a laptop and a projector. Every time I enter my class I have to plug in my laptop and projector to the electricity supply.

Gadeer: This process, of course, wastes a lot of lesson time and takes a big effort from the teacher since she needs to carry the equipment from place to place.

Sultana: Some teachers use travelling bags with wheels to carry their equipment, and others use the shopping carts like the one you see in supermarkets. But there is a problem if they need to use the stairs.

Samira: It's a waste of time, physical fatigue, financial burden on the teacher, plus not providing maintenance for the equipment. It's all because of the main reason: no providing technology equipment in the classrooms because that is the responsibility of the ministry. (FG; Dal)

سميرة: عدم توفر الأجهزة

غدير: يوجد جهاز حاسب و بروجكتر في غرفة المصادر

سميرة : عدم توفر الأجهزة في الفصول و ايضا لا يوجد صيانة

هديل: نحن نقوم بتوفير جهاز الابتوب و البروجكتر .. كل مره أدخل الفصل لازم أشبك الابتوب بالبروجكتر بالكهرباء

غدير : هذا طبعا يضيع من وقت الحصة و جهد كبير على المعلمة انها تحمل الأجهزة من مكان لمكان

سلطانة: في بعض المعلمات يستخدموا الشنطة الي بعجلات لتحمل الاجهزة و بعضهم يستخدموا عربات و لكن المشكلة اذا كان في درج

سميرة: ضياع للوقت و تعب جسدي و اقتصادي على المعلمة و عدم توفير صيانة لهذه الأجهزة كله بسبب الرئيسي و هو عدم توفر الأجهزة في الفصول و هي مسؤولية الوزارة

The data reveals that as a consequence of not providing equipment in classrooms, teachers not only took financial responsibility for supplying technical equipment, but also took responsibility for carrying technology equipment between classes. Many teachers described the physical energy and teaching time required to move the laptop and the projector from classroom to classroom, and install all the connection procedures repeatedly. Kinda used the words, “I struggle”, since she worked in two different schools at the same time. Some teachers explained that they just wished all classrooms had fixed projectors so they only needed to transport their laptops.

In addition, the teachers mentioned that they did not only supply equipment but they also took responsibility for the maintenance of this equipment. In Alef school, teachers also talked about the lack of maintenance and the fact that there were no regular maintenance check-ups for the school. Raja stated:

There is a financial stress on the teacher. I pay 5000 riyals for a laptop plus all the other things I have paid for. The school should at least provide the maintenance. At the moment, we pay for the equipment and we pay for its maintenance as well. (FG; Alef)

ثقل مادي على المعلمة، أنا أدفع 5000 ريال على جهاز الابلتوب بالإضافة الى الأشياء الأخرى الي لازم أدفع عليها. المدرسة على الأقل لازم توفر الصيانة ، حاليا احنا بندفع على الاجهزة و صيانتها كمان

Haneen also explained the problem with the maintenance of all electrical equipment:

We have problems with maintenance. It's really bad for computers and even air conditioning. The administration sends a lot of requests for maintenance to the Ministry but either they don't come or it takes a lot of time for them to come and fix things. (I; Alef; Haneen)

عندنا مشكلة في الصيانة خاصة صيانة أجهزة الكمبيوتر و المكيفات. إدارة المدرسة رفعت كزه طلب للوزارة لتوفير صيانة و لكن اما لا يستجيبوا و ما في أحد يجي و لا يأخذ وقت جدا طويل الى أن يبعثوا أحد يصلح

Haneen also gave example of teachers paying to provide wireless internet connection for students and fellow teachers:

Most of the students want to go online to get information but they can't access the Internet or print their homework at their homes since their families can't afford a computer or a printer. I supplied from my own money a portable wireless internet and a printer in the computer lab for any student or teacher who needs the internet or to print something. I open the portable wireless device when they need it, then once they finish I disconnect it. (I; Alef; Haneen)

أغلب الطالبات يكون عندهم الرغبة انهم يدخلوا على الانترنت و يجيبوا معلومات و لكن امكانياتهم المادية في البيت ما توفر لهم لا حاسب و لا طابعه. انا وفرت انترنت في حالة احتاجت الطالبات أو المعلمات الانترنت و أفصله أول ما ينتهوا من استخدامه

A teacher from Alef school described how she made a personal effort, using her smartphone to provide an internet connection in her classroom:

I use my mobile in the classroom. For example, I upload an application for citing the Quran for students to repeat the verses, and some video clips about prophet stories. I also go to YouTube from my mobile and connect the mobile with speakers for all students to listen. These are all personal efforts. (FG; Alef)

أنا استخدم الجوال في الفصل، مثلا اضع في الجوال برامج الحفظ في القرآن و ترديد القرآن و أناشيد و مقاطع فيديو عن الأنبياء . أدخل على اليوتيوب من الجوال و أشبك الجوال بالسماعات .. هذا كله مجهودات شخصية

Since Haneen was a resources teacher, she mentioned another problem from which they are suffering: that is, poor electrical connections in the rooms. She explained that when they placed some of the computers in the resources room, they could not connect them all together because of the room's poor electrical connections. Although she and the head teacher invested their own money to pay a technician to connect the computers, because the electricity infrastructure of the school was weak, they still could not open all computers at the same time because of the danger of electrical overload, which made it very hard to connect computers together.

Moreover, the teachers stated that they also need to pay for printers, paper and ink. In Baa school, they commented that they had six printers but could not access any of them. In Dal school, the teachers stated that they collect money from teachers, including the head teacher, to supply printer ink and paper, since they are not covered in the school budget. According to Haneen from Alef school,

We told the school, 'okay, we will buy the printer but you provide the papers and ink'. No response ... so we had to supply everything (FG; Alef, Hanan)

قلنا للمدرسة طيب احنا المعلمات هنوفر الطابعات بس المدرسة توفر الورق و الحبر الخاص بالطابعة ، ما  
في أحد رد علينا ، فطرينا احنا نجيب كل شيء

In three schools, teachers further explained that they also paid to photocopy the worksheets that they distributed to their students for their assessments throughout the year. They stated that they photocopied a range of 2000 papers in one semester. They had to send either their husbands or personal drivers to photocopy these documents in a specialist shop, since teachers did not have access to school photocopiers. Although the Ministry provided a photocopier in each school, at the same time they placed rigid rules and regulations in the case of photocopier damage, whereby teachers and head teachers must provide a full written explanation of the damage, and whether it was down to neglect or misuse. Teachers took a variety of practical steps to escape the bureaucratic process; they explained that because of these strict rules, the school decided that teachers must photocopy outside of the school at their own expense, thereby decreasing the risk of photocopier damage. Haneen, being the resource teacher responsible for the photocopier, stated that there was a policy that no one could use the photocopier except the educational resources teacher or for library use. Teachers were not allowed to use it. Teachers all shared the same experience of paying to photocopy large documents for their students' continuous assessments. Kinda said:

I have around 3000 papers to copy every semester - that means a whole budget just for photocopying. (I; Kinda)

أنا لازم أصور 3000 ورقة لكل ترم ، هذا بس التصوير ميزانية لحاله

In Dal school, Abeer stated that in her previous school they used the photocopier provided in the school, but in her current school she had to make copies outside the school.

Teachers in schools also took responsibility for keeping their schools clean. They explained that the Ministry provided only one cleaner for the whole school. Therefore, every month they had to provide a salary to recruit an additional cleaner. In Baa school, when I asked them why they took this responsibility, they replied "we cannot leave our school dirty".

Teachers not only took responsibility for providing resources, but also for learning how to implement technology in their classrooms. This can be observed in the way Sohila developed

different ideas of technology integration and sought ways to implement it, or when Fadwa searched for new technology software that she thought might benefit her and her students and translated all the instructions from English to Arabic using specific translation software so she could learn this new program. Also, this was observed when Haneen was keen to find an open network to go online to search for new ideas and programs that she can use in her teaching.

Fadwa: I love to go online and check what the latest programs are, what does this programme do, and how I can benefit from it? Anything that is in English I translate it until I find something that can benefit me. I learned Photoshop, Flash, the whole of Office alone without any training. (I; Dal; Fadwa)

*أحب أدخل على الانترنت و أدور على برامج جديدة ، هذا البرنامج ايش بيعمل و كيف أقدر أستفيد منه. و الي بالإنجليزي أروح المترجم و أشوف البين ما أوصل لشيء يفيدني. تعلمت و استخدمت الفوتوشوب و الفلاش و برامج الأوفيس كله دا تعلمته لحالي من غير أي دورات*

Haneen: So I needed to be always connected to search for new ideas and information. Sometimes, I had to use the Internet from my neighbour's house, until I bought a laptop that enabled me to get connected with any open network. I started using the internet and downloading the information I needed. (I; Alef; Haneen)

*كنت دائما محتاجه اتصال بالمعلومات مستمر عشان أبحث أحيانا كنت أضطر عشان ما كان عندي انترنت اني أخذ من الجيران إلين الحمد لله اشتريت لابتوب و هو يمسلك أي شبكة مفتوحة فصرت أستخدم الجهاز و أنزل معلومات*

Fadwa gave an example that shows the ways the teachers took responsibility to learn and collaborate with others to implement new ways in their teaching. Fadwa's example of using the program JClic was part of a collaborative project with an academic in King Abdul Aziz University. She trialled the programme with her students, and after finding it beneficial Fadwa tried to learn it herself. Nonetheless, she faced technical issues that she could not understand. She searched for the designer of the exercises, a Saudi female software developer, and then made contact to learn from this designer how to transfer all the book exercises into this program. Consequently, Fadwa took responsibility of her own development and learning by transferring her social capital of contacting the software developer to her cultural capital, thereby enhancing her skills of designing the required exercises which then enhanced her teaching experiences.

Sohila used the Multiple Mice technique<sup>19</sup> for collaborative learning that she used in her classroom. She said that she heard of this technique in one of her supervisor training sessions, but without having any details about its implementation. She researched ways to implement the technique that involved a separate driver and a particular configuration of PowerPoint, and managed to learn and implement it herself. In order to use the Multiple Mice technique in her classroom, Sohila had to be an independent learner (cultural capital) and search online for ways to implement this technology. Furthermore, she had to customise the available resources, such as her laptop and the PowerPoint software, to the technique and to buy additional technology resources, such as extra computer mice and the specific driver for its successful application (economical capital).

Haneen also stated that she took responsibility of her own development by stating that she needed to develop herself and not wait for others to teach or train her. She learned many skills from Twitter, Facebook and YouTube. She also collaborated with other teachers in forums where they shared beneficial links and answered each other's questions. Hence, Haneen used social networking technologies to increase her skills and therefore also her cultural capital.

In the focus groups, teachers stated that they learned technological skills mainly through their own personal efforts. They learned by practice, trial and error and searching the Internet, in addition to using the help option in some programmes. They described how they learned from each other by sharing their own experiences of using technology and how their implementation of technology in their classroom changed over time. Moreover, they learned from those around them, including their husbands, children, students and colleagues. Teachers used their social capital to enhance their cultural capital by enhancing their skills and knowledge. Hanan stated:

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<sup>19</sup> The Multiple Mice method is about using more than one wireless computer mice with the same computer. It is used to enhance collaborative learning in classrooms. It can be integrated with MS PowerPoint to enable the use of multiple computer mice to answer multiple choice questions and other collaborative exercises. For more information, visit

<http://www.microsoft.com/multipoint/mouse-mischief/en-gb/learn-more.aspx>

Infante, C., Hidalgo, P., Nussbaum, M., Alarcón, R., & Gottlieb, A. (2009). Multiple Mice based collaborative one-to-one learning. *Computers & Education*, 53(2), 393-401.

If I wanted to learn something using technology, I would just look to whomever could help me, regardless of whether they were in the school or outside the school.  
(FG; Baa)

إذا احتجت أتعلم شيء في التقنية، أدور على أي أحد يساعدني و يعلمني سواء داخل محيط المدرسة أو خارجها

In Baa school, teachers placed a lot of emphasis on how they learned from each other, thus demonstrating a high level of cooperation (using their social capital). They stated that technology not only enhanced their skills and knowledge, but also the feeling of companionship and collaboration between teachers. It enabled them to exchange and share experiences, to consult each other and to arrange in-school training between different teachers in the school. Sara stated:

If one teacher learned something new, she will give us training in using this new technology without us even asking her. (FG; Baa)

إذا واحد من المعلمات تعلمت شيء جديد في التقنية ، تيجي من غير ما نسألها تعطينا دورة في استخدام التقنية الجديدة

Hanan added:

Although in-school training is very short in time, it has a great effect on our skills.  
(FG; Baa)

مع أن الدورات الداخلية في المدرسة من قبل المعلمات تيجي وقتها قصيرة بس بتكون مفيدة جدا

Finally, although using technology placed financial and physical burdens on the teachers, technology use was one of the main aspects of their career that they enjoyed and wished to maintain. By using their different capital, they took responsibility for supplying the resources they needed in their practices as well as their own learning and development. Moreover, they all stated that in their classrooms they were free to use what they thought was important to their students (this is discussed in more detail in Chapters 7 and 8).

## 6.4 Improvising Solutions

Another way teachers enabled the use of technology in their practice is through improvisation. The teachers' shared experiences showed that teachers used technology resources that were already available in society to serve their teaching or to overcome a challenge. They gave examples from their practice that demonstrated how they improvised solutions, which over time became a new practice adopted by other teachers as well. Holland *et al.* (2003) states that

it is important to highlight the constraints that people go through to be able to identify the forces driving innovation and not to miss the significance of the improvised departure from the routine path (p. 275). The improvised use of technology present in this section illustrates the constraints and departure from the routine path that Holland *et al.* have described.

In the data, teachers shared their experiences of using WhatsApp and how this practice developed overtime from an improvised action to a practice that was being shared between teachers. WhatsApp is one of the most wide spread mobile instant messaging systems. It is a cross-platform instant messaging application used with smartphones. Teachers in this study started using the application in their professional practice as a response to the need to talk to their students' mothers since teachers were facing a problem of poor communication with mothers. Most students were being taken to and picked up from school by a male who was either their father or their driver. However, since this study took place in a public school setting where many families, as described by the teachers, could not afford a full-time driver to take the daughters to their school. Hence, many fathers had to take an hour off work to pick their daughters from school because the mothers are not allowed to drive. The teachers also mentioned that even for Parents Day, there were some mothers who could not attend because they could not find someone to drive them to school.

Teachers in all focus groups shared how they used WhatsApp to connect with groups of students' mothers, and to send and receive messages in an easy and effective way. They said that at the beginning of the year, they asked the mothers for their phone numbers and then created a group of students' mothers for each classroom they taught. They used WhatsApp to create new channels of communication that overcame cultural, transportation and economic barriers. Although WhatsApp's technical affordances are available to users worldwide, these teachers took the initiative to create mothers groups by collecting their numbers. Indeed, some of the teachers dedicated a specific phone and a number for school use that was different from their personal one.

Saudi teachers improvised solutions by using an application that they already use socially to overcome the challenges they face as teachers and to benefit their students. This use of WhatsApp is an example of localising technology to the needs of the situation (localising technology will be discussed in more details in Chapter 7). There are a number of studies that have looked at the use of WhatsApp: for example, Church and de Oliveira (2013) have discussed the advantages of using WhatsApp over the traditional SMS service. They point out



that WhatsApp provides free messaging services and is free to download, which gives it a cost advantage over other applications. Also, it provides a more social and natural way of interacting since it facilitates conversation and dialogue, thereby making it less formal than the SMS service. This study provides a context specific use of WhatsApp that overcomes cultural and social situations that are being lived by females in this specific context and the ways they used WhatsApp to improvise solutions.

In all three schools, teachers mentioned that they used WhatsApp in their practice. The following conversation took place in Baa school that shows ways teachers used WhatsApp in their practice:

Lamia: Communicating with parents

Ghada: This is a very good point

Researcher: How do you use technology to communicate with parents?

Lamia: We use social programs, especially WhatsApp. We take the numbers of the mothers and create a WhatsApp group for each class.

Ghada: Woow, WhatsApp is amazing in communicating with mothers. It helped us to communicate with mothers and has a big effect on students' attainment.

Hanan: Yes, we all created WhatsApp groups with the mothers of our students.

Lamia: We send some tips, useful information, things we need mothers to be aware of.

Ghada: It had a great effect to improve performance. Sometimes mothers can't come to school since they don't have transportation. If I use WhatsApp, I can communicate with them easily. (FG; Baa)

لمياء: التواصل مع الأهل

غادة: هذه نقطة جدا مهمة

الباحث: كيف تستخدموا التقنية للتواصل مع الأهل

لمياء: نستخدم برامج التواصل الاجتماعي خاصة الواتس أب . نأخذ أرقام الأمهات و ننشئ جروب للأمهات في الواتس أب لكل فصل

غادة: واليااا الواتس أب طريقة رائعة للتواصل مع الأمهات مره يساعدنا للتواصل مع الأمهات و كمان له تأثير واضح لرفع مستوى الطالبات

حنان: أيوه كلنا أنشأنا جروبات للأمهات طالباتنا

لمياء: احنا نرسل في الجروبات ملاحظات و معلومات مفيدة للأهل و كمان أمور نحتاج الأمهات يكونوا ضروري عارفينها

غادة: استخدام الواتس أب له تأثير كبير على تحسين مستوى الطالبات، في بعض الأحيان الأمهات ما يقدرنا بجوا المدرسة بشأن مشكلة المواصلات بس عن طريق الواتس أب نقدر نتواصل معهم بسهولة

The teachers explained that they sent both group and individual messages, depending on the situation:

Sara: If it is a general issue we send it to the whole group, but if it is something personal to specific students we talk with the mother on a private message in WhatsApp. (FG; Baa)

سارة: اذا كان الموضوع عام بنبعته لكل الجروب أما اذا كان موضوع خاص بطالبة معينة فنتواصل مع الأم على الخاص في الواتس أب بشأن بس يوصلها

In Dal school, teachers also said that they used WhatsApp to communicate with mothers.

Mona: It's amazing, amazing. I instantly send messages to the mothers if there is any urgent information they need to know from the school or things they need to send with their daughters.

Solapha: All mothers collaborate in creating the WhatsApp groups. (FG; Dal)

منى: رائع، رائع في لحظة واحدة أبعت رسالة لكل الأمهات خاصة اذا كان في موضوع مهم و طارئ يحتاجوا يعرفوه من المدرسة أو اذا يحتاجوا يبعثوا شيء مع بناتهم للمدرسة سلافة: كل الأمهات جدا متعاونات مع المعلمات لإنشاء جروب الواتس أب

Hanan cited an example of using WhatsApp to overcome language barriers. She said she had a mother who could speak English, but could not communicate in Arabic. As a non-English speaker herself, she found it difficult to communicate with this mother. She asked the WhatsApp group whether any member could volunteer to translate the messages to this specific mother. In this way she was able to help solve the problem for the non-Arabic speaker.

I have one mother who is a non-Arabic speaker, she knows only English. My English is not very good so I find it hard to communicate with her. So I asked in the WhatsApp group if there is a mother who knows how to talk English. One of the mothers volunteered, so I gave her the non-Arab mother number and she always translates what I say in the group to her through private message. (FG; Baa)

يوجد أم واحدة من طالباتي غير عربية فقط تتكلم انجليزي، أنا أتكلم شوية انجليزي بس مو مره. فلجأة  
للأمهات في جروب واتس أب و طلبت منهم يترجموا كلامي في الجروب لهذه الأم. ما شاء الله الأمهات جدا  
تعاونوا انهم يترجموا لهذه الأم

Teachers did not stop at this point. They took this particular technology to another level by trying new methods, testing it and being critical about it. The teachers took advantage of the quick communication with mothers and improvised other ways that could help increase students attainment. Teachers shared their practice of taking pictures of outstanding students' gifts with their names on it, and shared it in the mothers' WhatsApp groups. This created a motivational tool that spurred students to work harder. This new way had a great effect on students' learning experience, making them more enthusiastic to learn and achieve more. It also made mothers engage more in the learning process. In Baa school, teachers stated:

Ghada: Also, we use WhatsApp to show excellent students; I call them (Queens of Quran), so I send in the names of the queens for this week. The first week we had five queens, the following seven, the following twelve, and now students are studying the lessons in advance because they want their names to be with the queen, since they know all mothers can see it in their phones. It is a great way to increase motivation.

Hanan: For me, I create a flower of the week, which is the best student in terms of behaviour. At the end of each week, I don't take a picture of the student but I take a picture of the student's name on the board and the presents she took. I immediately send it to the WhatsApp group. You can't imagine how happy this makes the student and her mother.

Ghada: It has improved both the behaviour and educational levels. (FG; Baa)

غادة: الطالبات المتميزات نعرض أسماءهم في الجروب فمثلا في حصة القرآن يوجد عندنا ملكات الحفظ فكل  
ما يسمعون الطالبات الآيات الجديدة أكتب أسماءهم في الجروب. اول اسبوع كانوا 5 ملكات و ثاني اسبوع  
صاروا 10 و بعدين صاروا 12 و بعدين 20 حتى صاروا الطالبات يحفظوا الآيات الي لسه ما أخذناها عشان  
عارفين انه أمهاتهم يشوفوا أسماءهم

حنان: يوجد معلمة تسوي وردة لكل اسبوع تشوف أحسن بنت في الأخلاق و بعدين تصور الهدية الي أخذتها  
الطالبة مع اسمها مكتوب على السبورة و تبعثها على الواتس أب

غادة: صار تحفيز فحسن مستوى الطالبات علميا و أخلاقيا

سارة: بالنسبة لي انا و حنان عشان ندرس أول ابتدائي فنبعت صورة الطالبة مع الهدية و نبعتها لأمها

They also reflected on the problems they were facing and the ways to overcome these problems. For example, teachers said that using WhatsApp could be very disruptive, since mothers always sent questions and contacted the teacher at different times without considering the potentially negative impact on the teacher or her family. Teachers then proffered different solutions that they could apply to the issue, such as designating a special number for school use only.

Lamia: Sometimes it is very disturbing. Some mothers keep sending me messages all the time.

Ghada: Don't answer Lamia. I personally don't answer.

Hanan: For me, I created a special WhatsApp number only for school, which is different from my private number. I can't call or receive calls; it's only for the WhatsApp. So mothers can't call me. I also have life and I don't want mothers to keep disturbing me.

Sara: I have another solution. If one of the mothers keeps disturbing you, tell her please come to school to discuss this issue.

Ghada: Or set a specific time for them to contact you.

Lamia: Sometimes mothers have arguments, where one mothers say something and another argues with her.

Ghada: There is another disadvantage. Some mothers take the group as chatting space. They start talking about subjects that have nothing to do with the school or their daughters.

Hanan: But honestly, it is a good thing that mothers establish relationships through the group. I still think it is very useful tool, especially when you see all mothers know each other at the parents' meeting, although they never met before, because they are in the WhatsApp group together.

Ghada: Yes, they get to know each other through the group.

Hanan: They also share good topics that benefit their daughters. It has many more benefits than disadvantages. (FG; Baa)

لمياء: إزعاج الصراحة بعض الأمهات تمسكني على الخاص و إزعاج و تأخذ و تعطي أكثر من اللازم  
غادة: لا تردي لمياء

حنان: الحل الي عندي إني جيت رقم خاص للواتس بس ما في اتصال فقط واتس أب عشان ما أبغه أحد  
يزعجني أنا كمان عندي حياة

لمياء: بس هي بترسلي عن طريق الواتس أب

سارة: لمياء أنا عندي حل ليكي اذا عندك واحد أم و لا اثنين من الأمهات زي كده قليلهم تعالوا لي المدرسة  
نتكلم

غادة: أو حددي وقت معين

لمياء: كمان سلبية أخرى بعض الأمهات واحده تطرح موضوع و الثانية تناقضها و تصير مضاربة بين  
الأمهات

غادة: سلبية ثانية الأمهات ما اعتبروا الجروب فقط للتواصل بخصوص بناتهم بس كمان صاروا يطرحوا  
مواضيع مختلفة

حنان: بس صراحه الايجابيات أكثر من السلبيات سوا حب و ألفة ما بين الأمهات. شوفي في مجلس الأمهات  
يتقابلوا كأنهم يعرفوا بعض مع انهم ما عمرهم شافوا بعض فقط على الجروب

غادة: أيوه يشاركون بعض بمعلومات و مواضيع تفيد بناتهم ، الايجابيات أكثر بكثير من السلبيات

Abeer in Dal school mentioned that she bought a special device with a specific chip to be used only for the school's WhatsApp. She added that she used it only in specific hours, as failure to do this could deprive her of sleep at home.

I dedicate a special device for the school. If I used my own personal number, I would not be able to sleep or do anything because of the mothers. (FG; Dal)

أنا خصصت رقم و جهاز فقط لاستخدام الواتس أب للمدرسة. اذا استخدمت رقمي الخاص ما كان قدرت  
أنام و لا أسوي و لا شيء من الأمهات

By connecting different types of teachers' capital with the WhatsApp example that teachers shared, it appears that there are different teachers' capitals that contributed to the ability of teachers to use smartphone applications like WhatsApp in their practice. There is their

symbolic cultural capital (as discussed in section 6.1): for example, their self-image; their determination to make a difference, their strong belief in the benefits of technology; and their religious beliefs that helping others or achieving a good standard of teaching is considered a good deed. Since teachers are willing to make a change in their experiences alongside their students and their families, this determination and motivation to find solutions and to reposition themselves by using their own personal devices and phone numbers to help their students had a positive effect on them to take the initiative to create this new practice. Furthermore, their economic capital enabled them to be able to afford smart phones or fit an additional chip for school use to avoid using their personal numbers. They also used their cultural capital, their own skills and knowledge of using WhatsApp and their experiences as teachers, to improvise solutions and use the technologies as a motivational tool. Finally, they used their social capital of being able to reach the mothers of their students and their awareness of the technologies used in society, as well as what is acceptable and not acceptable in society, which had a positive effect as well.

The use of WhatsApp by Saudi female teachers in a public school setting is an example of an integral moment of situated action. It is a practice that highlights the activity as a product of a specific encounter between the person identifying the need (the teacher), technology (the WhatsApp) and typical human projects (communicating with mothers) arising in a social situation. Moreover, it demonstrates how, in this instance, the reflexive actor (the teacher) came up with ways of using technology that has the potential to expand its meaning, form and function beyond what the developer of WhatsApp may have intended.

The WhatsApp example started when teachers noticed that they needed a more effective tool to communicate with students' mothers, even though the teachers already used the students' homework diaries to write notes to mothers. This method of communication did not satisfy the growing need to reach students' parents. Specifically, there were many times when teachers needed to reach parents urgently, but could not. If there had been a texting service in the school, or the mothers and teachers used email, most probably the teachers would not have taken the initiative to create a WhatsApp group for their students' mothers. WhatsApp would then have remained a useful social application unrelated to teaching, learning or overcoming specific contextual barriers. The need provoked the creativity of the teachers to explore all the tools available and to reach the goal of effective communication with students' mothers.

The teachers improvised not only to solve the problems they faced, but also creatively utilize available resources to ‘prove’ that they were digitally literate. Their technical competences and problem-solving skills (cultural capital) enabled them to make changes in their context. They improvised by localising the available technology to benefit them as practitioners and their students. This highlights that the teachers not only knew how to use technology, but also took further steps to connect past experiences with the technological competences they were gaining. This exemplifies Chu and Robey’s (2008) point that human agency shapes how technology is used and incorporated into social and work practices.

Finally, it is also worth mentioning that the mothers with whom the teachers communicated through WhatsApp had a crucial role in the activity. If the mothers had not been collaborative and had refused to give the teachers their numbers, this new use of WhatsApp would not have emerged. Similarly, if the mothers did not have smartphones, this activity would not take place. The collaboration of the other as part of the activity is a crucial factor in reaching the goal and overcoming the limitations. Moreover, this use of WhatsApp not only changed the experience of teachers and their students, but also that of the mothers.

Another example of an improvised action was the teachers that used their smartphones to connect to the Internet in their classrooms. They improvised by connecting their personal smartphones to laptops and then to the projectors to present video clips or educational websites to their students. Raja from Dal school stated that she paid for extra data on her phone to be able to use it in the classroom. Thus, the teachers improvised using already available resources to remove an obstacle.

## **6.5 Discussion**

This chapter has discussed the different ways in which Saudi female teachers have influenced the use of technology in their practice.

In this section, drawing on the findings from sections 6.1, 6.2, 6.3 and 6.4, I answer the first research question, which is:

1. How do Saudi female teachers influence their own use of technology in their practice?

This study explores the ways teachers manage to create new positions from existing ones with which they are more satisfied or that provide more options and opportunities. I noticed that the teachers in this study did not change the social position itself. Rather, they managed to

construct new positions from existing ones. This chapter showed the perceived positions that teachers shared, what factors enabled them to create new positions by concentrating on their capital, and what actions were required of them as teachers and females living in this particular context.

The main finding of this chapter is that teachers in this study are driven on a daily basis by a meaningful use of technology. Their experiences of using technology are based on the teachers' own decisions, which are influenced by the teachers' own capital. The teachers gave the reasons behind their use of technology: for example, increasing their self-knowledge, breaking the boring routine, keeping up with development and applying collaborative learning. The technology the teachers use appeals to their everyday sense of practicality and usefulness. This is different from other technology integration studies, where technology is provided in schools and teachers are asked to integrate it into their practice. These studies often find that teachers struggle to integrate technology into their daily routine: in some cases, ceasing to use technology when requested by their administration (see section 3.1 for examples of educational technology literature highlighting the teachers' role in using technology in their classrooms).

The teachers' experiences of using technology are based on their own decisions according to their identities, needs and different forms of capital. Their experiences of using technology often started by fulfilling a need, that a teacher became aware of and recognised. This need can be connected to certain pedagogy. It can be based on students' needs, or better communication options or new learning channels. It can also be an emotional need, a need for achievement, a need for development, a need to escape something that teachers dislike about their practice, and many other forms of need. After identifying the need, the teachers started thinking of ways of using technology to fulfil their needs that are accessible and affordable to them.

To be able to fulfil these needs and to take the lead in overcoming some of the challenges they face, the teachers resisted their current situations and created new positions as teachers in this context. By taking responsibility for supplying technology resources, and developing their skills and knowledge, they adapted new ways of using technology in their practice that enabled them to create new positions for themselves. They also improvised by taking advantage of technologies that were already used in Saudi society to serve their own practice. The analysis of the findings generated in this study highlights that the teachers use



technology with a conscious mind and that their own personalities, culture and background influence the teachers in the process of identifying needs and finding solutions through technology.

Looking at examples in this chapter, the teachers' different capital influenced the creation and the use of technology and the sharing of it with other teachers in the same society. The teachers connected and transformed their different capital to enable the use of technology. They used their economic capital to supply technology resources in their schools, which suffer from poor infrastructure and lack of resources. They also used the cultural capital of their teaching and technological skills to help them identify their needs and use technology in a way that will serve them and their students. The symbolic cultural capital also had an effect, like their religious beliefs and their determination to develop and use new practices. Furthermore, part of their symbolic cultural capital was the way they perceived themselves as being determined and ambitious to develop new technologies in order to resolve some of the problems they encounter in practice.

This study found that the teachers took an active role in using technology by resisting their old positions, taking responsibility and improvising solutions. Lack of equipment is also documented in other studies, such as that of Al-Furaydi (2013), who found that lack of technology equipment imposed financial constraints on teachers to adapt technology within their classrooms. However, just like the present study, Al-Furaydi observed that many teachers were determined to use technology and paying for the equipment themselves. Oyaid's (2015) study has a different finding, observing that teachers in schools rely heavily on their schools' leaderships to adapt and support integrating technology, both financially and administratively. From teachers' experiences and shared practices in this study, it can be shown that the teachers did not rely on their schools' leaderships to support them. The teachers lost faith in support and looked for other ways to be able to use technology in their practices.

The main contributions of this chapter are:

- Saudi female teachers did not change their existing social position. Rather, they used technology to create new positions, in addition to existing ones, to provide a wider range of options and opportunities

- The use of technology started with teachers recognising their needs and then looking for ways to fulfil these needs using technology
- Saudi female teachers are active contributors to the shaping and use of technology in their practice
- Saudi female teachers used their economic capital to take financial responsibility for providing technology resources they need in their schools
- Saudi female teachers used their cultural capital to enable the use of technology through their own knowledge of technology, their knowledge of society and culture, and their own experiences as teachers in addition to improvising creative ways of using already available technologies in society to enable the use of technology in their classrooms.
- Saudi female teachers used their symbolic cultural capital through their own beliefs and determination, for example, their own religious beliefs, which had a positive effect on their use of technology through the notions of (*sadaqa*) and good deeds.

In the following chapter, I present the findings and analysis of the second research question, which explores the role of technology in enabling the use of technology by Saudi female teachers.

## **Chapter 7: Ways Technology Enables Saudi Female Teachers to Change their Professional Experiences**

This chapter presents the interpretation of the data to address the second research question:

2. How does the use of technology enable Saudi female teachers to change their professional experiences?

In the previous chapter, the teachers' experiences and practices were explored from the teachers' own perspective: for example, teachers influenced their use of technology by resisting their perceived positions, taking responsibility for their development and supplying their needs and those of their students, and by improvising new ways of using technology from existing resources. Moreover, it highlighted the influence of teachers' economic, cultural and social capital, in addition to the ways they viewed themselves in the process of taking action, shaping technology to fit their needs and changing their experiences.

In this chapter, I concentrate on the role of technology and the ways it enables teachers to change their experiences. The discussion draws on the findings from both the focus group sessions and interviews. Some of the data in this chapter have been used in other chapters, but here I focus on the concept of technology affordances and the different ways technology facilitates and invites teachers to take control and change their experiences as teachers, learners and females. In addition, I connect the findings with those from literature, addressing the social shaping of technology and studies examining Saudi women and technology.

The notion of technology affordances was used by James J. Gibson in 1979, who situated technology across the subjective/objective barrier. It is objective in that the object's existence and properties do not depend on the values and interpretation of the actor. At the same time, it is subjective in that an actor is needed as a frame of reference for its use (McGrenere & Ho, 2000). Gaver (1991) states that culture and experiences may determine the choice of objects, but not the existence of these objects themselves. Norman (1988) picks up this point and presents a different view of affordances that includes both its perceived and actual properties. He uses the term 'perceived affordances', items that are interlinked with the past knowledge and experiences of the actor that determine how the artefacts or objects could be used.

It's very important to distinguish real from perceived affordances. Design is about both, but the perceived affordances are what determine usability. (Norman, 1988, p. 123)

I connect with technology affordances in this chapter because it demonstrates the intersection between technology properties, the subjectivities of the actor using the technology, and the social factors of the context in which it is used. I highlight different technology affordances that have enabled teachers to shape and localise technology affordances to their circumstances, society, needs and creativity.

To answer this research question, data were used to develop codes and themes using thematic analysis. See Table 6, p. 98, section 4.3.7 that illustrates the emerging codes and the relationships between them. In both focus groups and interviews, teachers emphasised that technology equipped them to change their experiences in three different ways:

- In their professional development
- In their communication with others
- In their teaching

This chapter is divided into four parts, including a discussion following these three sections: 1) enabling Saudi female teachers as learners, presenting the teachers' experiences of technology offering new ways of development and learning; 2) enabling Saudi female teachers' communication, presenting teachers' experiences of technology, opening up new ways of communication for teachers that also had a big effect on their development and teaching practice; and 3) enabling Saudi female teachers as teachers, providing examples of technology resources and how they helped in their classrooms. Finally, I discuss the findings of these three sections.

## **7.1 Enabling Saudi Female Teachers as Learners**

Listening to the teachers in both focus group sessions and interviews demonstrated that technology affected their learning and development, either by offering independent learning resources or by opening new channels of learning from other people. This theme includes three codes - *Enabling Development and Learning Individually*, *Enabling Development and Learning through Distance Learning* and *Enabling Development and Learning Socially*.

In the focus group sessions, the impact of technology on the teachers' professional development emerged when teachers were asked to identify different ways they learn and develop, using the brown leaves. It also appeared when they were asked at a later stage to list the advantages of technology using the yellow leaves. Teachers stressed that new technologies, particularly using the Internet, offered new ways to learn, expanded their horizons, hence, encouraging them to learn and try new things in practice.

In the code, *Enabling Development and Learning Individually*, I present what the teachers wrote on the Ketso leaves relating to the different ways technology gave them the opportunity to be self-learners. These statements were written on brown Ketso leaves identifying ways of learning and developing:

Table 13: Example of Ketso statements regarding identifying ways of learning

Translated leaf	Original Arabic leaf	School Name
Learning from the internet	عن طريق الانترنت	Dal; Alef; Baa
Exploring all that is new	من خلال الاطلاع على ما هو جديد	Dal; Alef; Baa
Through using YouTube	عن طريق اليوتيوب	Dal; Alef; Baa

The following are examples of teachers' statements on yellow Ketso leaves, identifying the advantages of technology for their development:

Table 14: Example of Ketso statements regarding technology advantages for development

Translated leaf	Original Arabic leaf	School Name
Access to self-development	الحصول على تطوير الذات	Baa
Keep up with times and understand what is going on around me	مواكبة العصر و فهم ما يدور حولي	Baa
Gaining more life skills	اكتساب مهارات في الحياة	Dal
Know what others have of science and skills	التعرف على ما لدى الآخرين من علوم و مهارات	Baa; Dal; Alef
Adding more information and knowledge	اضافة معلومات جديدة	Alef
Ease of learning from a distance	سهولة التعلم عن بعد	Baa; Dal; Alef
Prepare a distinct teacher capable of creativity	اعداد معلم متميز قادر على الابداع	Baa

Teachers in all three schools said that they use YouTube videos, forums and websites to learn new skills and bring new ideas to their teaching. Hanan stated:

Technology gave us the opportunity to go out and learn something new. I have been teaching for years, give me something new and nice to learn, don't give me something routine that I already know to learn again. No, I want new and interesting new things to add to my knowledge. (FG; Baa)

التقنية أعطتنا الفرصة للخروج للتعلم و اكتساب المعرفة و نتعلم أشياء جديدة. أنا صار لي سنين و أنا في التعليم، اعطيني شيء جديد و مفيد أتعلمه لا ترجعوني أتعلم شيء أنا اصلا أعرفه روتيني ، لا أنا أبغاه شيء جديد و شيق أتعلمه

In Baa school, teachers discussed what they wrote regarding advantages of using technology.

Lamia: I wrote *Keep pace with development* and *Being up-to-date* and *Understand what is going around me*. It is important to know what is new in technology especially dealing with this generation. I feel that they are more open to technology and we need to understand what is going on.

Researcher: How do you keep pace with development?

Lamia: Educate myself.

Ghada: To be a self-learner, I have to search to know, especially as it only takes the press of a button. (FG; Baa)

لمياء: انا كتبت الاطلاع على ما هو جديد و مواكبة التطور و فهم ما يدور حولي. جدا مهم أن أعرف الجديد في عالم التقنية خاصة مع التعامل مع الجيل الجديد. أحس انهم أكثر انفتاح على التقنية و نحتاج نعرف عشان نفهم ايش صاير

باحثة: كيف ممكن تواكبي التطور

لمياء: أني أثقف نفسي

غادة: أتعلم ذاتيا، لازم أبحث عشان أتعلم خاصة انها بس نحتاج ضغطت زر و الاقي الي احتاجه

In her interview, Sohila stated that technology offered many ways for development and learning. Moreover, she added that if a person loves something and wants to be creative, she/he can do it as everything is available to learn. She gave an example of an introduction to the Multiple Mice technique in collaborative learning in one of the training sessions she attended. The trainer only mentioned the idea without providing any technical help regarding its application. She stated:

I heard the idea from training about active learning, with my supervisor they only mentioned it. I went after the training and searched online for more information about it. I learned that I can download software that can be integrated with PowerPoint. And I need to buy small pieces of equipment like a USB and wireless mice. I had all the information I needed online. So when you open the PowerPoint, there is a message that asks you do you want to use Multiple Mice, if you want to use it you press yes, if not you press No. This technique made the students to look forward to the lesson when we use it (I; Baa; Sohila)

أخذت الفكرة من دورة على التعلم النشط مع الموجهة بس قلوا الفكرة بشكل سريع و ما علمونا كيف نطبقها.  
بعد الدورة أخذت الفكرة و بحثت في الانترنت و لقيت انها تدخل في برنامج الباور بويت تنزلي البرنامج  
الخاص بيها و تشتري قطعة زي اليو اس بي تحطياها في الجهاز و ماوسات وايرليس فلما تفتحي  
البوربوينت تلاقي أيقونة لها فيسألك هل تريد استخدام الماوسات المتعددة، اذا تبغي تضغطي و اذا ما تبغي  
تقولي لا . هذه الطريقة خلّت الطالبات يتشوقوا على حصة الماوسات المتعددة

The teachers shared stories of how technology helped them overcome barriers for their development and created alternative methods to overcome policies, regulations, transportation problems, age-related obstacles and distance. For example, Haneen and Kinda mentioned that they learned online continuously, they liked to search for new ideas and to find solutions to problems they faced regarding using technology or other challenges they encountered in their practice. They are both members of different educational forums, through which they learned from other teachers and gathered new ideas.

The code *Enabling Development and Learning through distance learning* presents the teachers' experiences of being enrolled in distance-learning programmes and how it changed their lives. Haneen in Baa school gave examples when discussing the advantages of technology for women whose situations prevented them obtaining their bachelor's degree in the past; however, with distance learning, they were able to continue their education:

My neighbour, who is older than me, didn't have a chance to take her bachelor's degree before. She just finished her degree through distance learning. Also, some of our colleagues who didn't take their bachelor's degrees also achieved them through distance learning. (FG; Baa)

جارتني أكبر مني لم تتح لها الفرصة ان تكمل دراستها، الان استعلمت عن بعد. حتى زميلاتنا في المدرسة  
الي ما كملوا تعليمهم زمان الان كملوا دراستهم عن طريق التعليم عن بعد

Fadwa, in her interview, shared her experience of distance-learning, which gave her the opportunity to pursue her dream of gaining a bachelor's degree. As explained earlier, Fadwa lived in Taif, a town that did not offer undergraduate degree programmes to girls at that time.

Taking my bachelor degree was always in my mind, I wanted to continue my education and to develop myself. Every time I wanted to continue my education, all universities have a policy of five years maximum gap between the date of high school graduation and the start of the Bachelor degree. I couldn't continue my education because of this policy. Until distance learning started. Some universities applied this policy but others didn't. For me, by chance, I was looking at the website of Al-Imam Muhammad Ibn Saud Islamic University and I found their motto is *There is always a chance*. I browsed the website until I found "register". I read all the rules of registration and they didn't have the graduation time condition. At that time I had been working as a teacher for 20 years. I registered, and after two weeks I received a message on my phone to say I was accepted, the feeling was so amazing I cannot describe it. They then gave us training in how to use the technology in the course since it is an online one. (I, Dal, Fadwa)

الدراسة الجامعية كانت دائما في نفسي و حابه أدرس، حابه أطور نفسي. كل الجامعات ممنوع الدراسة اذا كان ما بين تخرجك من الثانوية و السنه الي تبغي تبدئي تدرسي فيها أكثر من خمسة سنوات غير مسموح لك. الين طلع التعليم عن بعد. في جامعات ايضا اشترطت هذا الشرط حتى في التعليم عن بعد و في جامعات لم تشترط. فأنا بالصدفة فتحت موقع جامعة الإمام محمد بن سعود الإسلامية و كان شعارهم "هناك دائما فرصة" فتحت إلا لقيت "سجل" قرأت البنود و التعليمات ووجدت انهم ما هم عاملين أي شرط عشان أسجل. كانت كل الشروط موجوده عندي مع أن مدة عملي تقريبا 20 سنه و أنا بشتغل. و الله شعور لا يوصف من السعادة لما سجلت. بعد اسبوعين جاءتني رسالة على الجوال مبروك تم قبولك و بعدها أعطونا دورة تأهيلية يعلموا الطالب على استخدام التقنية في التعليم عن بعد.

After more than 20 years wanting to take her bachelor's degree, the Al-Imam Muhammad Ibn Saud Islamic University began offering distance-learning programmes that did not implement this particular policy. This enabled Fadwa and many others to achieve their goal.

The technology used in the online program was amazing. The fact that you sit and listen to the lecture that is either presented via audio or video is great. For us students we can communicate with the lecturer during the lecture either using a microphone or using the chat option. Of course for us women students we told them that we want to use only the chat option since the online lecture is mixed both male and female students. For male students they are free to use the microphone or the chat option. (I; Dal; Fadwa)



أدوات التقنية كانت جدا رائعة كونك تجلسين تسمعي المحاضرة الحية التي تكون اما مرئية أو صوتية. احنا النساء ممكن نتكلم مع الدكتور عبر الميكروفون أو التشات و لكننا قلنا لهم نريد استخدام التشات فقط مع الدكتور. أما الطلاب فممكن عادي على راحتهم الذي يريد استخدام الميكروفون يتكلم أما بالنسبة لينا فقط التشات لان المحاضرة مدموجة طلاب و طالبات

Fadwa's online course was in Islamic Studies, delivered by male lecturers to students of both genders. Fadwa explained that distance-learning not only allowed her to overcome policies that created an obstacle for her to learn, but also created a safe mixed gender environment in which to learn. The university used a programme called Tadarus<sup>20</sup> in which each student has her or his own page with all the information and modules needed. Through Tadarus, they attended both video and audio classes, in addition to having access to all required resources and meetings with lecturers. Fadwa stated that, on the online course, both genders accessed the online classrooms where they attended live broadcast lectures, and communicated directly with lecturers via the chat option, or used the audio microphone to ask or answer a question or to make a comment during the lecture. Fadwa said that at the beginning of the course, herself and other female students requested that they did not want to use the microphone/voice option since they did not feel comfortable using it, and that they would only use the chat option. She then added that she and other female students did not want their voices to be heard by male students on the course. Therefore, they used the chat option to talk with the lecturer.

Teachers choosing to use one technology affordance and rejecting another is an example of technology being localised. For example, the affordance of communicating via audio microphone is available but was rejected on the bases of social values and beliefs. All female students enrolled in this course would find themselves obliged to follow these social rules and not to use the audio option, not because the technology does not allow it, but because it is not acceptable in this context.

Here, technology enabled Fadwa and other female students to learn from and communicate with male lecturers in an easy and effective way without compromising their beliefs that

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<sup>20</sup> Tadarus is an education management system LMS provided by the Harf Information Technology Company. It is adopted by the Distance Education Department in Al-Imam Muhammad Ibn Saud Islamic University. It provides everything universities require to manage administration and teaching online, including management admission operations, building and managing the educational content, providing tools to manage virtual classrooms, building and managing tests and assignments, forums discussions and email.

<http://www.harf.com/cms.aspx?ContentID=158&print=1>

prohibit communicating vocally with their male classmates. Fadwa graduated with first class honours in Islamic Studies; she described the technology tools as amazing, and now she wants to continue to do her master's and PhD. However, she is conflicted again by another policy that stated that if the teacher is over 45 years old, she cannot be granted a sponsorship to study for a master's or PhD through the Ministry. Fadwa was very upset by this, but since she is a fighter, she is exploring alternative sponsorship options.

In her interview, Sohila talked about the same point of learning from a male lecturer in a segregated learning environment. She drew a comparison between her own experience studying for her bachelor's degree with a male lecturer a few years back and her sister's experiences studying the same course today. In her day, she stated that it was very hard to reach the male lecturer if you had a question. Most of the time students were unable to reach the lecturer during office hours, particularly for students studying Entisab, which is the part-time option. This led to most of the Entisab students memorising the assigned book due to lack of guidance from the lecturer.

When I studied we used to take the module handbook and study and memorise every word in it without any guidance. It was very hard to reach the male lecturer who gave these modules. There were rarely any women teaching us. Reaching the male lecturers at that time was considered a great achievement. Even if you managed to find their number, their male secretary usually replied. (I; Baa; Sohila)

على أيامنا كنا نأخذ المفردات و ندرس و نحفظ من الجدة للجلدة من غير أي توجيه خاصة اننا شريعة فكان قليل دكتورات يدرسونا كله رجال فكان جدا صعب نوصلهم ، لما أنا أحصل على رقم دكتور أكون أنجزت انجاز عظيم في الآخر أتصل ألقى السكرتير و ليس الدكتور

Next, she said how, with the Internet, everything became much easier and more available to students. Looking at her sister's experience she explained that, through the programme Centra <sup>21</sup> that King Abdulaziz University used to deliver distance-learning specifically to Entisab students, her sister and others attended lectures either via live broadcast, where they could talk to the lecturer using the voice/audio option, or using the chat option to discuss and ask questions. They could also record the lectures to listen to at a later time.

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<sup>21</sup> Centra is a software developed to deliver live eLearning virtual classrooms and business collaboration via the Internet and corporate intranets, including instructor-led training, self-paced learning, online meetings, demonstrations, presentations, and virtual teamwork. <http://learn.accusoft.com/case-study/centra-software.html>

Sohila mentioned that her sister and other female students used the microphone to communicate verbally with the lecturer. After I investigated, I realised the difference in Sohila's and Fadwa's experiences is that, in Sohila's story, the online class had only female students with the male lecturer with no male students. In Fadwa's case, the online class had both male and female students. Therefore, female students did not want to use the voice option. This shows that although technology has helped female teachers and students to overcome the gender barrier in a learning context, they used it only to communicate with lecturers, not with other, male students in the virtual classrooms. They did not report that they benefited from other male students, or that there was any kind of collaboration or group work between them and other male students. Here, technology allowed better, easier and more effective communication with the male lecturer, who was in a higher academic position than his female students. Nevertheless, it did not create new channels of communication with other males who are at the same level. This is different with other technologies, such as forums, which are discussed in the next section.

Sohila added that some male lecturers created WhatsApp groups so their female students can communicate easily and send important announcements about the subject. Some male lecturers asked their female students to use WhatsApp if they needed to reach them. I asked Sohila if it was acceptable for the female students to give their numbers to the male lecturer. She said that students and lecturers provided special numbers specifically for university use.

Now it is like the speed of light. It is faster than emails and chat rooms. WhatsApp is very easy and fast. My sister can easily reach the male lecturer for any question.  
(I; Baa; Sohila)

الآن أصبح الواتس اب أسرع من الليزر حتى أسرع من الايميلات و الماسينجر. اخواتي باستخدام الواتس أب بسهولة تقدر تتواصل مع الدكتور الي يدرسها

In this context, WhatsApp was used for educational purposes to allow formal communication between male lecturers and their female students outside the personal circle of relationships, which is different from using it with family, friends and colleagues. Creating a special number for formal WhatsApp use is a way of society finding solutions that allow it to enjoy the technology affordance while fitting simultaneously within cultural norms. In this case, smartphones were not simply phones with an internet connection, and WhatsApp was not only a communication application that enabled chatting. Here, WhatsApp was used by students and academics of different genders to make learning, teaching and communication

more effective and easy in a context that is gender-segregated. It is also an example of localising the technology to fit the social context and the needs of the users.

This experience is consistent with the example provided by Al Lily (2013) of male academics giving their personal mobile numbers to their female students and other female academics so they can communicate easily during office hours (Al Lily, 2013). In Al Lily's example as well as in this study, mobile phones were not only used as a fast communication tool, but also as a problem-solving tool to overcome the physical barriers between the two genders, since they are located in different campuses, and as a way to carry out their jobs more effectively. As Al Lily states (2011), modern technologies allowed the two genders in Saudi society to be integrated virtually, while remaining physically segregated. He also suggests, "in order to enhance the use of technology within the Saudi context, it is recommended that Saudi educators develop localized means of implementing technology within the classroom which conform to localized customs" (p. 84).

It is worth mentioning that taking a university course that is delivered by a male lecturer is not prevalent solely in distance-learning programmes. It has existed in all Saudi female universities since they opened in the 1970s. To overcome the lack of female lecturers, universities established technological systems to enable female students to learn from male lecturers. These lectures were either transmitted by TV broadcast from the male campus to the female campus or, in some cases, male lecturers sat in a separate room with a glass barrier between them and their female students. Female students communicated with the male lecturer either by telephone during the lecture, or called the lecturer during office hours (to know more about different ways male lecturers communicate with female students in Saudi universities, see Al Lily (2013)).

The examples of teachers reveal that the gap between the experience of female and male students learning from a male lecturer is much reduced by using the online distance learning environment software and other technological resources. Before distance-learning technology resources, male students had the option of attending the same class as the male lecturer. They could ask face-to-face questions and knock on the lecturer's door during office hours. For female students, though, the learning experience with this same male lecturer would be significantly different. Adapting distance-learning platforms reduced the gap between the two experiences, whereby both genders can access the same online classes, and can use the same chat and other facilities offered by the program to communicate with the lecturer. This

demonstrates the change of experience before and after using technology for Saudi female students studying in this setting.

Furthermore, the teachers addressed the idea that technology increased their opportunity to learn not only across gender lines, but also from each other. In the code *Enabling Development and Learning Socially*, I place what the teachers discussed about technology creating ways of sharing knowledge and skills between them and others in their society. Examples of what they wrote in Ketso are:

Table 15: Example of Ketso statements on ways of sharing knowledge and skills

Translated leaf	Original Arabic leaf	School name
Exchange experiences with colleagues	تبادل الخبرات مع الزميلات	Dal; Alef; Baa
Consult colleagues at work	استشارة الزميلات في العمل	Baa

Teachers stressed that they learn from each other and that technology not only enhanced their skills and knowledge, but also increased the feeling of cooperation and collaboration between them. Technology helped boost their social capital by offering spaces in which they can communicate and learn from others.

In Dal school, teachers mentioned that using new teaching tools encouraged them to obtain feedback from their supervisors and other teachers who sometimes attended their classes. It created a feeling of positive competition between teachers and encouraged the sharing of ideas with each other in the school.

The teachers cited using virtual chat rooms in training and how this technology helped other trainers to create a space where they can share their knowledge and for others to attend the training and develop their skills while at home. Teachers in Baa school gave an example of virtual voice/video chat rooms, like the PalTalk<sup>22</sup> application, which enabled users to create chat rooms where they can communicate through chat, video and voice.

They stated that this application was used by some trainers and its application would be beneficial to other training sessions as well:

<sup>22</sup> PalTalk is an application that gives users the ability to create their own chat rooms in which they can communicate via video, group chat and voice. [www.paltalk.com](http://www.paltalk.com).

Nada: An advantage is Voice Rooms.

Sara: Yes, like PalTalk.

Researcher: What is PalTalk?

Nada: It is like a virtual group, where the group master can create a virtual room and start talking; you can only listen to her voice. Through PalTalk you can listen to the trainer and also participate yourself in the group by using the voice option to ask questions. It is as if you are attending a face- to-face training. It is amazing.

Sara: There is also a video option if someone wants to use it.

Ghada: It is a very good advantage of technology. It would be great if they can use it in other training sessions as well. (FG; Baa)

ندى: من المميزات الغرف الصوتية

سارة: ايوه زي بال تالك

الباحثة: ايش هو البال تالك

ندى: كأنها غرفة افتراضية، في مديرة الغرفة تنشئ الغرفة و تبدأ تتكلم، تقدر و انت في الغرفة تسمعي صوتها. عن طريق بال تالك تقدر تسمعي المدربة تتكلم و حتى ممكن تشاركي صوتيا عشان تسألني سؤال. مره رائعة هذه الغرف الافتراضية كأنك بتحضري دورة وجه لوجه

سارة: ايضا يوجد خاصية فيديو اذا أحد بيغه يستخدمها

غادة: هذه ميزة رائعة للتقنية ، هيكون جدا مفيد اذا سوا باقي التدريب بهذه الطريقة الافتراضية بدل ما نروح و نيجي من بيوتنا نقدر نحضر الدورة

Also in Alef school, teachers saw in online training a potential to overcome the challenges they are facing with face to face training.

Haneen: like in universities where students have the option of distance learning, why wouldn't the ministry provide training online as well

Raja: There is no online training provided from the ministry, although I expect attending online training will be much more beneficial than physically going to the training

حنين: مثل الطالبات الجامعيات قسم تعلم عن بعد و يتعلموا هل لا يمكن الدورات تكون تعلم عن بعد

رجاء: مافي دورات عن بعد، مع ان دورات عن بعد أتوقع ممكن تكون مجدية أكثر من انك  
تروحي الدورة بنفسك

In summary, this theme, *Enabling Saudi female teachers as learners*, provides examples of different ways in which technology enabled the teachers to learn and develop by giving them access to educational videos, distance-learning programmes, websites, forums, and chat rooms. Moreover, it also equipped them to learn socially, either from other teachers inside or outside the school, from other teachers on the Internet, from technicians, from other members of their families, from male lecturers, or from their students. The teachers discussed how technology gave them the opportunity to develop either by themselves or by collaborating with others. This theme also demonstrates how technology enabled Saudi women to learn across gender lines in a more effective and easier way. Learning online reduced the gap in experience between male and female students, especially when learning from the same male lecturer.

This section connects to the theme - *More Control over their development* - which is discussed in Chapter 8 when answering the third research question.

## **7.2 Enabling Saudi Female Teachers' Communication**

In both focus groups and interviews, the teachers discussed the various ways in which technology helped them improve communication with different people in their society, thereby affecting their work as teachers and as learners. This theme has three codes. In the first, *Enabling Communication with Mothers*, I placed the teachers' experiences with modern technology and how it allowed them to create new channels of communication with their students' mothers. In the second code, *Enabling Communication with Society and the World*, the teachers shared ways technology gave them options to communicate with their society, specifically with the other gender (men), as well as being connected to people all around the world. The third code, *Enabling Information Filtering*, captures how technology helped teachers ensure the accuracy of the information they received, to filter the information and be more critical about it.

Below are examples of Ketso leaves statements written by the teachers regarding technology affordances in communication.

Table 16: Example of Ketso statements regarding technology affordances in communication

Translated leaf	Original Arabic leaf	School name
Ease of communication with scholars to make sure of the accuracy of news we get from technology	سهولة التواصل مع المشايخ للتأكد من صحة الاخبار	Baa
Communicate through WhatsApp	التواصل عن طريق الواتس اب	Baa; Dal; Alef
Positive communication with the world around me	التواصل الايجابي مع العالم من حولي	Baa

In the code *Enabling Communication with Mothers*, the teachers in focus groups and interviews stated that technology helped them communicate with their students' mothers<sup>23</sup>: in particular, using the WhatsApp application. In section 6.4 of the previous chapter, I talked about how teachers improvised using technologies like WhatsApp that are already widespread in society to overcome challenges they are facing in their practice. One of the challenges was reaching students' mothers in their schools; they expressed that not all mothers can come to school for parents' evenings. In this section, I demonstrate how WhatsApp provided the opportunity for teachers and mothers to overcome challenges, and created an easy and effective method of communication.

Teachers expressed the fact that WhatsApp also created a channel whereby mothers can communicate with one another. As the example that Hanan gave earlier about the non-Arabic speaking mother who Hanan asked other mothers in the group to translate to her the notes that Hanan shared in the group. Here the use of a WhatsApp group and the collaboration of other mothers made communication between the teacher and the non-Arabic speaking mother much easier and possible.

Although WhatsApp is not an educational tool and might be viewed in other contexts as inappropriate for use by teachers, in this particular situation not all mothers can attend their daughters' parents' evenings, either as a result of transportation problems or other obstacles. Teachers also mentioned that not all students have computers at home or internet connections. Teachers and mothers found that WhatsApp is widely available and very easy to use.

<sup>23</sup> The reason I refer only to mothers and not 'parents' is because teachers in girls' schools communicate with their mothers, rather than their fathers. In very rare cases, a female teacher would communicate with a student's father, but mainly in the absence of any female guardian.



However, there is evidence of some problems in using this tool, which are discussed in Chapter 8.

In the code *Enabling Communication with Society and the World*, Sara from Baa school described using technology as “positive communication” with the world, while Ghada added:

I feel technology made me open up to the world around me. By searching what other teachers are using, it opened my horizons. (FG; Baa)

أشعر التقنية وسعت مداركي و جعلتني أنفتح على العالم من حولي عن طريق البحث على ما هو جديد و  
أيش أشياء جديدة معلمات يستخدموا

Another strong pattern to emerge from the study is how technology helped females overcome some of the difficulties they face because of their gender. In Saudi culture, genders are segregated in schools and most work environments. This theme highlights how technology has helped female teachers and female students to overcome the gender divide obstacle and start learning and communicating with men in an easier and more effective way, which is at the same time acceptable for their cultural environment. As mentioned in section 7.1, technology helped female students to learn and communicate more effectively in the context of learning from a male lecturer. This section shows other examples of the effect of technology in communicating with males that were addressed more in the interviews than in the focus groups. This may be because of the sensitivity of the subject in society. That does not mean that teachers think that communicating with men is not right, but it has its own conditions.

In her interview, Haneen stated that one of the main sources of her development in using technology is from the teacher forum she subscribed to. She explained that she learned a great deal from other male teachers in the forum, particularly the forum manager, who was also a teacher:

Sometimes there are things we need to get through men, and you know how it is very hard socially to communicate and deal with men. I communicate with the learning resources forum manager. He is an amazing person; I benefit from him more than any supervisor or a person I contact in my work. I communicate with him through the forum. I send a message in the forum and directly I receive replies from other subscribers in the forum. This forum is amazing, you know. It's great to help a person who needs support while both are separated and away. He (the forum

manager) post links with all the steps and descriptions to do things I need. (I; Alef; Haneen)

أحيانا نحتاج نوصل الى أشياء عن طريق الرجال، و انت عارفة كمجتمع صعب التعامل مع الرجال كثير. أنا بتواصل مع معلم و هو المشرف على منتدى مصادر التعليم. انسان رائع جدا هو أفادني أكثر من أي موجه أو أي انسانة رجعتها في المصادر. التواصل بيني و بينه عن طريق الانترنت من نفس المنتدى. أنا مشتركة في المنتدى أرسل رسائل و تجيني مباشرة الردود من المشرف و من أعضاء موجودين في الموقع. هذا الموقع جدا رائع يعني انت عارفة انه انسان ينفعك و يفيدك و هو بعيد عنك و ما يعرفك. كونه انه يحط روابط و ينزلها على الموقع و أنا أفتحها و أستفيد منها مباشرة و ألاقى شرح كامل و الخطة التفصيلية للموضوع الي بسأل عنه

Haneen explained that while they are segregated, and probably will never meet other male teachers in person, this did not prevent them from learning and collaborating. She did, however, stretch cultural norms by communicating with men who are in a similar position to herself (both teachers) in section 8.1, Sohila's and Fadwa's experiences with communicating and learning from a male were strictly from a male lecturer. In this example, Haneen challenged this stance; in her case, using social networking allowed her to communicate with other, male teachers who are at the same level as herself: they were all teachers who shared the same challenges and needed similar information. Haneen stated that this exerted significant cultural pressure, as communicating with other, male teachers drew disapproval from her husband. If Haneen was communicating with a male lecturer during a university course, it would be acceptable but for her to communicate with others who were at the same level as herself and in an open space as a forum was not considered acceptable in her society (more details on how this affected Haneen's experience are discussed in Chapter 8).

Despite the challenges that Haneen faced, technology resources like forums did provide the option for both genders to communicate in a more acceptable manner. By providing the option of anonymity, in forums, teachers both male and female, can use anonymous names. They also can communicate using text and not go out of their cultural and social norms by using audio or video. The technology features helped them perform an activity without challenging their beliefs and cultural norms.

Technology helped the teachers not only to overcome the gender divide, but also to have more communication options with other females as well. Sohila gave an example of how WhatsApp helped her to communicate with her supervisor to share ideas with her and other teachers. After her supervisor took the initiative to create a WhatsApp group that included the

supervisor and all the teachers that she supervised, through the group the supervisor posted information about training, new ideas and her teachers' achievements. This made sharing ideas and reaching each other much easier, as well as creating some competition between teachers to come up with new and creative ideas in the group. Sohila expressed that she loved the group and was a big fan of her supervisor for keeping up with new technologies and methods of communication.

The teachers mentioned how modern technology, particularly social networks, opened up new channels of receiving information from different sources. The code *Enabling Information Filtering* shows that part of the technology affordances in communication that the teachers mentioned is giving them the resources to filter and make sure of the accuracy of the information they received. It made communication easier not only with male lecturers and other male teachers in forums, but also with male Islamic scholars through social networking. They gave examples of using Twitter and websites to communicate with scholars and check whether or not the information they received is correct:

Hanan: What I like about new technologies is that it is easy to reach Islamic scholars either to ask about something you need to educate yourself about, or as a way to verify if the scholar really said something or not.

Lamia: Like when I receive a post that a specific scholar said something, immediately I go into his Twitter account to make sure. A lot of times, you find the scholar wrote in his account that he didn't say what other people claim he said, and that it's only a rumour. (FG; Alef)

حنان: من مميزات التقنية سهولة البحث و سهولة الوصول للعلماء و المشايخ عن طريق مواقعهم أو تويتر

لمياء: أول ما يوصلني شيء أرجع لحساب التويتر الخاص بالشيخ و أتأكد من الشيخ نفسه و في كثير من الأحيان تلاقي الشيخ كاتب تكذيب للخبر أو الإشاعة الي تناقلت باسمه

They mentioned that one of the drawbacks of technology is being connected the whole time, which poses numerous challenges for society. One such challenge is the spread of rumours and lies, which means it is very important that people in society are aware that they should first check the validity of the information they access before sharing it. Here, Twitter enabled teachers to filter the information they received, and be connected with people who are hard to reach via the usual modes of communication.

In summary, the theme *Enabling Saudi Female Communication* reveals different technology affordances regarding opening up new channels for Saudi women to communicate with different people in their society. They cited examples of different technologies they used to communicate with students' mothers, supervisors, male teachers, male lecturers, trainers, scholars and so on.

### **7.3 Enabling Saudi female Teachers as Teachers**

Within this theme, I placed the teachers' experiences of using technology in their classrooms and how technology offered them new ways of teaching. The theme has two codes: *Enabling Collaborative and Interactive Learning* and *Enabling Enjoyment and New Encouragement Ways*.

Regarding their teaching ways, the teachers discussed that technology gave them access to try new ways of teaching and be creative (cultural capital). Ghada in Baa school stated:

Technology helps to prepare teachers to become capable of changing society, and preparing teachers who are able to be creative. (FG; Baa)

اعداد معلم قادر على التغيير، تغيير المجتمع يعني و قادر على الابداع

In the code *Enabling Collaborative and Interactive Learning*, I placed teachers' experiences using technology in their classrooms. In both focus groups and interviews, the teachers gave examples of new practices they exploited in their classrooms using technology, and how these have had a positive effect on their teaching experience and their students. In this context, technology afforded new ways of reaching students and implementing some pedagogical and cognitive techniques of which teachers were aware, and technology helped in the application of these approaches.

For example, the teachers mentioned technology resources that helped them apply collaborative learning in their classrooms. In her interview, Sohila gave an example of the Multiple Mice technique that she used in her classroom. She divided the class into groups and gave each a wireless mouse. Each group had a leader who held the mouse, and they rotated the leader's position to give each student a chance. Sohila then displayed exercises on the screen, and each group tried to be first to get the right answer. She explained how this technique had made the lesson interactive and encouraged students in each group to work together to find the right answer. She used tasks like multiple-choice questions or questions

like 'choose the right picture or colour'. Sohila said that to be able to apply this technology, though, she needed to buy some wireless mice, use the Microsoft Mouse Mischief<sup>24</sup> plug-in, and learn how to use it with PowerPoint. She said that it was not hard to learn and any teacher can apply this technique in her classroom. Although it was Sohila's initiative and effort to apply this technique in her classroom by taking responsibility to supply the equipment and also learn how to use it (link to chapter 6.3), it was also the technology affordance that she described as easy to apply and affordable.

Fadwa, in the interview, also gave an example of using technology to encourage collaborative and interactive learning. She mentioned the JClic program that was introduced to her during a collaborative project with an academic in King Abdulaziz University who wanted to examine its impact on students (see section 7.2). The academic asked Fadwa to test the program in her classroom, and to give her feedback. The programme is concerned with creating interactive questions that provide direction and feedback to find either the right or wrong answer. Fadwa explained:

You will not believe how much students collaborated with the programme. I tried it with weak students and after using it they reached a very good level. I present the exercises on the projector through my laptop. Then I ask one student to read the question and then pick the right answer using my laptop. If the answer is right, the program displays a clapping sound and a happy face - if the answer is wrong, then a sad face is displayed. (I; Dal; Fadwa)

ما تصدقي البنات كيف كانوا متفاعلين مع البرنامج. بدأت أستخدم البرنامج مع طالبات مستواهم ضعيف و انتهينا بمستوى جيد جدا للطالبات. الي سويته هو اني أعرض البرنامج على جهاز الاب توب المشبوك على البروجيكتور و أطلع طالبة على الاب توب و أعرض لها السؤال مع خيارات و هي تختار الاجابة. اذا كانت الاجابة خاطئة يطلعها وجه عبوس و صوت مش حلو و اذا الاجابة صحيحة يطلع صوت تصفيق و برافو . كان البرنامج جدا رائع الصراحة.

Fadwa also divided her classroom into groups, where each took turns with the mouse to answer the interactive questions on the board. She said that she wanted to transform all lesson exercises to the JClic format since she found that the use of interactive questions was very useful with young children.

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<sup>24</sup> Microsoft Mouse Mischief is a PowerPoint plug-in used to make the lesson more interactive [www.free-power-point-templates.com/articles/interactive-classroom-lessons-with-microsoft-mouse-mischief/](http://www.free-power-point-templates.com/articles/interactive-classroom-lessons-with-microsoft-mouse-mischief/)

Sohila gave another example of using a name mixing software to encourage her students to memorise the verses of the Quran. She said:

In Quran lessons, most students find this lesson hard and boring so I downloaded name-mixing software. I told my students that this nice programme picks the name of the winner who will recite the Quran. The software mixes their names which are displayed on the projector then stops at one name, who will start reciting the verses that they need to memorise. I repeat the process so most students' names are picked. This software made reciting really exciting for students. (I; Baa; Sohila)

في حصة القرآن خاصة انه الطالبات يشوفوها صعبة و شوية مطفشه نزلت برنامج خلط أسماء نزلته على جهازى ، البرنامج يخلط الاسماء و بعددين يختار اسم واحد قلت للطالبات الاسم الي يختاره البرنامج هي الفائزة الي هتسمع اليوم. فصارت الحصة كلها حماس

Sohila stated that using this programme and asking students to press the button to mix the names made the lesson more fun and enjoyable. Here Sohila identified the problem, creatively sought solutions, used the technology, evaluated it and made the decision to use it again.

Kinda stated how technology enabled her as an English teacher to make her students listen to the correct pronunciations of words, and memorise songs that helped them learn English words. She added that technology helped her to expose her students to other cultures by using videos, audio files and PowerPoint presentations:

I give my students the link for the song I want them to memorise, they go back home and keep listening to it until they memorise it. (I; Baa; Kinda)

أعطي طالباتي الرابط للأغنية الي أبغاهم يحفظوها ، فلما يرجعوا بيوتهم يفتحوا الرابط و يسمعوها الين ما يحفظوها

Kinda added that instead of her repeating the words in English, she used videos and websites with sound effects, which gave the students the opportunity to repeat them along with the video. Here technology saved Kinda from the effort of using her own voice by using the sound option. She also added:

Since I teach a foreign language, I need to use technology because I want the students to listen to the correct pronunciation of the language and get used to the English names ... If I want my class to go smoothly, I use audio files, PowerPoint, videos; it's amazing. The students listen to the songs and conversations better than

me repeating it over and over.... I felt the difference between lessons when I use and do not use technology. The lessons in which I use technology with my students, we finish the lesson, we play, sing and have fun. I feel that the use of technology saves time and effort. In one lesson I can give the lesson and still have time to evaluate students, mark their work and concentrate on weak students. This gave me motivation to use technology more in my classes. (Int; Baa; Kinda)

انا كتدريس لغة أجنبية مهم ان الطالبات يسمعن و يشوفوا اللهجة الصح حتى الاسماء يتعودوا عليها. عند استخدامي للتقنية في الفصل يكون الدرس سلس و يختصر على المعلمة الوقت و الجهد.. عند استخدام التقنية يكون عندي وقت أقيم و أصصح و أركز على الطالبات الضعاف. هذا أعطاني دافع اني أستخدم التقنية أكثر.

Raja in the Dal school said that she used the data allowance on her smartphone to provide internet in her classroom. She connected her smartphone to her laptop, which was connected to either the speakers or the projector. Here, the smartphone data offered Raja and her students the ability to be connected in the classroom in order to watch videos or to use educational websites.

The teachers used different software programs to present their curricula. In Alef school, one teacher said that she used a programme to edit YouTube videos so that she only uses the parts she needed in her lesson. In the same school, other teachers said they will start adapting the Multiple Mice technique by next semester to encourage student collaboration. They stressed that it is the combined efforts of the teachers in collecting money that enables them to buy what is needed to apply the desired technology.

The teachers emphasised that technology helped them move away from traditional teaching to a method that is more interactive and collaborative. Moreover, using technology helped them consider different levels and types of intelligence for each student. In Alef school, teachers discussed the advantages of using technology resources in this area:

Nada: One day, a trainer came to the school and gave us a lecture about different learning intelligences. She showed us that a picture or a video clip can save 15 minutes of explaining something by only talking since you take into consideration the children who are visual learners.

Sahar: Yes, using technology helps us to take into consideration different learning styles. I, as a teacher, must integrate different ways of teaching in my lesson. For example, I can begin my lesson with a presentation

show, and then I distribute some worksheets, then a physical activity and so on.

Nada: I can tell you, when we first started using technology, we used to use PowerPoint presentations from the beginning to the end of the lesson. We just talked and talked, but now it's different. We use presentation only in a small part of the lesson, then we start doing different things.

Sara: In the beginning it was something new and we were not familiar with it, but now, I can judge when I need it in my classroom. (FG; Alef)

ندى: مره جاءتنا مدربة للمدرسة أعطتنا دورة عن الذكاءات المتعددة، ورتنا انه ممكن صورة أو مقطع فيديو يوفر 15 دقيقة من شرح مقارنة اذا فقط أشرح نظري لأن الصورة و الفيديو يأخذ بالاعتبار الأطفال البصريين

سحر: أيوه استخدام التقنية يساعد المعلمة تأخذ بالاعتبار مختلف الذكاءات و طرق التعليم . أنا كمعلمة يجب أن أدمج طرق تدريس مختلفة في حصتي مثلاً ممكن أبدأ الحصة بعرض باور بوينت و بعدين أوزع أوراق عمل و بعدين أسوي نشاط حركي و هكذا

ندى: أنا أفلك أول ما بدأنا استخدام التقنية كنا نستخدم عرض الباور بوينت طوال الحصة بس نتكلم و نتكلم بس مع الممارسة الوضع الان اختلف. نستخدم عرض باور بوينت فقط في جزء بسيط من الحصة و بعد كده نستخدم أشياء مختلفة

رجاء: في البداية كان شيء جديد و ما كنا متعودين عليه بس دحين أقدر أقيم متى و ايش أحتاج في الحصة

In the code *Enabling Enjoyment and New Encouragement Ways*, I placed teachers' reflections on using technology in their classrooms regarding the benefit for their students.

Table 17: Example of Ketso statements on advantages of using technology in classrooms

Translated leaf	Original Arabic leaf	School name
Raise motivation of learners	اثارة الدافعية لدى المتعلمين	Alef; Dal; Baa
Reinforcement of information when using technology	ترسيخ المعلومات عند استخدام التقنية	Baa
Entertaining and beneficial	المتعة و الفائدة	Baa, Alef; Dal

Sohila described using technology to build up her students' confidence:



I also give my students some work using technology. I give them tasks, and when a student submits the homework using computer effects or any new way, I ask her, 'How did you get this effect?' Even if I know how to do it, I ask her to explain in order to increase her confidence, and the students are really happy teaching me new ways in using technology. It is a great way to encourage students to learn and search for new things. (I; Baa; Sohila)

أنا أشجع طالباتي يسووا شغلهم باستخدام التقنية. أعطيهم مهام و لما الطالبة تسوي شغلها باستخدام حركات جديدة أو أي شي جديد أسألها كيف سويت دي الحركة ، علميني كيف أسويها حتى اذا كانت الحركة سهلة و أنا أعرف أسويها بس عشان أشجع الطالبة و أفرحها. الطالبات يفرحوا أنه يعلموني أشياء جديدة اتعلموها في التقنية و كده شجعتهم انهم يتعلموا و يبحثوا عن أشياء جديدة

The teachers in the focus groups felt the same regarding integrating technology - that technology made teaching more enjoyable and fun and that it changed the nature of the teaching profession. This discussion took place in Baa school.

Hanan: Through searching and learning what is new, I benefit from other people who have information and ideas.

Sara: I also wrote 'help and enjoyment' and 'overcome the boring routine'.

Hanan: For both teacher and student.

Ghada: Technology made teaching more enjoyable and fun, it changed teaching.

Sara: Before, technology teaching was about preparing the preparation notebook that was very boring... we had to follow specific protocols, but now it's different. Now we have more freedom. (FG; Baa)

حنان: عن طريق اني أبحث و أتعلم ، أنا استفدت من ناس كثير الي عندهم أفكار و معلومات  
ساره: أنا كتبت كمان المتعة و الفائدة و التخلص من الروتين الممل  
حنان: للمعلم و الطالب

غادة: التقنية جعلت التدريس أكثر متعة غيرت التدريس  
سارة: من قبل كان التدريس عبارة عن حضري دفاتر التحضير و امشي على روتين ممل و طرق معينة  
للتدريس بس الان نع استخدام التقنية أصبحت المعلمة عندها حرية أكبر و الوضع جدا مختلف

Teachers in the focus group sessions cited examples of using technology to encourage their students to work harder. One teacher from Alef school said that she brought her iPad to school as a reward for students who worked hard and finished their tasks to play with. Teachers from Baa school explained how they used WhatsApp groups they created with

students' mothers not only to communicate with the mothers, but also to encourage students to make more effort (to read the conversation between teachers of using WhatsApp as an encouragement tool for their students see section 6.4).

In her interview, Kinda gave an example that supports the point of being more aware of when, and when not, to use technology.

One of my supervisors once told me, I can attend a class where a teacher is using her laptop and projector from the beginning of the lesson to the end, but she didn't integrate it within learning - she just used it for the sake of using it. Another teacher might use the technology only in the beginning, or only at the end to test her students' understanding. She might use flashcards, real pictures. I see the second teacher gave her lesson in a much better way than the first teacher, since she gave her lesson in a smoother and more effective way than the first one did. (I; Baa; Kinda)

واحدة من مشرفاتي مره قالت لي " أنا ممكن أحضر درس تستخدم المعلمة الكمبيوتر أو الاب توب و البروجيكتور من أول الحصة لآخرها و لكن ما وظفت التقنية للدرس ، بس كونها استخدمت التقنية لا يعني انها وظفتها . و في بعض المعلمات ما تستخدم التقنية الا فقط في وقت المراجعة أو في بداية الحصة أو كتنقييم نهائي للطالبات أو حتى ما تستخدم التقنية نهائيا فممكن تستبدلها بفلاش كاردز أو صور أو أشياء حسية و تعطي الدرس بسلاسة و توصل المعلومة بطريقة أفضل مئة مره

This section presents examples of technologies that are used by teachers, alongside their reflections on the impact these have on their students. These technologies were used either to present information, encourage collaborative learning, make their lessons more interactive or as an encouragement tool for their students in an attempt to make lessons more enjoyable. Most technologies were used as personal initiatives from the teachers based on their personal decisions to use them in their classrooms.

Looking at the teachers' experiences from the technology side, technology has enabled Saudi female teachers to use it in their practice by being convenient, accessible, pleasurable and meaningful. Since the teachers used their economic capital to supply technology resources in their classrooms and to access different technological affordances, it was crucial that teachers can afford to buy the resources that gave teachers and their students the chance to implement new ways of teaching.

Previously, using technology meant buying expensive and heavy equipment and software. For teachers to implement collaborative learning techniques using technology, or to make the

classroom more interactive, meant buying interactive smartboards with the software and equipment, which was very expensive. Learning and developing their computing skills meant going to expensive training or waiting their turn to be enrolled in the Ministry training facilities, which are not often available.

Now, from teachers experiences and examples, social networking, Web 2.0, mobile applications and accessible software and hardware have helped them overcome this obstacle. Examples of this include instead of waiting for the school budget to approve using an SMS facility provided by one of the telecom companies to inform the students' parents of useful information and emergency situations, teachers used the free WhatsApp application to communicate with parents. Instead of waiting for the school budget to buy interactive smartboards for the students to enjoy interactive and collaborative exercises, they used the free JClic software, or used affordable wireless mice. Instead of waiting for the school to provide the Internet in classrooms, teachers used the Internet in their phones and connected it with projectors to present videos or educational websites. Instead of paying for training or waiting for the supervisor to approve their training, the teachers learned from open resources on the Internet and attended virtual training using programs like PalTalk that are free and accessible. Modern technology resources afforded teachers ways to solve their problems and find creative methods to meet their and their students' needs.

## **7.4 Discussion**

This chapter highlights the effect of technology in terms of paving the way for the teachers to learn and develop, and to implement new practices in their classrooms. The teachers gave examples of the distance-learning offered by universities and how this helped them overcome obstacles that had previously prevented them from learning. They also gave examples of online resources and the ways they opened channels for individual development and learning anywhere from different people all around the world, including other genders, in their context. Furthermore, they discussed using technology in their practice in a way that enabled them to use new teaching methods and to share and learn from each other. The chapter demonstrates that technology enabled teachers to use technology in their practice by being available and accessible to them.

In this section, drawing on the findings from sections 7.1, 7.2 and 7.3, I answer the second research question, which is:

## 2. How does the use of technology enable Saudi female teachers to change their professional experiences?

The teachers' experiences of using technology presented some different ways that technology resources offer Saudi female teachers' affordances to learn, communicate and improve their teaching experiences alongside their students. It is worth mentioning that most technology resources discussed in this chapter are used globally. They were imported from outside the Saudi context to offer in some cases distance learning or more communication options, and some are used in classrooms. Some of these technologies are designed to serve different purposes than the ones they are used for in this specific context. In this chapter, I discuss technology affordances that were localised by Saudi female teachers to serve their own needs, in addition to the ways technology affordances, being flexible and customisable, enabled the teachers to shape it according to their beliefs and the wider society.

Section 7.1 and 7.2 outlined how technology enabled Saudi female teachers to learn and develop in many different ways. The teachers discussed how technology enabled them to overcome some policies and circumstances, reducing the gap in experience between them as female learners and other, male learners in this context, and enabling them to learn individually. They cited many examples: for example, technologies used to deliver distance learning, social networking, Web 2.0, and different internet-based software.

The distance-learning advantages mentioned by the teachers in this study are noted in the literature, as mentioned in section 2.5 and 3.2 where some studies have been presented addressing the advantages associated with distance learning (e.g. Albalawi, 2007; Al Lily, 2011; Al-Khalifa, 2010; Hussein, 2011; and Mirza, 2007): for instance, making learning enjoyable and accessible to many students, allowing students with family or employment obligations to continue their higher education, and giving the students the option to study and attend lectures at a time and pace that is suitable for them. Al Lily (2011) also documented a specific social advantage of distance learning in that it helps in overcoming some gender segregation challenges in higher education by making communication between both genders easier. Moreover, it also affords Saudi women the opportunity to pursue their education while taking care of their other domestic responsibilities, and to overcome some of the mobility problems they are facing (Al Lily, 2011).

Teachers' experiences of distance learning supported the findings of these studies, citing the advantages of distance learning that enabled them to continue their education while working as full-time teachers and being responsible for their families. The flexibility of distance-learning programmes lies in a number of factors: managing study time, easy access to resources and virtual classrooms, free location, and the flexibility in administration policies that gave distance learning the affordance that many Saudi students needed. Sohila mentioned that distance learning saved them the challenge of leaving work and physically attending university. Fadwa added that universities that applied distance-learning programmes are more flexible regarding some of the rigid rules that are usually enforced.

Furthermore, the teachers stressed that technology helped them overcome training problems (see section 6.2.3) by providing numerous options to learn and develop. Instead of waiting for their supervisors to put forward their names to attend training in the Ministry, they used internet forums and open resources to learn and develop from different people while at home or at work.

The teachers' experiences in this chapter not only showed the ways technology affordances opened new methods of learning and teaching, it highlighted times when affordances are determined by social and cultural structures. In the distance learning example, when female Saudi students chose to use the chat option to communicate with their lecturer and not use the audio option, they demonstrate a technology affordance that is being shaped by local customs and beliefs. This is consistent with the work of Johnson and Wetmore (2009) in that despite the advantages that technology offers by opening new avenues of communication, technologies do not always reinforce change but in some cases are intertwined with social values making them more concrete and permanent. In this example, disabling the audio option for female students made the construct that the female voice is '*awra*' more salient (see section 2.1 and 2.2 presenting literature about Saudi women's education and position, addressing the notion of *awra*). It is worth stressing that this social value was presented in the situation by the females, because they did not want to challenge this social value (social position).

Here, females recognised that technology gave them the freedom of choice: they did not need to use the audio option, with which they feel uncomfortable, and the chat option equipped them to be active learners and effective communicators. Male lecturers may pay more attention to the chat option because they know that it is the preferred method of

communication by females, which affords this option more importance than in other contexts. This fits with Gaver's (1991) argument that perception of affordances is determined by the user's culture, social setting, experiences and intentions. In this example, the technical affordance of the distance-learning platform has many ways of communication, including the chat and microphone/voice option, while the technology affordance that is used by female students in this particular context is only the chat option. Therefore, to understand the affordance of distance learning to Saudi female students, we should understand their circumstances and what they decided to use and not to use with this particular technology.

Technology also enabled Saudi female teachers by giving them options as teachers. It provided resources that enabled them to problem-solve some of the challenges they are facing, by providing accessible and affordable resources, and by giving them resources to be creative in their practice. However, all still under what was already acceptable in society. This fits with Oyaid's (2015) findings that using already available applications that are free, accessible, affordable and usable by teachers changed, positively, the views and attitudes regarding using technology in education for both students and teachers. In this case, technology encouraged teachers to develop their technical skills and teaching practices and increased their willingness to remain up-to-date with new innovations in their field. It also encouraged teachers to be self-learners and to take more control in finding solutions to the problems they were facing.

Section 7.3 concentrated more on teaching with technology and the ways technology affordances enabled teachers to use new methods in their teaching. It shows the positive effect of technology being accessible in the teachers' experiences. This mirrors Alshwaier *et al.*'s (2012) study that concludes that the multi-media support that technology offers to teaching and learning has made it more appealing and beneficial to both students and teachers. Moreover, Oyaid's (2015) study states that using technology in classrooms enhanced the sharing of successful experiences between teachers and this increased the sense of collaboration between them.

This chapter shows that the customisable property of technology enables different users to shape it in various ways. Saudi teachers were able to find their ways around technology to make it more acceptable to society, and using technology as a problem-solving tool to overcome some of the obstacles they are facing and to use it according to their needs. This fits with Bakardjieva (2005), who stated that reflexive actors work as agents to create ways of

using technology that have the potential to expand its meanings, producing situated new uses of technology. She states that the experience of technology use is a focal point where the technical, social and subjective meet, proposing new affordances of technology.

Looking at the Saudi context, Al Lily (2013) stated that in Saudi society, technology is used as a problem-solving tool and is being reshaped based on the community requirements and challenges, giving these technologies new values (Al Lily, 2013). Here modern technologies opened new ways for female teachers to overcome barriers, either gender barriers, financial, social or contextual barriers, which gave these technologies new value.

This chapter has demonstrated the following:

- The Internet enables Saudi female teachers to take more control over their learning and development through eLearning, social media and Web 2.0
- Smartphone applications and social networking are enabling Saudi female teachers to communicate and learn more easily across gender lines
- Technology use enabled Saudi female teachers to use new practices in their classrooms that enhanced interaction, collaboration and enjoyment for themselves and their students
- The affordability and accessibility of technology and the fact that it can be customisable enabled teachers to benefit from technology and to use it in their daily practices
- Technology affordances may enable different practices and in some other cases reinforce established constructs and positions
- The study shows how technologies that are widespread all over the world are being shaped and localised by the teachers to serve their needs and how this gives technology affordances a social impact.

In the following chapter, I return to the teacher. I explore the outcomes on teachers' lived experiences as a result of teachers enabling their own use of technology in their practice (first research question), alongside technology being accessible, affordable and customisable according to their needs and positions (second research question).

## **Chapter 8: Ways Technology Changes Saudi Female Teachers' lived Experiences**

This chapter presents some of the findings and its interpretations to help answer the third research question:

3. How does the use of technology change Saudi female teachers' views of their lived experience?

Chapters 6 and 7 outlined how the teachers enabled the use of technology in their practice. The two chapters demonstrated that the teachers took an active role in the use of technology by identifying their needs, taking responsibility and improvising solutions. These chapters also revealed how technology has helped the teachers by being adaptable, customisable and convenient to their needs and beliefs. This chapter highlights the impact of the use of technology on the teachers' lived experiences. It goes beyond their experience with technology as a problem-solving tool on to ways the use of technology affected teachers' capital, their sense of agency, and their realisation and confrontation with certain aspects of their realities, in addition to ways in which it had an effect on the teachers' identities.

Firstly, section 8.1 presents the role that technology played in changing the way Saudi female teachers viewed their own feelings, their own personal benefits where technology opened new channels that enhanced their sense of agency. Conversely, section 8.2 highlights the struggles and challenges that teachers were experiencing, and clarifies that it is not the disadvantage of using technology, but rather, the associated challenges that became more noticeable to teachers with the use of technology. Section 8.3 discusses the impact of both enhancing agency and confronting challenges on the teachers' different capital and identities. I found the notion of agency and different kinds of identity presented by (Gee, 2000) helpful to understand teachers' change of experiences with the use of technology, and return to this in section 8.3.

As in the previous two chapters, this chapter draws on the data from the interviews and focus group sessions, including the discussions between the teachers and the written statements on the Ketso leaves. Again, some of the data in this chapter have been used in previous chapters. The relationship and development of codes, categories and themes are presented in Table 7, section 4.3.7 p. 100. According to the table, the chapter draws on the categories *More Control*



*over Teaching and Learning* and *More Control over Communication*, which feed into the theme *Enhancing the Sense of Agency*. The categories *More Challenges as Teachers* and *More Challenges as Learners and Females*, feed into the theme *Becoming More Aware of Reality*. The chapter includes sections according to the two main themes:

- Enhancing the Sense of Agency
- Becoming More Aware of Reality
- Discussion

## **8.1 Enhancing the Sense of Agency**

This section relates to sections 7.1 and 7.2, which presented technology affordances regarding opening new channels for Saudi female teachers to use new methods in their teaching, learn from different sources and communicate with different people inside and outside their society. In this section, I highlight the outcome of these affordances on teachers' positions in society, and the ways it affected teachers' feelings together with the way they perceived their own experiences and realities. By giving them more control regarding reaching others, in addition to sharing information and learning, the teachers enjoyed using new teaching methods, which enhanced their self-satisfaction and the feeling that they are up-to-date. Furthermore, they improvised and localised technology to suit their needs and create new positions to ensure they have more control over their lives, which enhanced their sense of agency and empowerment.

Firstly in this section, I want to revisit the literature pertaining to the relationship between technology and human agency (discussed in section 4.1.4). Here human agency is defined as the capacity of human beings to act differently from predetermined ways identified by social structures (Sewell, 1992; Emirbayer & Mische, 1998). Boudreau and Roby (2005) connect finding new ways of learning with agency, stating that “informal improvised learning”, whereby people learn from each other, does enhance human agency. Exploring the ways teachers find in technology to overcome challenges, and share tips, knowledge and informal training, which are not usually sponsored by any organisational authority, to be able to learn, demonstrates an emphasis on their agency. However, technology use does not always enhance agency, or provide freedom for its users. Bakardjieva (2005) has developed a holistic framework of the user as an agent in the field of technological development and the shaping of technology, which suggests a more nuanced representation of a technology user's agency

(see section 4.1.4 for more studies addressing agency and technology use). She viewed technology use experiences not as technology offering an absolute freedom or increased agency, but as a product of the specific encounter between technology and typical human projects arising in social situations. Bakardjieva suggests that her framework helps to balance “the uniqueness and recurrence, the freedom and constraints, the originality and replication that transpire in each individual act of technology use” (2005, p. 34). That means that technology use is a product of an interaction between technology and human projects in a specific context. In some cases this product enhances agency and empowers users and in some other cases it does not.

The theme *Enhancing the Sense of Agency* includes two categories: *More Control over Teaching and Learning* and *More Control over Communication*. The category *More Control over Teaching and Learning* includes two codes: *Liberation from Traditional Teaching* and *More Control over their Development*. The category *More Control over Communication* includes the codes: *Overcome Transportation Barriers*, *More Communication Options* and *Easier Communication across Gender Lines*.

In the category *More Control over Teaching and Learning*, in focus group sessions, the teachers identified the positive impacts of using technology by using the yellow leaves in Ketso, citing examples of using technology in their classrooms. Some of the advantages they stated were linked to students, students’ families and the educational process as a whole. In this section, I concentrate on the direct personal advantages that teachers mentioned after using technology in practice. Below are some examples of the statements made by the teachers when identifying technology advantages:

Table 18: Example of Ketso statements on advantages of using technology for teachers

Translated leaf	Original Arabic leaf	School name
Good motivation and good personal benefit since I am keeping pace with technology and development	حافز جيد و عائد علي شخصي كوني أواكب التطور و التكنولوجيا	Dal
Gives me confidence	الثقة	Dal
Keep up with the times and understand and know what is going on around me	مواكبة العصر و فهم ما يدور حولي	Alef
Access to self-development	الحصول على تطوير الذات	Alef
Breaking the boring routine	كسر الروتين الممل	Alef
Enlightenment	التنقيف	Baa
Improve the level of performance	تحسين مستوى الاداء	Dal, Baa

In both interviews and focus group sessions, the teachers explained that technology offered the opportunity to move away from the traditional teaching that they described as “routine” and “boring”. In some cases, they used the word “hate” to describe their feelings regarding teaching prior to the use of technology. Sohila described using technology resources to escape the dull, routine work and move into a more enjoyable process of teaching.

I can prepare lessons electronically, but to write on paper - no, I hate it. One day the head teacher asked us to prepare a folder of our achievements through the year. I told her, ‘please, I will handle this folder but electronically, but don’t ask me to present it in the usual routine way. I want to present it in a different way’. I did it in a way that took me three days. I used PowerPoint with hyperlinks, added sound and effects, although it would have been easier if I had just printed it out, but I like to present my work using technology. It gives me more satisfaction. (I; Baa; Sohila)

أنا ممكن أحضر حصص الكترونيا بس أكتب على ورق زي دفتر التحضير لأنا أكره دا شي. في يوم طلبوا مننا ملف انجازات قلت للمديرة معلش أنا عندي ملف انجازات بس الكتروني أنا مستعده أقدمه لك ، أنا أبغاه أقدم شغلي بطريقة أخرى غير الشكل الروتيني الورقي فسويت سي دي . تعبت و جلست ثلاثة أيام أزبط و أنسق الباوربوينت و ضفت أصوات و ارتباط تشعبي عشان أقدمه بشكل أفضل. ما عندي مانع أتعجب شوية بس أقدم شيء بالتقنية يرضيني

Sohila’s experience as a teacher changed after using technology. She did the same duties and responsibilities that she was always being asked to do as a teacher, but in a more interesting and creative form that satisfied her. Technology gave her the chance to explore new ideas,

learn individually, and test new practices with her students; this liberated Sohila and gave her more control in her classroom.

In three schools, teachers stated that after using technology they felt more liberated: freedom from repeating the same curriculum in the same way over the years, freedom from routine and dull practices, and freedom from the Ministry's rigid rules. Trying new ways of teaching using technological resources in their classrooms gave them the feeling that they are keeping up with development (see conversation between teachers in Baa school regarding this matter in section 7.3, p. 177).

In Alef school, Raja stated:

I will tell you one word, honestly, I have been teaching for 20 years with the old way of teaching and recently I tried using technology. I noticed that integrating technology in education gives the teacher the advantage of less effort and it attracts the students' attention. Education without using technology, I don't consider it education. (FG; Alef)

شوفي أنا ههنا كلمة، صراحه شوفيني درست 20 سنة بالطريقة القديمة. لاحظت انه أي دمج للتقنية في التعليم يعطيك أقل جهد و يشد انتباه الطالبات. صاروا الطالبات يحبوا الحصة. أما التعليم من غير تقنية أنا ما أعتبره تعليم

Furthermore, teachers noted that using technology increased their sense of collaboration with other teachers, which enabled them to share their ideas and experiences. Teachers organised in-school training in their own school between each other and attended each other's classes even without someone asking them to do so. They said that by using technology, they created a positive sense of competition between them to come up with creative ideas and new practices which reinforced collaboration between them with a positive effect on their experience as teachers. This mirrors Boudreau and Roby (2005) for whom informal learning enhances the sense of agency, as the following focus group exchange shows:

Sara: Technology made teachers get closer to each other by sharing and exchanging skills and new ideas in teaching.

Hanan: If a teacher learns a new skill, she offers to teach us this skill without our asking her to do so.

Abeer: Although in-school training is time limited, it has a great effect on our skills. (FG; Baa)

سارة: استخدام التقنية قرب المعلمات لبعض و زاد روح التعاون بينهم عن طريق مشاركة في الأفكار و المهارات التقنية

حنان: اذا معلمة اتعلمت شيء جديد في التقنية لحالها تيجي تعلمنا من غير ما نطلب منها  
عبير: مع ان التدريب داخل المدرسة وقته ضيق و لكن بنستفيد منه كثير

Before technology, teachers found it difficult to escape the routine and the rigid Ministry rules. Teachers who wished to develop and be creative, found it challenging to do so. Through technology, they found themselves up-to-date, exploring the affordances of technology in their classrooms and collaborating with other teachers. This made teachers change their practice inside their classroom, which altered their overall teaching experience. The teachers revealed that they do not have control over their curriculum, nor the Ministry rules, and many other aspects of their experience, but on the other hand they had freedom to try new practices in their classrooms with their students. This gave them the space to try new technology affordances that they found helpful and that liberated them from their old perceived position as being trapped in a boring routine to a new position of teachers being creative and informed. This is similar to the findings of Oyaïd (2009) (see section 3.4 regarding the experiences of teachers using technology in Saudi schools), who found that both male and female teachers that she visited in Saudi schools were using technology in their teaching practice and expressed positive views about their experiences. The most common advantages were that technology changed the boring routine of the traditional ways of teaching because of its capability of presenting information in many ways (Oyaïd, 2009). Oyaïd also added that teachers expressed the idea that technology saved them time and effort and they used it outside the classroom to communicate with their students via email, mail groups, bulletin boards and, in some cases, the teachers' own websites (2009).

Teachers explained how, since using technology, they have become more open to the world and have expanded their horizons. They are now able to learn about different practices from all around the world by being connected. Sara from Baa school described it as “positive communication” with the world, while Ghada added:

Ghada: I feel technology made me open to the world around me by searching what other teachers are using. It opened my horizons.

غادة: أحس التقنية وسعت مداركي و جعلتني انفتح على العالم من حولي

They provided different examples of how great it felt to be able to learn without waiting in the training queue or being rejected for enrolment on courses, programmes or training because of their status or age. They stated that it takes only the press of a button to reach what they needed to learn (see section 7.1.).

There was a shared understanding between teachers that one of the most important reasons for learning technology is to be able to communicate with new generations: either with their students or with their own children. Lamia in Baa school, stated:

Being up-to-date is important so that we know what is happening around us, especially when dealing with new generations. I feel they are open to learning and use new technologies and we need to understand what is going on. For example if a student came and told you she uploaded a picture in Instagram, you need to know what Instagram is. (FG; Baa)

مواكبة التطور و كل ما هو جديد من حولنا مهم جدا خاصة مع الجيل الجديد الي منفتح على التقنية و العالم  
فلازم احنا نفهم و نتعلم ايش الي صاير حولنا. مثلا لما طالبة تيجي و تقولي انها نزلت صورة في الانستجرام  
لازم أكون عارفه ايش هو الانستجرام

Teachers, during interviews, expressed a belief that employing technology was not about creating PowerPoint shows and presenting it to the students. They noticed that these presentations stopped attracting students, and Sohila stated that she did not use the ready-made PowerPoint shows that are sold in the libraries. She stressed that a teacher should not use technology blindly and without thinking of why she is using it:

In my lesson I might need only one video clip, but to present what is already in the book does not make sense to me, as we can read it directly from the book, but if I want to add extra things like a prophet's saying or a video, we can use technology in part of the lesson. (I; Baa; Sohila)

ممكن في درسي أحتاج فقط مقطع من فيديو واحد ، أما اني أعرض الي في الكتاب و هو أصلا مكتوب في  
الكتاب أمام الطالبة شيء غير منطقي خاصة الطالبة تستطيع أن تقرأه من الكتاب أمامها ، أما اذا احتجت  
أستدل بفيديو أو حديث فممكن أعرضه

Teachers in Baa school explained how their integrating technology practices changed over time, starting with using PowerPoint to show the whole lesson to using it less and adding other resources that do not always have to be technology (see section 7.3, p.176, for the

conversation between teachers regarding the development of their use of technology in their classrooms).

Teachers in Dal school shared the same perspective that integrating technology was not about presenting a PowerPoint presentation and leaving it to the teacher. The role of the teacher is so important and can never be replaced by a presentation. Moreover, it is necessary to use technology resources in part of the lesson and use them wisely. This shows that teachers' practice using technology is developing and changing according to their previous practices, new needs, their developed skills and reflections as teachers.

Kinda's story of her supervisor shows that integrating technology is not about presentations and using technology during the whole lesson but to use technology in a meaningful way that can be in the beginning or at the end of the lesson or a teacher can skip using technology if the lesson does not need it (to read Kinda's statement in section 7.3, p. 175).

Regarding their learning, Fadwa expressed that she felt great when she enrolled in the distance-learning course and how she saw it as an opportunity to prove to herself and others that she can do it; "the feeling was so amazing that I cannot describe it". After more than 20 years waiting to study for her bachelor's degree, distance learning allowed Fadwa to achieve her goal (Fadwa's experience with distance learning was discussed in section 7.1). She was liberated from regulations and policies that prevented her from continuing her education. She was also free from time restraints, since she was a full-time teacher and had passed the age of registration. Of course, Fadwa stated that it was not easy to be a full-time teacher and a student, in addition to her own responsibilities as a wife and a mother. However, she enjoyed pursuing and achieving her dream and now wants to complete her master's and PhD.

However, Fadwa's change in experience of being liberated by continuing her education was not due solely to technology. If the universities that applied distance-learning programmes had the same policy of age restrictions, Fadwa would not be able to continue her education, even with the technology available. However, my argument is that technology affordances (in this case distance learning) allowed this opportunity to arise (see section 7.1 for more details). Technology offering a channel to receive education that can be obtained from home in a person's own time, with the high level of communication that it provides, offered many Saudi female teachers chances and choices that were really hard to have without technology. Therefore, it gave them more control over their situations, and that increased their agency.

Haneen's experience with training is another example of the conflict between policies and teachers' ambition and how by using technology and learning individually, she was liberated by offering alternative ways of learning. Haneen shared her experience of wanting to learn to activate the smartboard but because of obstacles created by her supervisor, she could not attend the training offered from the Ministry (see section 7.1). After finding alternative ways of learning through the internet, she had the opportunity to collaborate with people and learn. This increased her feeling of achievement and that she can overcome the obstacles she is facing without wasting her time.

With my personal effort of communicating with other people through social networking I was able to activate the smartboard. I found dealing with people in social networks much better than dealing with the Ministry, supervisors and Ministry training centres. People in social networks are very collaborative. When I open Facebook, Twitter and YouTube I find most of the things I need. I found that acquiring what you need through the official way is not effective. You know the path is in front of you, but if you want to go with the official route you have to wait and all your work must stay on hold. (Int; Alef; Haneen)

اجتهادي الشخصي بالتواصل مع الناس عن طريق وسائل التواصل الاجتماعي قدرت أن أعلم و أفعلا لسبورة الذكية. لقيت التعامل مع الناس عن طريق وسائل التواصل الاجتماعي أفضل من التعامل مع الوزارة و الإدارة و مراكز التدريب. الناس في المواقع جدا متعاونين ، لما أفتح على الفيس بوك و لا تويتر و لا يوتيوب بألاقي أغلب الأشياء الي أحتاجها موجودة هناك . لقيت وصولك للي تبغيه و تحتاجيه بطريقة رسمية غير مجدية . عارفه الطريق قدامك تبغيه بطريقة رسمية ممله لازم تنتظري و أمورك كلها تتوقف

Haneen added:

By using technology, we overcome the obstacles we are facing. Rather than waiting and wasting my time for someone to solve the problem, I have to solve the situation by myself.

نحن نتجاوز العقبات, اما اني اجلس أستنا و أضيع وقتي لازم أحل الموضوع من نفسي

Here, Haneen learned from other teachers and people she met online, she did not learn from technology, but technology offered her a channel to reach these people in a way that was not available before the use of technology. Technology liberated Haneen from waiting to learn and to achieve the things she wanted, giving her faster alternative ways to reach what she needed without being trapped in a long process and regulations. It also offered her a channel



to reach other teachers from whom she benefited. This gave Haneen more control over her development and empowered her to achieve her goals without waiting for permission.

One of the challenges associated with training is travelling to the training centre. The teachers noted that the school did not provide transportation to the training centre. Therefore, they needed to ask either their husbands or drivers to take them (for more information about transportation barriers, see section 5.2.5). One of the main changes in teachers' experiences since using technology is that online learning saved them the inconvenience of leaving their houses, thereby giving them greater control over their learning.

One of the statements in the Ketso leaves said "positive communication with the world". The use of the word "positive communication" indicates that they believe that not all communication is beneficial, and being exposed to other cultures and norms is not always something positive.

When talking about using WhatsApp to communicate with their students' mothers (see sections 6.4 and 7.2), teachers used phrases like "woow, it is amazing" and "It is much easier now", which indicate that teachers found in this technology a way to achieve their need of reaching mothers in an easy and effective way. In this situation, instead of teachers waiting for mothers to come to the school, who may face challenges reaching their daughters' schools to attend parents evening (transportation problems), or the fact that not all mothers have computers to communicate via email. In WhatsApp, they had a tool that gave them and the mothers more control over the situation by offering them communication affordances to suit their situations and needs.

According to the teachers' experiences, this use of technology afforded teachers more control over the situation. They overcame the policy and cultural limitation of women not being able to commute freely from place to place, they overcame the economic limitation of not being able to afford the Internet and computers at home, they overcame the limitation that the school does not have an established system to send messages to all parents, plus they took it further by finding ways to motivate their students.

The teachers' use of WhatsApp had an impact on students' mothers who represented society. Mothers are Saudi females who are part of the Saudi society. Any effect on them from this activity affects society as well. Mothers at home are becoming more engaged in the school environment without leaving their homes or work places. They have access to information

and news from their daughters' teachers and created relationships not only with the teachers but with other mothers as well. Teachers, conversely, are taking more of the school (public) sphere with them to their home (private) sphere by taking school work and relations with them to their home through their WhatsApp groups on their phones. Here this practice is not only changing teachers, mothers and students but also affecting the public/private spheres in society. The merger of the school/home spheres has both advantages and disadvantages. Teachers said that they are being disturbed in their private family times by mothers continually asking questions through WhatsApp.

According to Bakardjieva (2005), technology transcends certain limitations of the users' situation and opens spaces for meaningful individual and collective actions and creativity. Therefore, they can be adapted to empower ordinary people. The teachers and mothers did support one another, as well as the students and daughters. The teachers discovered the potentiality of the technology (WhatsApp) that has a positive impact on their experiences as teachers and others involved by creating virtual community based on real-life positions.

The teachers also discussed that, with modern technology, it is easier than ever to reach Islamic scholars. They gave an example of using Twitter to follow Islamic scholars that helped them to verify and filter the information they receive from other technology sources like WhatsApp and Facebook about them. They viewed this advantage as a way to filter the information they received from other technology recourses and to be up-to-date with the scholars that they follow (to see the conversation between teachers regarding this point, see section 7.2, p. 171).

Taking more control over communicating with other people in society is not something from which only females benefit. Male and female Saudis are experiencing more control over the news they are reading, are able to verify sources of knowledge, and can have more direct contact with Islamic scholars, writers, and thinkers.

In Chapter 7, I presented the ways technology helped teachers learn from both female and male lecturers through forums, YouTube videos, Twitter, Facebook and websites. Haneen's experience learning and communicating with male teachers through forums was very difficult, since schools are segregated and it is not socially accepted to talk to males; "it is very hard socially to communicate and deal with men". However, technology has made this much easier and possible. She also described her experience as amazing and that she is benefiting

from people in social networking spaces more than anyone else (see section 7.2, p. 171, to read Haneen's experience of learning from the forum manager).

Before modern technology, both female and male teachers developed experiences and skills, but it was hard for them to share their experiences. Modern technologies like forums, Facebook and blogs reduced this gap and opened new channels for both male and female teachers to discover each other's experiences and benefit from each other. Haneen and other teachers now have more control over this kind of communication than was not previously possible.

Teachers tend to use the word "easy", or phrases such as "technology is amazing", "it opened new ways" or "technology helped me", which indicates that before the use of technology, it was hard, not only taking effort and time, but also because of social and cultural barriers associated with it. However, after using technology things became easier. Here 'easy' indicates achievable, and adaptable to teachers' needs. It indicates that technology is allowing teachers to use it in an easy way that increased their sense of agency and gave them more control over their situations.

In all three focus groups, the teachers were asked to write on Ketso leaves the positive experiences of using technology.

Table 19: Example of Ketso statements of the advantages of using technology

Translated leaf	Original Arabic leaf	School name
Conveying information in a better way for pupils	توصيل المعلومات بطريقة أفضل للتلميذات	Alef, Baa, Dal
Reinforcement of information when using technology	ترسيخ المعلومات عند استخدام التقنية	Alef
Raise motivation for learners	اثارة الدافعية لدى المتعلمين	Alef, Baa, Dal
Joining enjoyment with benefits	المتعة و الفائدة	Alef, Dal
Identify and know what others have of science and skills	التعرف على ما لدى الاخرين من علوم و مهارات	Alef
Increasing our information and knowledge	اضافة معلومات جديد	Alef, Baa, Dal
Positive communication with the world around me	التواصل الايجابي مع العالم من حولي	Alef

Examples in this section reveal that finding solutions enhances the sense of agency for both teachers and mothers in this situation. Therefore, there are some aspects of their experiences over which teachers do not have control. For example, they cannot change the rules of transportation, pay families to have computers and internet access at home, or ask the Ministry for budgets to provide other technological solutions to reach their students' parents. However, they can control their own use of technology (Chapter 7). With the technology affordances available (Chapter 8), they managed to gain more control over the situation. In this case, technology use empowered and liberated the teachers by making them find ways around their realities and the factors they cannot change. This fits with Al Lily (2011), who stated that Saudi women regard the internet as an empowering tool that enables them to interrupt the hierarchal order based in the society, and provides more courage to

communicate across gender lines, with policy makers and society, to support their struggle to gain their rights (2011).

## **8.2 Becoming More Aware of Their Reality**

This section demonstrates challenges teachers shared connected to their use of technology. It comprises the theme *Becoming More Aware of their Reality*, which includes two main categories: *Challenges as Teachers* and *Challenges as Learners and Females*. Although many of the challenges presented in this section existed prior to the use of technology, technology use made teachers more aware of it, since by using technology, teachers created new positions for themselves. These new positions made other realities more salient and made teachers confront them in their daily routines.

The category *Challenges as Teachers* includes the codes: *Inaccessible Resources*; *Teachers Work Overload*; *Training Problems*; *Lack of Appreciation* and *Ministry of Education policies*. The category *Challenges as Learners and Females* includes the codes *Language Barrier*; and *Power Struggle*.

Although teachers were conscious to not challenge society and to localise technology in a way that fits the society of which they are part, in the following section, teachers demonstrate their experiences of being pushed back by society into old positions or positions they are not satisfied to take. In many cases, this made teachers feel frustrated.

### **8.2.1 Lack and Inaccessibility of Resources**

The main challenge teachers are facing is the lack and inaccessibility of technology resources. The code *Inaccessible Resources* is considered one of the main problems teachers faced since they started using technology. This challenge is not because of technology itself, but it is a reality and a circumstance that has become more lived and apparent in teachers' experiences after they decided to use technology in their teaching; this challenge has a direct impact on the teachers' experience.

The experiences of teachers regarding lack of resources in three schools are almost identical. The teachers dealt with poor school infrastructure, lack of basic technology resources, and unavailable maintenance services in their schools, and in some cases they cannot access resources that are available in their schools that they are not allowed to use (see Chapter 7). Teachers wanting to integrate and use technology in their practice came in contact with the

fact that their schools lack basic infrastructure needs, there was a long and routine process from the Ministry to provide any support, and only limited school budgets. This problem is due largely to policies that are neither implemented, understood, followed nor activated. Consequently, the teachers suffered from bureaucratic process and lack of response from the Ministry to their needs. It is worth mentioning that lack of resources and bad infrastructure existed before teachers used technology, this situation was there with and without technology use.

The code *Inaccessible Resources* connects to the code *Taking Responsibility* in section 6.3 in Chapter 6, where I demonstrated the ways teachers dealt with lack of resources, by taking responsibility for buying and providing any kind of technology that they needed to use in their practice, and improvising creative ways to use the available technology resources in society, which subsequently imposed financial, physical and time-consuming pressures on teachers (see section 6.3 for more details of teachers taking responsibility). In this section, I examine the outcome and changes in teachers' experiences after taking responsibility of providing the necessary resources, and confronting the challenges placed on teachers, which became more visible after deciding to use technology.

Inaccessibility of resources changed the experiences of teachers by making them confront a reality. A reality that there are written policies to support the use of technology, there are Ministry and government plans that they read and hear about (see Chapter 4 for more information about the projects), but in the field, there are only teachers paying from their own money to provide their needs of technology resources. The use of technology made teachers live the gap between written policies and implemented policies.

Since teachers took responsibility for supplying their schools with technology resources, the lack of resources affected teachers' financial capital. As mentioned in section 7.1, teachers' financial capital and social position allowed them to take responsibility in providing the resources they need. But on the other hand, teachers stated that using or not using technology in practice will not increase their salaries or change their job grade. Therefore, the money they spent on their schools will not be rewarded back as an increase in salary or better job position. From the teachers' discussions and the level of frustration they showed regarding spending their own money for their schools, it can be demonstrated that the practice of teachers spending their own money on technology is being challenged. This may be due to the changes in the economy regarding individual spending in Saudi. Therefore, teachers were

eager for policy makers and the Ministry to hear their voices and start taking the responsibility that they have borne for several years. It is clear from their discussions that they were frustrated with the situation and needed a change.

In Baa school, a conversation took place between the teachers Sara, Lamia and Ghada that showed how a lot of lesson time is wasted for the teacher in plugging and unplugging equipment since the equipment is not provided in the class. The conversation is in section 6.3 p. 137. The way Lamia commented when Ghada said that she did not pay for a worker to hang the projector in the classroom, Lamia replied, “yes Ghada we did pay him, but because of all the things you pay the school, you forgot what you paid”. The comment made all the teachers in the group laugh, it revealed the level of frustration that exists, and the amount of money and effort teachers are spending in order to use technology in their practice. Again this problem is not because of technology, it is a system problem, but the use of technology by the teachers changed the experiences of teachers, making them confront this system problem on a daily basis.

The teachers asked critical questions of why the Ministry is not providing these basic things for the schools. This conversation took place in Baa school among the teachers. It started when Hanan asked Sara to consider what she paid for the school as charity. Sara replied:

Of course we consider it charity, but the government is supposed to supply all these things we are buying.

أيوه طبعا صدقة بس الحكومة هي الي مفروض توفر كل هذه الأشياء الي احنا بنشتريها

Hanan was convinced and agreed with Sara by stating sarcastically:

Yes, the education budget is not small.

ايوه بس ميزانية وزارة التعليم ماهي قليلة

Lamia replied:

The education budget alone is equivalent to other countries' entire budget.

ميزانية التعليم لحالها نفس ميزانية بلاد بأكملها

Sara then replied in an angry tone:

Then why, why, why up to now do we have to pay for everything, bad school infrastructure? Why up till now are there schools in rented buildings? Why are there not buses to take students to and from the school? Why ... why... there are a

lot of whys that we don't have answers to. It's all words on paper, no real achievements

طبيب ليش، ليش البن دحين لازم ندفع كل شيء احنا للمدرسة، ليش البنية التحتية للمدارس تعبانة ، ليش البن دحين في مدارس في مباني مستأجرة ، ليش ما في باصات للطالبات تجيبهم للمدرسة، ليش و ليش و ليش ، في مره كثير ليش ما عندنا أجوبة ليها . كله كلام على ورق بس في الحقيقة ما في أي انجاز

This discussion shows the high level of frustration among teachers. Moreover, it demonstrates that teachers are not passive but compare policies and budgets spent on improving education and their own realities. They are asking questions to demonstrate their awareness of the situation.

In Dal school, Abeer said:

We have seven printers in the school, we cannot access any one of them. We need to print outside the school. And we have one photocopier that also we cannot use. (FG; Abeer; Dal)

عندنا سبع طابعات في المدرسة ما نقدر نستخدم و لا وحده نحتاج نطبع بره المدرسة و كمان عندنا آلة تصوير بس كمان ما نقدر نستخدمه

In Alef school, teachers said that there are some resources that are available but there are not enough to everyone to use.

- Gadeer: The equipment is available but it's impossible to serve everyone in the school.
- Sara: Now, the equipment is being used by the administration only.
- Gadeer: No equipment has been provided or maintenance to the equipment that are was already used.
- Samira: There is not even a chair for the teacher in the classroom.
- Gazal: Even the air-conditioning; we pay to fix it.
- Gadeer: I am telling you, these problems you will find in all other schools.
- Sara: Even in other regions and cities across Saudi Arabia, you will find the same problems. (FG; Alef)

غدير: الأجهزة موجودة و لكن يستحيل أن تفي بجميع المعلمات

سارة: حاليا الأجهزة تستخدم من قبل الادارة فقط

غدير: و لا أجهزه توفرت و لا يوجد صيانة للأجهزة الموجودة



لميا: اذا كرسي للمعلمة في الفصل لا يوجد

غزل: حتى المكيف أحنا نصلحه على حسابنا

عزيزة: أنا أقولك هذه المشاكل تلاقيها في كل المدارس

لميا: حتى في المناطق و البلدان المختلفة في السعودية تلاقي نفس الموضوع

The teachers stated that their experiences will be found in other schools across the country. And that the lack of resources and poor infrastructure is a common experience among many other teachers. This is similar to other studies in the literature, such as Al-Furaydi (2013), Aldossari (2013), and Oyaid (2009), that have similar findings regarding teachers struggling with the low level of support given to them from the Ministry regarding integrating technology into their practice, the bureaucracy and the widespread domination of autocratic school management that hindered change and innovation. In their studies, they stress that the teachers reveal one of the main obstacles facing those wishing to use technology in their practice, which is a lack of providing technology resources for teachers and their students and bad school infrastructure.

It is clear from previous sections that the teachers used their own money and time to achieve new positions of using technology in their practice and being up to date with new practices. However, it appears that this new position required further alteration. Consequently, teachers were dissatisfied with their positions and fell short of ways to develop their and their students' situations. They were desperate for the Ministry to intervene and take responsibility for providing what they needed in their classrooms, and to be aware of the extent of hard work these women put in on a daily basis to be able to use technology in their practice. As a result, teachers became more critical and began questioning why the Ministry, which had a large budget, was not undertaking these responsibilities. This conversation is an example of the dissatisfaction teachers are feeling: one teacher said in a focus group, "*Consider it charity*" when talking about the amount of money teachers are spending for their schools. However, others did not agree and questioned this statement: "*Yes, we do believe in the importance of charity but we are an organisation that has billions in its budget to serve. Why do we have to give charity from our own money to a government organisation*"? This shows that the teachers are being critical of their reality and the information they are receiving regarding ministry budgets.

### 8.2.2 Teacher Work Overload

Other experiences faced on a daily basis that became more apparent after using technology included teacher work overload. Teachers shared their experiences being overloaded and burden with tasks, responsibilities, large student numbers in classrooms and many more (see section 5.2), which prevented them not only from using technology and being creative but also from enjoying teaching as a whole.

The teachers believed that the extra tasks that were asked of them did not have any positive impact on the educational process, and placed a great deal of pressure on the teacher. Taking part in different activities and jobs that are not always connected to teaching, makes being a teacher always time-consuming. But having access to technology and feeling the need to develop, be updated and conduct new practices made the teachers more aware of the unimportance of these small jobs and how time-consuming they are.

The teachers were struggling with the number of lessons they needed to teach per week since some were taking more classes than they are supposed to take. One of the main reasons for lesson overload is that the Ministry did not provide enough teachers to cover the large number of students and classes in the school (see section 5.2.1). These factors have a negative effect on teachers' ability to use technology in their practice as mentioned by Haneen. Haneen expressed the opinion that they all needed to develop new practices and ways of teaching using technology, but the lessons overload was one of the main obstacles for integrating technology. Lamia in Baa school stated that her heavy schedule in school prevented her from going on training courses and developing her skills, since she could not afford to miss all these classes. Haneen said regarding this issue:

Why does the Ministry not provide enough teachers to teach and be in charge of different subjects in the school?! Place under this question a red, green and a black line because it will not get solved... By the way, I take responsibility for my words.

لماذا الوزارة لم يوفرنا معلمات لتدريس جميع المناهج ؟ هذا السؤال حطي تحته نقطة حمراء و خضراء و سوداء في النهاية لأن الموضوع لن يحل... أنا أتحمل مسؤولية كلامي

Haneen stating that “I take responsibility for my words” proposes that one must be brave if these kinds of questions were to be asked, because that would suggest that there is a problem in the Ministry system. Since the teachers were taking financial responsibility to supply their schools with technology resources plus their own individual effort to learn and develop on

top of teaching more lessons than what they are supposed to teach (see Chapter 5), all this enhanced the feeling of being overloaded. This made the teachers ask these kind of questions though they knew that the only answer to it is a problem with the Ministry system.

It is worth mentioning, that teachers being overloaded was not due to technology use, as it; did not place pressure on teachers. But technology use changed teachers lived experiences by making them realise the importance of developing their teaching methods through the use of technology, the importance of learning new skills and trying new practices. This came in conflict with other duties that they were being asked to do that they realised did not enhance the teaching or learning experience.

This is consistent with Oyaid's (2009) study done of teachers' experiences using technology that documented the issue of work overload and the lack of time in both male and female teachers' experiences using technology in their teaching, particularly in the case of the managerial roles placed on teachers. Aldossari (2013) shows that teachers in government schools face a large number of students in each class, with up to 40 pupils being taught by one teacher. This supports the study finding that when teachers expressed their struggle with the overload of work tasks, especially the ones that do not connect to their teaching, and the large class sizes and how these factors have negative effect on their use of technology.

By using technology, the teachers are experiencing the opportunity to increase their cultural capital; they have the opportunity to learn, develop and try new practices that can change their teaching experience (see section 8.1). Tasks like photocopying, extra lessons, huge number of students in one class and many others, serve only to hinder teachers and push them back to their old position.

### **8.2.3 Lack of Appreciation and Opportunities**

The teachers' experiences changed after using technology when they realised that the efforts they are making to enable their use of technology (see Chapter 6) are not recognised or appreciated in the system of which they are part. Section 5.2.2 presented teachers' experiences of not being appreciated, and the fact that the Ministry system did not recognise their hard work with an increase in salary or job grade. The Ministry's resistance to change and updating their job grade policies had an impact on teachers who are creative with big ambitions, who struggle with the Ministry policies for not recognising their hard work.

Again, technology use was not the reason behind teachers being unappreciated, but teachers being creative and who spent effort learning and implementing new practices in their classrooms using technology lived the experience of not being appreciated. Technology use made them realise the problem with policies, resulting in feelings of frustration.

The teachers' use of technology did increase some of their cultural capital (8.1), but did not enhance some aspects of their incorporated cultural capital nor their economic capital. Making an effort to use technology and being creative did enhance teachers' skills and knowledge, but it did not increase teachers' incorporated cultural capital in that they did not receive any certificates of achievement from their schools or the Ministry, and it had no impact on their job grades. Furthermore, it did not enhance their economic capital since using technology or being creative in any way did not increase teachers' salaries or getting any financial rewards. But using technology did enhance teachers' symbolic cultural capital, since teachers viewed it as a good deed. They stated that they are making all this effort because God can see them and they will be rewarded, if not in this life, then in the afterlife.

#### **8.2.4 Ministry Rules**

It appears that using technology made teachers confront more the Ministry's rigid rules and policies that they cannot debate or discuss. Some of the policies were described by teachers as outdated, while others regarded them as very aggressive and blocking creativity and development.

Sohila noted that she had freedom to use whatever she wanted and teach in the way she thought best. Teachers in Dal school also said that they had freedom in their classrooms, but they also noted 'lack of freedom' as one of the struggles they were facing. They gave an example of the lack of freedom that gave them a general feeling of frustration and hindered them of using technology.

Solafa: We feel frustrated.

Aziza: From the huge amount of requests, from Ministry policies and everything we get is from our own money.. We do feel frustrated specially from the policies that creates frustration.

Researcher: Can you give me an example of something that made you feel frustrated?

- Gazal: Solafa, come on say it.
- Solafa: I cannot talk about it.
- [Everyone laughed]
- Gazal: Really we feel frustrated at work
- Solafa: For example, when using technology, I know a male teacher who created a group with his students, they take pictures of their achievements in the classroom and he gives encouragement to his students. Now, the Ministry has a policy that prohibits any teacher to take any pictures inside the classroom, which created a high level of frustration to the teacher and his students. They made the teacher to sign and now he cannot do this practice anymore
- Gazal: They need to discuss the issues that made the Ministry prohibit this practice. The policy came after some of the clips where shared and spread out of the learning process. But they need to discuss the positive and negative sides and how we can use the technology in a positive way.
- Solafa: Now they are completely prohibited. Now the teacher cannot create any video clips with his students at all
- Gazal: Any problem happens, they take a decision and that's it. (FG; Dal)

غزل : الواحد شاعر بالإحباط

ندى : من كثر الطلبات و قرارات الوزارة و كل شيء على حسابنا الخاص.. يوجد لدينا احساس بالإحباط و خاصة قرارات تجيب الاحباط

الباحثة: ممكن نعطوني مثال على شيء ولد احباط عندكم

لميا: غزل خلاص قللي لها

غزل: ما أقدر أقول

الباحثة: هاهاها

عزيزة: من جد أصبحنا نحس بالإحباط في العمل

غزل: مثلا من طرق استخدام التقنية أعرف واحد معلم عامل جروب مع طلابه يصور مشاركات الطلاب و الحوافز الي يعطيهم هي.. دحين نزل قرار من الوزارة ممنوع التصوير تماما و هذا ولد احباط للمعلم و

الطلاب.. يجعلوا المعلم يوقع تعميم و الان لا يستطيع عمل أي مشاركة مع طلابه في هذا المجال لأنه وقع تعهد انه ما هيصور أبدا

عزيزة: الموضوع يحتاج مناقشة لماذا تم المنع، هذا القرار طلع لان يوجد مقاطع خارجه عن التعليم نشرت و لكن يجب مناقشة ما هي السلبيات و الإيجابيات للموضوع و كيف ممكن الاستفادة من التقنية بشكل ايجابي

غزل: الان ممنوع التصوير بتاتا فلا يستطيع عمل مقاطع فيديو مع الطلاب أو أي نشاط مع طلابه

عزيزة: مفروض يوجد اتحاد معلمين يناقشوا المشكلة.. للأسف لا يوجد اتحاد معلمات ليكون في صوت للمعلم و المعلمة لدى الوزارة. مش بس أصدر قوانين و أقول للمعلمين وقعوا و خلاص.. لازم يعرفوا ايش صاير في الميدان

غزل: أي مشكلة تصير يصدر قرار صارم و انتهى

This example occurred in a boys' school with one of the teachers who wanted to use technology in a certain way. This resulted in an aggressive policy issued by the Ministry, forbidding taking pictures in schools. This demonstrates that the struggle with the Ministry's rigid rules and closing any chance of discussion was happening in both girls' and boys' schools. In this example, teachers were frustrated because there was no avenue for discussion, and that the ministry put new policies without any consultation, the teachers' role was only to implement these policies. Solafa needed to be motivated by her colleagues to share her story of being frustrated by the Ministry. Initially, she said, "I cannot talk about it". This shows that criticism of the Ministry is not a regular occurrence. Eventually, she opened up about her frustration regarding the Ministry policies and the way they deal with teacher and technology drawbacks.

The teachers had experienced using technology in their classrooms and experiencing the benefits of technology affordances, then due to a policy, these affordances were taken from them without the chance for discussion. The teachers, by using technology, created new positions for themselves, but because of policies, they experience losing these advantages. This placed together teachers with a feeling of frustration and unwillingness to develop or try anything new.

The teachers also made a comparison of different Ministry reactions. They said when something goes wrong from the teacher side, we find the Ministry very fast in applying policies that are concerned largely with forbidding actions. But if teachers need something, or they need a policy update for the benefit of teachers and students, then the process becomes very slow, often taking years to change and implement. Teachers gave examples of the

Ministry not responding to their struggles and requests. Teachers in Dal school showed their frustration for not applying Ministry policies that are in their benefit and that they have no power regarding this issue.

Samira: We had delegates from the Ministry for school equipment. They come and give promises to provide us with what we need but it's all a mirage [people use it in Arabic to describe something not real]. They told us that every six teachers in the school should have a computer and a photocopy machine.

Researcher: Is this a policy from the Ministry?

Nada: We are not sure, but if the Ministry delegates said it, so it is supposed to be true.

Samira: We were so happy, we even divided each other into groups of six from excitement. They didn't provide anything, a year passed and other delegates came again to the school, they asked 'what is the equipment teachers need?' And the same thing happened again: they took a list of the equipment we need and nothing happened.

Nada: It's all words on paper, no real achievements.

Gazal: Even if we don't have a chair for the teacher in the classroom.

سميرة: احنا بيجينا مندوبات من التجهيزات المدرسية من الوزارة، يوعدوننا و نلاقيه سراب. قولوا لنا كل ستة معلمات مقترض من الوزارة تعميم أن يكون عندهم جهاز كمبيوتر و آلة تصوير

باحثة: هل هذا التعميم موجود من الوزارة

ندى: ما نعرف بس إذا المندوبات قالوا يعني أكيد موجود

سميرة: فرحنا و قسمنا نفسنا كل ستة مع بعض مع الفرحة و الحماس ههههه. مرت سنه و ما صار شيء و جات مندوبة ثانية من الوزارة و نفس الكلام سألت إيش تحتاجوا و كتبت و نفس الشيء ما صار و لا شيء

ندى: كلام بس على ورق لا أجهزه توفرت و لا الات تصوير

غزل: اذا كرسي للمعلمة في الفصل ما في

This discussion shows that teachers are not sure of their rights or the policies that may benefit them as teachers. When Nada replied that she was not sure if the Ministry delegates' promises were actually supported with a clear policy that gives teachers a right to have these

technology resources. Teachers were confused and not fully aware of the Ministry policies regarding supplying technology resources to the school and to the teachers.

In Dal school, when asked to find solutions using the green leaves, the teachers suggested electing teachers in each educational centre in the district to be the link between the school and the Ministry.

Aziza: They are supposed to have from each education centre in each district an outstanding teacher who can join the voices of teachers in each region. When they meet these teachers' representatives, they present the main points that teachers find important to the Ministry to tackle it. This way the Ministry can know what is happening in the field with the teacher.

Researcher: Do you think the teachers are ready?

Gazal: They are all ready to take this step.

Solafa: For example, Sara can be the official speaker, this of course will happen after the agreement of the teacher and all other teachers.

Gazal: By elections.

Solafa: Of course, this will only happen if there is flexibility from the Ministry.

Sara: We want someone to hear our voices.

Aziza: This is originally an Islamic principle, the principle of consultation and allegiance.

Sara: The minster must go down to the field.

Hala: The regional officer, for three years, used to come to schools and sit with students and teachers and listen to their problems.. But then nothing changed.

Sara: OK, you say that our voices are not heard! No, our voices are heard but nothing changes. Open the Ministry website, and see the amount of complaints.

Hala: There is a direct website to the Ministry for people to write their complaints and their opinions.



Aziza: But there are people that stand as a barrier between us and the Minister.

Hala: I just said a direct website to the Minister.

Aziza: OK, there are some things that reach the Minister and others that don't. The most important are the people who works under the Minister. If they go, then the barrier will go and things will get better.

عزيزة: مفروض يختاروا من كل مركز تعليمي معلمين متميزين يستطيعوا جمع أصوات المعلمين من كل منطقة.. عندما يجتمعوا يتم عرض أكثر نقطة اجتمع عليها كل المعلمات للوزارة لحلها. هكذا الوزارة تستطيع أن تستشف ماذا يحدث من الميدان من المعلمة

أنا: هل المعلمات مستعدات

غزل: مستعدات كل الاستعداد

لميا: مثلا تكون سارة المتحدثثة الرسمية و هذا طبعا يكون بعد موافقة المعلمة و موافقة الجميع

غزل: نعم بالانتخاب

لميا: طبعا هذا اذا كان في ليونة من قبل الوزارة

سارة: نحن نريد أحد يوصل صوتنا

عزيزة: هذا أصلا مبدأ اسلامي و هو مبدأ الشورى و البيعة

سارة: لازم الوزير ينزل الميدان

هاله: أمين المنطقة لمدة ثلاثة سنوات كان يجتمع مع الطالبات سنويا و يسمع منهم مشاكلهم و طلباتهم.. كان يختار طالبات أو الادارة ترشح طالبات و يجلس معهم حوار مفتوح و كلها تتكتب و لكن بعد كده ما في شيء يتغير

سارة: يعني تقولوا صوتنا لا يوصل لا صوتنا يوصل و لكن لا يوجد شيء يتغير.. افتحي موقع الوزارة و شوفي كمية الشكاوي

هاله: في موقع مباشر للوزير نفسه الناس يحطوا شكاويهم و آراؤهم

عزيزة: و لكن في ناس يوقفوا حاجز بين الوزير و المجتمع

هاله: أنا اقول موقع مباشر مع الوزير

عزيزة: في أشياء توصل و أشياء ما توصل بس أهل سي الناس الي تحت الوزير لو راح هذا الحاجز يصبح الوضع أحسن

Technology use made the teachers come in contact with these policies and bureaucratic ways. They lived the experience of being hindered and blocked because of these policies and lived the effect of policies on their experiences and their students as well. Here teachers are being pushed back by policies and bureaucracy to their old positions that they tried hard to overcome. This made them feel frustrated and start asking for reforms and real changes in their situation.

### 8.2.5 Language Barrier

After starting to use technology, the teachers came face-to-face with their English language capabilities, which created a barrier to learning and developing their practice. After using technology, they found that being skilled in English was very important and that it took double the effort to learn and take advantage of what is out there with only limited English language skills.

Table 20: Example of Ketso statements regarding lack of Arabic resources

Translated leaf	`Original Arabic leaf	School name
Lack of Arabic resources	عدم توفر مراجع باللغة العربية	Dal
Few Arabic resources	قلة المصادر العربي	Alef

Teaching English language in Saudi schools used to start in year seven. Recently, the Ministry approved to start teaching English from year six in primary schools. The late start to learn English and the minimum number of classes per week (only one class per week in year six) means Saudi students lacked many English skills, even after graduating from school. For teachers, their lack of English capabilities became apparent when they began learning online.

The fact that English language is the dominant language online and that most educational resource, software and many instructions are displayed in the English language, this helped the teachers realise that English is the key for them to discover new practices and skills from other communities that increased their willingness and need to learn the English language. Also the lack of Arabic programmes, help facilities, websites and online Arabic training contributed to the frustrations the teachers had about their lack of English language abilities. Their lack of English language abilities was linked to Ministry resistance to change the policy of not teaching English until year seven, which had a significant impact on teachers' English skills.

Fadwa explained that she had fears of computers in the beginning because of the language barrier, but her ambition and will to use technology made her find solutions to be able to learn. She reflected:

After I bought my first computer, I was depressed while using it because I failed and repeated again and failed and repeated until I learned. I explored programs and what each program does and how I can use it in my practice. For English programs I use software called 'Wafi'<sup>25</sup> that translates from English to Arabic. I place all English instructions in 'Wafi' and move step by step until I reach programs that I can benefit from. (I, Fadwa, Dal)

بعد ما اشتريت أول جهاز كمبيوتر ادمرت نفسي و أنا أشتغل عليه لأنني أخطأ و أصيب و أخطأ و أصيب ، يعني ما اتعلمت الا بالخطأ و الصواب. أنا عندي حب للتقنية ، لما كنت أدخل على الانترنت أروح على مواقع البرامج ، هذا البرنامج ايش يسوي و هذا البرنامج ايش يعمل، و الي بالانجليزي أروح على برنامج مترجم اسمه وافي عشان يترجملي ، الي أن اصل الى برنامج يفيدني

She explained how it took her longer when the programme or the instructions are in English, citing Prezi as an example.

I want to explore Prezi, they said it is nicer than PowerPoint but since it's in English, they don't have the Arabic version. I need a holiday to sit and learn it. It will take a lot of time since I will use Wafi for translation to translate everything in Prezi to understand how to use it.

الان أبغى أكتشف بريزي لان قالوا انه احسن من باوربوينت ، دحين همتي عليه بس مشكلته انه كله بالإنجليزي ما في معرب فيغالي وقت طويل غالبا في الاجازة عشان أفهم فلابزم استخدم المترجم وافي

Haneen also mentioned the English language as a barrier when learning from the Internet or using smartphones because most of the icons are in English. She added that she needed to overcome this barrier and not allow it to stand in her way.

I am an adventurous person, I search, although most of the icons and instructions are written in English language, but I don't let my language abilities stand as a barrier. I try since I am not a kind of person that stops. If I did something wrong, I try it again (I;Haneen;Alef)

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<sup>25</sup> Al-Wafi Translator is an English/Arabic translation software for advanced users and professional translators.

<http://golden-al-wafi-translator.software.informer.com/>

أنا من النوع الي أغامر أدخل و أبحث مع أن أغلب الأيقونات و التعليمات باللغة الانجليزية و كانت تقف الي حد ما عقبة قدامي و لكن بحاول أغامر لأنني لست من النوع الي يقف و خلاص اذا غلطت غلطت و أحاول من جديد

Although Fadwa was an Islamic studies teacher who usually had strong views about learning Arabic and adhering to the Islamic values and culture, she still criticised the Ministry policy of teaching English only from year six, stating that it should be taught from year one. She gave examples of other Gulf countries that teach English to children from a young age and how the children master both Arabic and English. She added:

I felt how language can be an obstacle to learn and develop. Look at people – they want to learn - even if their financial capabilities are low, they pay thousands of riyals to go to English centres to learn, even if he borrows from others to be able to go. Why is teaching English language not provided in our schools from young age? Now life is hard, people don't have extra in their salaries to spend, but still people want to learn and develop, why do the Ministry make people take these courses and pay a lot; why won't the Ministry support people by offering English from young age?

أنا حسيت كيف ممكن اللغة تمثل عقبة أمام التعليم و التطور. شوفي الناس بيغوا يتعلموا، حتى إذا إمكانيات المواطن المادية ضعيفة تلاقيه يدفع آلاف الريالات في معاهد اللغة يحاول يدرس إنجليزي حتى إذا يستلف من الناس. طيب ليش ما يتوفر في مدارسنا منذ الصغر نتعلم إنجليزي ليش لأ؟ ليش يضطرونا اننا ندفع على معاهد ؟ خاصة الحياة أصبحت صعبة ، يعني الواحد يدوب يكفيه الراتب الي بيأخذه ، ليش الدولة ما توفر هذا الشيء للمواطن في المدارس

Fadwa criticised the Ministry and the educational system for not providing an education to Saudi citizens that was equivalent to their needs and the challenges they face currently. She used the word 'why' to present her frustration with the Ministry for making many Saudi students pay thousands of riyals to learn skills they were supposed to and could have learned in school.

In the focus groups, the teachers did not discuss their lack of English skills, but they did talk about the lack of available Arabic resources on the Internet.

Mona: I wrote one of the obstacles is lack of Arabic resources.

Hannah: Yes, every time I look online I find amazing resources for teachers but it is all in English.

Sara: Even when I look for training, most of the links I find are advertisements for face-to-face training. You don't find online training in Arabic.

Mona: They need to make more effort to provide good Arabic resources for teachers to benefit from it. (FG; Dal)

منى: أنا كتبت في المعوقات عدم توفر مصادر باللغة العربية

هناء: أيوه ، كل مره أدور أونلاين ألاقى مصادر رائعة للمعلمة و لكن جميعها باللغة الإنجليزية

سارة: حتى لما أدور على دورات، معظمها روابط لإعلانات عن دورات وجها لوجه

منى: لازم يسووا مجهود أكبر لتوفير مصادر باللغة العربية لتستفيد منها المعلمة

In Baa school, the teachers stated the difference between English and Arabic learning websites was that English websites tend to be more interactive and cheerful. They were critical about the reasons for the lack of Arabic resources and emphasised the need for more effort to be made in this area. They also stated that they found a lot of interesting class activities, amazing resources and online trainings, but these were mostly in English.

Since most of technologies and resources used in the Saudi context were imported from outside the Arabic region and were mostly in English language. This placed pressure on its users to increase their English language skills to be able to learn and get exposed to different resources. From Fadwa and Haneen's examples, we saw that they did not allow their language abilities to stop them, but this lack of ability took a lot of time and effort, which frustrated them and many others as well. Using technology also placed pressure on the Ministry to update their policies and recognise the need to start introducing English from a younger age. Teachers were unsatisfied with their own lack of English abilities, blaming their own learning experiences that did not allow them the chance to learn it from a young age. This challenge is being lived mostly by the male and Saudi female teachers who were educated in public schools, since both boys and girls schools started teaching English from year seven and only recently from year six. It will be worth exploring whether male teachers are experiencing the same struggle.

Oyaid's study is similar to the findings of this study, which documented that teachers complained that most educational and technology resources available online were in English, which most teachers had not mastered: they asked for more Arabic online resources.

### 8.2.6 Power Struggle

Some of the teachers' stories and experiences revealed a power struggle between themselves, their ambitions, needs and beliefs, and other people, either in the school environment or from their family, husbands or even social norms. The following examples highlight how technology had brought Saudi teachers face-to-face with a power conflict, while technology was opening new horizons and options for teachers. However, at the same time, it was putting them in conflict with, in some cases, society, traditional beliefs, the hierarchy that was created for female teachers' new challenges.

Fadwa and Haneen mentioned their husbands in their interviews, thus revealing some aspects of the power hierarchy that exists between men and women in this context and the ways technology made women challenge it. When discussing her experience of studying for her bachelor degree online (see section 7.1), Fadwa explained that her husband was very supportive when she enrolled on the programme. She said he supported her to finish her bachelor degree alongside any further development she wished to undertake.

I am very grateful to God that I have a husband who supports me. In the beginning when he saw me tired from studying and working he told me, 'just forget about studying, you don't need to tire yourself, just leave it', but then he saw me determined and that I have ambition, so he said, 'as long you want to do it and you see yourself as able then I will support you'. He didn't have a problem when I needed more time for studying. This is a blessing because if the man constrains you or brings you frustration, you will not be able to do anything. (I; Fadwa)

أحمد الله أن زوجي بجاني ، مرات أكون تعبانه فزوجي يقول "خلاص لا تتعبي نفسك ، خلاص سيبني الدراسة" بس لما يشوف ان عندي طموح و رغبة يقول " مادام انت تبغي و شايعة نفسك قادره طيب الله معاك" ما كان عنده مشكلة لما كنت أحتاج وقت للدراسة ، ما عنده اشكالية و الحمد لله. هذه نعمة لأنه اذا كان الزوج يحبطك و يقيدك ما تقدر تسوي و لا شئ.

Conversely, Haneen's husband supported her to continue her university education, but in some cases he was not willing to change his views regarding her learning and communicating with other, male teachers in educational forums. This made Haneen feel as if she is in a daily battle with him or with the cultural beliefs as a whole.

I consider a Saudi woman a Jihadist, Jihadist, Jihadist (Warrior)... she is Jihadist, it's enough that she is forbearing and dealing with the Saudi man. I am not saying that all Saudi men ... but most of them are hard to deal with. It's hard for them to accept a range of things that have become at the present time essential. Like dealing with men, me as a woman, my husband is forbidding completely that I communicate with any man that I can benefit from in the field of technology or any other field. There are many other women living in the same situation. Although if you meet any of them you will say he is very open-minded but in reality when you live with him he is not. He says 'No means No.' [This is an Arabic expression which means there are no ways of negotiation, the decision has been made.] That is why I say that Saudi women are Jihadist. I don't say that all Saudi men are like this, some of them are amazing and understanding, but there are still a group that stand as a barrier to the rise of the Saudi female teacher. (I; Haneen)

المرأة السعودية مجاهدة، مجاهدة، مجاهدة.. يكفي تحملها الرجل السعودي، أنا لا أقول كل الرجال السعوديين و لكن غالبهم يصعب التعامل معهم. يصعب اخضاعهم لمجموعة من الأمور أصبحت في وقتنا الحالي أساسية. أنا كإمرأة زوجي رافض رفض تام اني اتواصل مع أي رجل ممكن يفيدني في مجال التقنية أو أي مجال آخر ، غيري كثير من النساء في نفس هذا الوضع. مع ان اذا تقابلت معهم تقولي انسان جدا متفتح و منفتح بينما في أرض الواقع عندما تعيشي معه (لأ يعني لأ ) لهذا السبب أقول المرأة السعودية مجاهدة. أنا لا أقول كل الرجال السعوديين و لكن يوجد مجموعة متفهمه و مبدعه و رائعة و لكن في مجموعة ما زالت تقف عقبه في طريق صعود المعلمة السعودية. الرجال

Haneen's example differs from Fadwa's in that when looking at Fadwa's story, she did not really challenge any societal constraints. Although she studied with male lecturers and students, it was conducted in a virtual environment that used the chat option to communicate only with the lecturer. In addition, she did not need to leave her house to receive this education. On the other hand, Haneen challenged her husband's views, which brought her face-to-face with the power conflict. Although being in social networks and dealing with different people benefited Haneen's development, it also placed her in conflict with her husband's beliefs and orders that did not allow her to communicate with any other, male teacher. Haneen's example highlights the power conflict and lack of agency encountered by some women. Using the "No is No" expression, which is usually used to stop young children from asking for things their mothers disapprove of, reveals the lack of agency for these women. Using it with a grown-up woman gives a clear view of the level of power conflict and control over these women. Now Haneen had experienced how technology had opened new doors for her, but at the same time she was experiencing the pressure placed on her from

her husband to use it according to his beliefs and ways, not hers. Based on cultural reasons, the husband prevented Haneen from being involved in an activity she found very useful. Here, technology is transformed from a liberating tool to one that brings women in direct conflict with other people who have authority in their lives.

Fadwa saw her ‘understanding husband’ as a blessing from God. She stated “if the man constrains you, you will not be able to do anything”. This shows clearly the power of men over women in this context. A big part of women’s success and development depended on the understanding and support of men. If this support was not there, a woman would be very limited in what she could actually do. Consequently, Haneen used a metaphor describing herself and other Saudi women as warriors. After experiencing the affordances that technology allowed Haneen to do and the collaboration of fellow teachers whom she discovered as helpful, and in addition, instead of waiting to be enrolled in a training, she had control and agency over her development by using resources that she has access to use. In this case, Haneen’s husband closed the channel for her to learn, develop and communicate with others in this certain way. Since Haneen is aware of the power dynamic between male and female in her society, she had to adhere to the rule set by her husband. Therefore, she saw herself a warrior of doing so.

### **8.3 Discussion**

To answer the third research question, I concentrate on the relationship between the teachers and their perceived realities, rather than presenting them as realities-in-themselves. This fits with phenomenology (see section 4.1.2), which views reality from the perspective of human experiences, rather than reality itself (Verbeek, 2005, p. 112). Connecting this view with technology use, Verbeek (2005) explains that technology can strengthen specific aspects of the reality perceived by its users, while weakening others. From this standpoint, this chapter explores the ways technology amplifies certain aspects of the teachers’ reality, either by enhancing their sense of agency or increasing the feeling of frustration.

Oyaid (2009) linked the opportunities and affordances that technology offers to the teachers to their positive attitude towards using technology in education. This chapter highlights the impact of technology use on the participants’ experiences of being female, teachers, Saudi and technology users, by linking these advantages to their capital, agency and identity. This



demonstrates that these experiences not only instilled in them a positive attitude towards using technology, but also altered their experience of teaching and living within this context.

The question is, when does the use of technology enhance agency, when does it move from being a tool, to be a meaningful tool, to be a tool that empowers and changes experiences and the identities of people involved? Bakardjieva (2005) states that for technology to have a meaningful and empowering impact on users in any society or structure, it must be based on a situated rationalisation to transcend certain limitations or to open spaces for individual and collective action and creativity (p. 135). Sewell (1992) states that actors exercise agency through their capacity to control resources and to reinterpret and mobilise these to serve specific goals.

By identifying ‘the possible’ of a specific technology and the rationality of what an ordinary user is trying to do with it (identifying the need), technology use can be empowering and may change the experience of users. In contrast, in the absence of such situated practice based on a need and identifying the possibilities of a certain technology, users will be forced to use technology in a specific way that surrenders to dominant economic and political rationality.

Some studies in the educational technology literature present cases where technology resources are already implemented in classrooms as part of educational reforms and teachers are asked to use these technologies and integrate them with their curriculum to promote a more interactive, collaborative and student-centred learning experience. As a result, in some cases, teachers view technology as a burden, stating that they do not have time to learn and implement these technologies and fail to integrate with new pedagogies. These studies suggest that technology costs governments and schools large budgets without gaining the benefits to students’ attainments and learning experiences for which they were hoping (see section 3.1 addressing educational technology and the challenges associated with it).

In this case, the agency of teachers is removed by school administrations and policy-makers insisting on a fixed translation of integrating technology into education. In many cases, this has failed to complement the cultural and social capital of teachers, thereby making it a burden rather than a liberating tool. Here, the cycle of shaping technology into teachers’ needs and practice is disrupted.

This study is different in the sense that technology use was not suggested by schools or governments, but by the teachers, according to their own capitals and needs (see chapter 7).

The activity of identifying the need, seeking tools or methods to reach this need, then collaborating with others to achieve this need through the affordances of technologies, created meaningful use of technology that gave teachers a space to practice their agency. The teachers are shaping technology according to their social, cultural, and economical capital (see chapter 7), thereby enhancing their agency.

Looking in more detail into the change of teachers' capital after the use of technology in the case of the study participants (see section 6.1). and the outcomes of using technology presented in section 8.1. reveals the different ways technology affects the teachers' capital. The teachers' cultural capital, developed by the use of technology, is open to new methods of development. It moves away from the boring routine by investigating new methods of teaching, testing them in their classrooms and sharing them with others. The teachers' social capital has been developed by connecting to people who were previously very hard to reach, and collaborating with other teachers in virtual environments. Furthermore, the use of technology enhanced their symbolic cultural capital by enhancing the sense of achievement and good deeds that are part of their religious beliefs. It also demonstrated that it saved the teachers' time and made them more independent in their learning, satisfying their own needs and desire for communication. This increase in capital and independence gave the teachers more control over their reality, which enhanced their sense of agency.

But it is not only the teachers' capital that is being affected by the use of technology, the teachers' identity and their sense of self is being affected as well. As mentioned in Chapter 6 and this chapter, the teachers were surrounded by many social structures and positions, some of which were predetermined by the centralisation of the Ministry of Education imposing policies and tasks that all teachers must follow. Some social structures were predetermined by society, including customs, education and the power hierarchy (see Chapters 5 and 6). On the other hand, the teachers created new positions through the use of technology. These new positions affected the teachers' identity.

In the following, I explore a part of the teachers' identity that is connected with their position in society. In addition, I discuss multiple forms of identities, and to make this visible here I borrow Gee's (2000) framework of different kinds of identity; namely, institutional identity, discursive identity, and affinity identity. Institutional identity is the part of teachers' identity that depends on their institutions and location. This type of identity is based on the laws, rules, traditions and responsibilities that are defined by institutions. Discursive identity is based on

the individual recognising their self and their rational identity through discourse and dialogue. Discursive identity will depend on how active or passive one is. Affinity identity is based on a set of practices and experiences shared by a group of people in a certain culture at a certain time (Gee, 2000).

In this study, the teachers shared part of their institutional identity when they said that they were public school teachers, they were females who shared their known responsibilities and cultural rules, and their responsibilities as mothers and teachers, thereby adhering to the Ministry's and society's rules. Another part of teachers' identity that they recognised and shared was their discursive identity. Teachers shared this part of their identity when they stated that they hate routine, that they pay for everything in their schools, and that they love adventure and using new things. They liked to do things differently and were ambitious. This identity connects to the use of technology, since the teachers stated that being exposed to different practices and communities made them realise, recognise and live out this part of their identity by solving their own problems themselves and having more control over their learning and teaching. This helped them see themselves as ambitious and that they love to develop themselves. Also, by paying for everything and facing challenges, the feeling of being trapped and unappreciated, fighting against certain rules in society and the positions imposed on them, has made them live and recognise this part of their identity as well.

There is also their affinity identity that teachers taking part in this study lived and shared. In this study, the teachers lived out this part of their identity by being connected to different teachers groups in forums and in their schools, which shared the same practices and challenges. Technology helped teachers to be proactive and responsible for each other's learning, communication and being up to date.

Using technology had a role in the teachers' understanding of their own identities. The teachers realise more of their capabilities, experience solving their own problems, and develop new knowledge and practices that change the way they view themselves and affect their discursive identities. It also altered their affinity identity by connecting to others through technology and sharing positive experiences and challenges. Being proactive in a group and taking responsibility for learning and communicating, either with other teachers, students, students' mothers and so on, changed their affinity identity.

Conversely, the teachers' institutional identity is not developing or shifting as fast as other parts of their identities. This is apparent when the teachers' experiences demonstrate the power struggle that became more salient after using technology: for example, the Ministry's rigid rules that they cannot negotiate or question, and how some supervisors practice their hierarchical powers to control teachers' teaching styles. This is frustrating and reduces their willingness to develop because part of their identity is connected to being public school teachers encountering a lack of resources and appreciation, and how the Ministry policy hinders their desire to develop and be creative. Some of these experiences were connected to being Saudi and females: for example, some social challenges and privileges. This demonstrates that the institutional identity of the teachers was rigid and not changing as fast as the other forms of identity.

In summary, using technology opened up new positions and forms of identity as recognised and experienced by the teachers. However, due to other factors in society, other aspects of positions and identity remained the same or were moving in different directions. Consequently, part of the teachers' identity was evolving, while the other part remained static and rigid. Therefore, teachers felt frustrated and eager for change. They felt they were pushed back by their institutional identity, which was determined by the laws and responsibilities imposed by society, their schools, some beliefs and their own families, pushed into the positions they held before the use of technology.

The teachers' identity is evolving in different ways. There were occasions, as mentioned in earlier chapters, when teachers created new positions and managed their institutional identity by localising technology and taking responsibility to introduce new practices. By doing this, teachers were changing their own experiences, alongside those of their students and, in some cases, their students' mothers. This changed their self-recognition, empowered them in a way that improved their discursive and affinity identity and will change society and lead to slow changes in their institutional identity as well.

This experience with technology use may be different for other teachers, even those in the same school. The more the teachers develop their discursive and affinity identities, the more they will challenge their institutional identity and social positions. However, in many cases, teachers were keen to preserve some of their institutional identity and social positions, especially those linked to religious duties and beliefs. Nevertheless, some were keen to move

forward and shift some aspects of their institutional identity: in particular, the parts involving Ministry rules and poor implementation of development policies.

In some other examples, the teachers struggled to change or shift their institutional identity and were faced with its rigid rules. Here, they felt they were pushed back and needed to make more effort. This made them view themselves as fighters, frustrated and struggling. The teachers did not manage to change or shift their institutional identities and positions, but by experiencing this, their discursive and affinity identities are shifting in a way that may have a negative effect on their experiences as teachers and females in this context. This is consistent with Bourdieu's view that although actors may have the capacity for autonomous action (agency), the habitus effectively constrains such actions, and even the most improvisational actions still reproduce this structure (Sewell, 1992).

The main points raised in this chapter are:

- The Saudi female teachers' use of technology moved from being meaningful and solving problems to allowing teachers to exercise their own agency and empower themselves.
- Technology use is not always empowering. In some other cases, it contributed to teachers being more vulnerable to the power divide and challenges they face in their reality.
- The Saudi female teachers, through technology use, developed new experiences that resulted in the creation of new positions and identities for the teachers that either empowered them or made them feel frustrated by the obstacles they face.
- Technology use had a role in the teachers' understanding of their own identity
- Technology use affected teachers' different capital .

In the following chapter, I draw together elements from Chapters 7, 8 and 9 to offer a clear position with regards to the study contributions and directions for future research followed by a final summary.

## **Chapter 9: Contributions to Knowledge and Future Research**

The literature on technology use includes a diverse array of empirical and theoretical work. Some fit into gender studies, such as the literature presented in Chapter 2 addressing technology and gender: for example, Wajcman (2004, 2010). Some fit into sociology studies, exploring technological artefacts and society and how they shape one another: for example, the work on the domestication of technology by Bakardjieva (2005) and the exploration of technology, agency and structure in the work of Orlikowski (1992, 2000). Furthermore, some studies have linked technology experiences with other philosophical schools, such as phenomenology (Verbeek, 2005), and Cilesiz (2011), as presented in Chapter 5.

Many of these studies have been instrumental in shaping my empirical analysis and understanding. In particular, regarding the Saudi context and technology studies, the work of Al Lily (2011, 2013) has provided a foundation from which to examine technology and the Saudi context in a way that has moved me from viewing technology as practice, to concentrating on the dynamics between society and technology. Moreover, I have been inspired by the work of Goodson (1991, 1992), which helped me to look deeper into teachers' own realities and voices. Concentrating on teachers' voices led me in turn to phenomenology, something which contributed to the decisions I took regarding data collection methods and the way I approached the data. That is, I have focused on the realities presented by the teachers, practices described by the teachers, and technology as perceived by the teachers.

The nature of the study and the way I approached the teachers (using in-depth interviews and focus groups) gave me the opportunity to explore the daily personal experiences of these Saudi female teachers using technology. It presents not only the use of technology in classrooms, but also the challenges faced by, and the lived realities for these teachers. Furthermore, it has made visible the role teachers play in providing and using technology in practice, the impact of technology on their lives and their students' experiences, and the changes associated with technology use that teachers are living with and experiencing on a daily basis. The teachers' stories and the interactions involving myself, as the researcher, and the teachers have made the voices of Saudi female teachers available for research and policy-makers that highlighted their experiences as teachers, females, Saudis and active participants in the process of technology use. Their personal decision to use technology was motivated by many aspects of their experiences. This situated the study at a more personal angle that highlights different aspects of the teachers' lives.

The remainder of this chapter will discuss what I believe are the main contributions to knowledge that this thesis has made. This includes how the Saudi female teachers are active contributors in the integration of technology into Saudi education, how they are shaping and localizing technology, how in turn this is enhancing their sense of agency, and finally how this process of technology integration is creating new realities for the teachers.

## **9.1 Teachers as Active Contributors to Technology Use**

This section summarises the insight developed by this thesis into the teachers participating in this study who took an active role in the process of using technology in their practice. Their starting point was very much themselves, and the initiative that they showed in using technology in their classrooms practices and to overcome some of the challenges they are facing. Their initiative was what created their technology use experiences.

Based on the teachers' shared experiences, it appears that their experience using technology began with a need that they identified. In Chapter 6 I discussed examples of the teachers' needs that can take many different forms: for example, a need for better communication, such as the need to communicate with their students' mothers, or a need to apply new teaching practices, like the need for more interactive and collaborative lessons. Also, the need can be in the form of a need for development, a need for a feeling of achievement, or a need to take more control of a situation: for example, when the teachers said that they don't want to wait for the Ministry to solve the problems as it usually took a great deal of time and they needed to solve their problems quickly. Furthermore, this study connects the ability of teachers to identify their needs with their different capital. The more skills, knowledge and experience a teacher gains (incorporated cultural capital), the more she can identify her needs. The more motivation, appreciation and ambition a teacher has (symbolic cultural capital), the more eager she will become to identify needs and find solutions. The more connections she has with other people (social capital), the more she can share practicing with others and learning from them (go to section 6.5, to read more about this point).

Next, the teachers took responsibility by getting the equipment/technology that they needed for themselves and shaping the technology that was already available in their society into their practice. The teachers provided equipment: for example, in Chapter 6, I discussed how the teachers provided laptops, projectors, printers, paper, speakers and many more. It appears that the teachers provided the technology, used it to fit their needs, tested it, reflected on their experiences and either reused it or found other solutions, shared their practice with others and

so on. Although they suffered from a lack of resources, lack of appreciation, rigid policies and many other factors mentioned in Chapter 8, they still took the responsibility and the lead in using technology, developed their own skills for using it, and shaped it to their own benefit. By doing this they creating new positions for themselves and their students (read section 6.3 for more details of the ways teachers took responsibility).

Other studies have shown similar findings, Oyaïd (2009) reports that the main driver for teachers' use of technology in Saudi schools was the teachers themselves and their belief in the importance of using technology. Al-Furaydi (2013) mentions that the main de-motivating factor of using technology in Saudi schools was the lack of technology equipment and the poor infrastructure of the schools. In later research done by Oyaïd (2015) she reports that female teachers at university and school level are keen to learn and adapt technology in their practice but rely heavily on their leadership to supply technology equipment and provide support for its use. She also found that free applications changed teachers' attitudes positively regarding the use of technology. The present study confirms the findings of these studies on the lack of support that teachers are having regarding provision of technology in their schools. It also confirms that teachers are the main drivers for the use of technology, and that teachers believe that it is the responsibility of the Ministry of Education and their school management to provide this equipment. This study goes beyond these past studies by showing that the teachers took an active role in fulfilling their needs in technology resources and using it in their practice. They did not rely heavily on their leadership; instead, they took responsibility and used different techniques, which this study presents, like buying equipment from their own money or using their smartphones, or collaborating with other teachers and in some cases the head teacher to pay for equipment or for a technician. It also looks closely at the reasons that made these teachers take responsibility, by connecting their practice of taking responsibility with their different capital.

The first study contribution concludes that the Saudi female teachers that participated in this study played an active role in the process of integrating technology in their practice of teaching and learning. They did this because they experienced the usefulness of technology, which made it meaningful to them. My argument is that to successfully use technology in education, it is crucial that technology use connects to teachers' needs and sense of practicality. In light of this, the study demonstrates that the more teachers can identify their needs, the more they recognise the potential of the use of technology to change their



experiences for the better, the more active and eager they will become in the process of seeking meaningful solutions for themselves and their students through technology.

## **9.2 Teachers Localising Technology**

This section builds on the first contribution. By being active contributors to technology integration in their context, the female teachers contribute to context-specific uses of technology, uses that fit within Saudi culture and society, and by doing that, they localised technology to their own needs and context.

Although technologies can have their own politics, politics that are ‘wrapped’ into technologies and then submitted into the daily practices of people in a society, technologies are not isolated from the social structures where they are ‘inscribed’ (Al Lily, 2013). The teachers used these technologies according to their own needs and practice, in a way that largely did not put them in conflict with society, especially as technology has become more accessible, available, accurate, convenient and customisable in recent years, in addition to many other affordances.

By being creative in their use of technology, the teachers are discovering and trying out new affordances of the technology. In section 6.4, I presented examples of technology that the teachers used that were not designed for educational purposes but were used by the teachers in their practice, like WhatsApp, and the ways they used it to communicate with their students’ mothers and as a motivational tool for their students that gave it new affordances. Also, the example of using the name-mixing software as a way to encourage students to interact with the lesson made the lesson more interactive for both the teacher and the students. Another example of a creative use was when the teachers connected their classroom projectors to their smartphones to display YouTube videos or educational websites for their students in the classroom to overcome the fact that there is no internet provided in the classrooms.

The different uses that the teachers discovered were only used if they were consistent with the cultural, religious and societal values of the Saudi context. For example, in Chapter 7, I presented few examples of teachers using some technology affordances more than others, which was in some cases either because of cultural and religious practices, or because they did not feel comfortable using it, did not find useful or it was not available: for example, when teachers said they used the chat option in the online courses to communicate with their

male lecturer instead of the audio option. They said that it was not acceptable for other, male students with whom they share the same online learning environment to listen to their voices. This gave the chat option a more important affordance since it is the only way female students could communicate with the lecturer. Another example of using the WhatsApp application for professional use, either as teachers or students, was when teachers made WhatsApp socially acceptable to be used in schools and universities by creating a special number that is different than their personal one solely for school and university use.

Through the examples that the teachers shared in this study, it appears that by being creative and discovering new technology affordances they were able to localise and shape technology to overcome obstacles and create new positions for themselves and their students, which served their needs and fitted into the cultural fabric of their context. I view 'localising technology' in this study as a process, whereby the intersection between technology affordances, society and the subjective views and actions of individuals take place to produce a situated use of technology. In the process of localising technology, some technology affordances become disabled, some gain in importance and in other cases, new affordances appear.

The term 'localising technology' is used by Al Lily and Foland (2014) who recommend that to be able to enhance the use of technology in the Saudi educational process, educators should localise technology to conform to Saudi customs. What they mean here by 'localise' is to develop new ways of using technology that fit the social fabric of the Saudi context. Al Lily (2013) stresses that Saudis might use Western technologies in a way that is not only compatible with their tradition and beliefs but also in some cases can reinforce their cultural values. Al Lily in his publications (2011, 2013, and 2014) gave examples of Saudis localising technology into their social customs, and the technology use's effect on the social fabric of the Saudi context, mostly in a higher education setting. Although Al Lily gave a valuable insight into the intersection between technology and Saudi society, his work did not show the personal subjectivity of the person doing the localising, the effect on that person and the reasons that motivated the person to localise technology to fit into the social fabric. This study adds to this literature by highlighting the person, who in this case is the Saudi female teacher and the ways she in which she might localise technology together with the effect this technology use might have on her personal experience. The study does connect to some of the work of Bakardjieva (2005), in which she concentrates on the users of technology as agents in the process of localising technology. Therefore, to be able to show the localising of

technology, we must highlight the technology affordance, the society and the personal subjectivity of the person using the technology to present its situated use. By doing this, the rationale behind using technology and the different roles played by teachers, society and technology in this situated practice can be revealed. This section concludes that the Saudi female teachers involved were localising technology in some cases to create new positions for themselves and to challenge some of the social constructs. Meanwhile, in other cases, they localised it to maintain the social constructs they considered important.

### **9.3 Enhancing the Sense of Agency**

This section builds on the first and second contributions of this study. By being active contributors to technology integration in their context and localising technology affordances to fit their needs and the Saudi social fabric, the Saudi female teachers created meaningful uses of technology which had personal significance to them. Experiencing meaningful uses of technology led the Saudi female teachers to new perspectives. These experiences of meaningfulness and new perspectives may, be important in the development of their agency.

This study shows that the Saudi female teachers practiced their agency and took greater control of their situation. They gave examples of technology uses that gave them an opportunity to move around structures and act in a way that served and benefited them and their students: examples such as the online training and distance learning that offered the teachers a way to overcome the problem of mobility and transportation. Another example is when teachers used technology to find a way to move forward from their old ways of teaching to more interactive and collaborative methods that they implemented in their classrooms. This gave them a sense of achievement and gave them more control over their classroom practices. Another example featured using technology to learn from both female and male teachers through forums, YouTube and other social network applications, which opened to them new ways to learn and develop professionally, overcoming the gender divide and training challenges.

The experiences of the teachers with technology shows that their use of technology moved beyond the point of being meaningful to the point of enhancing agency and empowering them, which also impacted on the teachers' capital and identity. Through the use of technology, teachers improved their skills, knowledge, created networks of shared practices, and felt a sense of achievement and development. Hence, their capital changed, and their identity and the way they perceived themselves and the society of which they are part changed. That

process enhanced their agency. Conversely, if technology is imposed from the top administration level while teachers do not see it as meaningful and it does not fit into the practicality of the everyday practices of teachers, here technology use is imposed on teachers. Therefore, teachers are not practicing their agency. Rather, they are using technology resources only because they are told to use them. Therefore, technology use has a different impact on agency and identity.

Moreover, there is evidence that because technology changed the experience of the teachers, their identity and enhanced their agency, the teachers became more critical. For example, the use of websites, forums and social networking made teachers aware of the fact that their voices are heard but not listened to. Before the use of technology, teachers had problems, but thought that policy-makers and those in charge were not aware of their problems. Following the use of technology, the teachers have the opportunity to send direct emails to the Minister of Education or others in positions of authority. They can read messages posted by other teachers in the Ministry forums and website, in the knowledge that the policy-makers are aware of their realities and struggles. With the use of technology, things became more transparent. The teachers stated that policy-makers know their challenges but, simultaneously, nothing is developing or changing. This led the teachers to become more critical and ask questions of why things are not improving. Being critical is evidence that their agency is being enhanced with the use of technology.

There are studies that looked at the relationship between technology use and human agency. Orlikowski (2000) acknowledged human actors' capacities to use technology and to generate unintended patterns of use to overcome limitations that as a result enhanced their agency. Bakardjieva (2005) observes that for technology use to have a positive effect on human agency, it must be based on situated action to overcome a certain limitation or to open spaces that were not available otherwise. This study shows the experiences of teachers using technology that went beyond meaningful. It presents examples of meaningful technology uses that is situated in specific context that was localised by users that enhanced their agency and empowered them, concluding that a successful use of technology in education goes from meaningful to actually enhancing the agency of learners and educators.

Regarding the Saudi context and females, and their relationship with technology, this study is consistent with Al Lily (2011), who stated that technology opens new channels for Saudi women to overcome some of the challenges they face. He gave the example of how online

learning helped Saudi women gain the education they desire at home without needing to find someone to drive them from place to place, but he did not link it to agency or identity. Al Lily (2014) concluded that there is more research needed that would ask females themselves about their experiences and the consequences of the new dynamics that technology use is creating in Saudi society, something this study is providing to the reader.

#### **9.4 Technology Use Creating New Realities**

In this section, I present another contribution revealed in this study that also builds on the previous three contributions. The teachers' technology use was based on meaningful practices where the teachers localised technology to their own needs, as presented in sections 9.1 and 9.2, which led the Saudi female teachers to new perspectives that enhanced their sense of agency, as presented in section 9.3, but which also created new challenges and realities with which teachers struggled and found frustrating.

The study shows times when the teachers realised the conflict between their developing identities and agency and other realities about which they felt frustrated. The teachers became more aware of their willingness to develop, they knew what they needed and had the competences and agency to solve their own problems. They became critical and frustrated with policies, economical barriers, cultural rules, bad school infrastructure and social positions that did not help them but, in some cases, hindered them from solving their own problems (for more information about challenges teachers are facing, go to sections 5.2, and 8.2). They started viewing themselves as achieving and creating new positions and realities that changed their experiences as teachers and women living in this context. This created conflict with other realities and identities that are tied to Ministry rules, power dynamics and what is acceptable and not acceptable in their society, which was more static and did not change as fast as the other parts of teachers' identity. This conflict between different identities and realities made the teachers more aware of their realities, struggling and feeling frustrated.

The teachers gave examples of technology affordances that they saw as useful but were blocked for many reasons. By these affordances being blocked, teachers felt frustrated and became vulnerable to power struggles. In section 8.2, I presented examples that teachers shared when they felt frustrated. I made it clear that these challenges were not disadvantages of technology use but they were experiences that the teachers experienced which became

more salient after their use of technology. We can see this when Haneen's husband did not allow her to communicate with other, male teachers in the forums, something that she found very frustrating especially as she learned from these teachers. Another example is found when teachers experienced the benefits of using technology in their classrooms but then were not supported by their schools administration and the Ministry by supplying the resources they needed and found themselves paying for all the resources plus other things like printers, paper, ink and photocopying.

Technology use having both empowering and challenging effects on the experiences of people was discussed in other studies. Bakardjieva (2005) says that if the use of technology was not based on a situated realisation of the benefits of technology and ways it helps the person using it in a specific time and place, that means that the technology use was forced for other organisation or social reasons, this will have a different effect on human agency. It will not enhance agency but rather place pressure on the user. Orlikowski (2000) acknowledges that the experience with technology use is so diverse that it made it difficult to generate a theoretical mechanism that explains the effect of using technology on human agency. Al Lily questions the effect of modern technology on Saudi women, questioning whether technology really opens new ways for them or whether it reinforces rules and makes it more static. He gave the example of e-learning, which had the big benefit of females studying from their own houses, but he wondered if this would make the idea of females staying at home and reducing the mobility of women leaving their houses more static. This study adds to this conversation by giving real examples of female teachers experiencing both the effects of technology, giving them new opportunities, empowering them, enhancing their agency and sense of self, but also creating new struggles and realities for them.

This study raises questions that cannot be answered due to the scope of this study. For example, this project showed that Saudi females see technology as an empowering tool that enables them to study and attend training from their homes. It helped them overcome some of the obstacles they face, some of which are faced by women worldwide: for example, being mothers and, in some cases, living in rural areas. Moreover, some of these obstacles are specific to the Saudi context, such as women not being allowed to drive. When looking at this from another standpoint, does technology serve to overcome the problem by giving alternative options while leaving the real problem unsolved? Does technology give Saudi society a pain-relief pill without finding and curing the illness itself? Did technology make

women eager to find solutions only through technology instead of asking for change in their realities? Does it serve to hinder women in asking for their rights by giving them alternative solutions, or is enhancing agency through the use of technology the first step for change? These kinds of questions require further research.

## **9.5 Ketso Contribution**

The study also makes a methodological contribution in the form of a new use of Ketso as a research methodology. Previous uses of Ketso have been anchored in participatory research, where questions around the ownership of knowledge, co-production of knowledge, and returning knowledge to its origins are being asked (e.g. Furlong & Tippet, 2013; Whitworth et al., 2015). But in this study, I explored using Ketso with Saudi female teachers that suggest that Ketso can have some unique benefits as a qualitative data generation method.

A first benefit, which derives from its origin in participatory research, is the inclusive quality of Ketso. The only way that individuals' can participate in Ketso is to actually contribute their views - and this acts on the group level as well. Using 'standard' focus group methodology, individuals or the whole group may be unwilling to discuss their views with others or some more confident group members may dominate the discussion. With Ketso, there is less opportunity to be a silent participant. All the Saudi female teachers in the Ketso sessions were prompted to action by writing their views on the different coloured leaves. Ketso is inclusive, also, in the way that participants contribute to the process of clustering similar data. They do so by positioning the leaves on the Ketso felt tree structure, according to similar ideas.

Another benefit of using Ketso, is having a clearly delineated meaning for each of the different coloured leaves. This Ketso characteristic would give the focus group facilitator a set of tools to manage the generation and discussion of ideas and to keep participants focused. In the present use of Ketso, I was able to move the discussion forward, avoiding situations where the teachers spent too much time talking about what they 'liked to talk about' rather than 'what they thought was important' (as suggested by the variety of ideas they had written on their leaves), or falling into the interactional dynamic of the magnification effect.

Using Ketso did help to reduce some of focus group limitations, but needed some adjustments and continuous reflection from the researcher on the kind of data intended to be generated from using the kit and the advantages and limitations associated with it. I noticed

that Ketso tends to ask ‘what’ questions more than ‘why’ and ‘how’. If the researcher needs to know why things are happening or why certain experiences took place, which is the case with most qualitative research, then the Ketso session facilitator needs to engage with the participants when they read what they wrote to ask why did you write this or can you give me more details. This process enhanced the data generation potential of Ketso further through follow-up questions that extended the focus to the how and why of the Saudi teachers’ experience. At the same time, I recognise that this ‘facilitator control’ may also shift a Ketso session away from being inclusive, to being more overtly directed by the facilitator and her research agenda. Hence, this is an area that warrants further investigation.

In summary, I believe the use of Ketso as a focus-group methodology has enhanced the visibility of the voices of the Saudi female teachers, making their views available to educational research and policy-making. In addition, I believe their participation in Ketso was a positive experience for the Saudi female teachers. Such a positive experience may prompt these teachers to take future action. This may be professional action motivated by the Ketso discussion, increased willingness to be participants in future research, or perhaps even work as researchers themselves. These outcomes are consistent with the starting point, that there is a generation of Saudi female teachers who are an ‘as yet’ untapped resource. Ketso can act not only as an inclusive and effective qualitative data generation method, but can play a part also in prompting Saudi female teachers to contribute to the future development of education in Saudi Arabia.

## **9.6 Recommendations**

After interacting and listening to teachers in Saudi public primary schools and engaging with literature and studies done on both inside and outside Saudi context, and the process of analysing the data and writing up this project, I have few recommendations.

This study shows that teachers are able to identify their needs, look for solutions and to engage with policy makers. They also want their voices to be heard and are eager to develop the educational system in the country. This study suggests that it is crucial that the Ministry of Education listen to teachers, the challenges they are facing in their daily practice, and teachers’ recommendations of ways to solve these challenges. This may be achieved as suggested by teachers, by electing teachers from different regions to represent other teachers to higher leaders in the Ministry.



I also recommend that it is crucial to build a culture of collaboration between policy makers and practitioners. Policy makers should create friendly environments, like the one presented in this study (Ketso session) for engaging teachers in the process of policy making and for policy makers to make sure that policies presented are actually serving the teachers, their students and the educational system as a whole. The value of listening to the voices of those teachers on the ground and valuing their contributions and the solutions they are coming up with, that can inform practice and policy and help bridge the gap between them. During this study, listening to the voices of teachers seems to open a treasure trove of creative thinking around technology use, something that the educational system in the country should use and appreciate.

These collaborative sessions also may be used by school head teachers and supervisors to direct professional development goals for teachers and collegiality building goals between teachers in the same school. Based on the feedback from the teachers after engaging with each other in the focus group session using Ketso, I recommend that teachers engage with activities similar to the one in which they used Ketso in a regular bases in their schools. Since according to the teachers' feedback they were happy to have the chance to write down their problems, categorise them into themes and look for solutions. This process, as mentioned by the teachers, helped them think and reflect on their situations as well as sharing them with each other. This may create an environment between teachers, their head teachers and supervisors for sharing practices, challenges and solutions to these challenges.

The study also shows that teachers are not aware of their rights as teachers and employees in the educational system (see section 8.2.4), they don't have a clear idea of the policies interoperation in real practice, nor the advantages they are supposed to have and ways to ask for it. I recommend increasing teachers' awareness and knowledge about their rights and the policies interpretation in real practice. This can be done through creating a training course that all teachers attend about policies, which is independent from schools and supervisors, since also head teachers and supervisors have their own interpretations of policies.

I also recommend that the Ministry increases the online training, online educational resources and online development options for teachers. For example, creating e-portfolios for teachers, or online mentors, and many other options, since this study shows that teachers are digitally literate and found in online options a convenient and effective way for learning and development. I also recommend decreasing the paper work and assessment papers that

teachers need to do in their daily practices, this study shows that these paper works that are asked from the Ministry took a lot from teachers' time and effort that is supposed to be guided to enhancing the learning experience for students and to the development of teachers. The Ministry should develop a technique that will still maintain the standards that they want to make sure all teachers are following through paper work, but without overloading the teachers. The Ministry should also revise the promotion policies for teachers, not to make it according to years of teaching practice but to set other promotion standards.

## **9.7 Limitations and Future research**

As for future research, this study offered an insight into the situated experiences of Saudi female teachers using technology, which concentrated on the experiences from the teachers' own standpoints and presenting their voices as teachers and females in this specific context. On the other hand, this study did not present the views of students, families, school administrations, or anyone involved in the process of using technology. For example, using WhatsApp to publicise outstanding students and their achievements or their pictures to the mothers' groups, the teachers viewed this as a means of encouraging students, but it may also create pressure on the students and mothers wanting their daughters to work harder to have their pictures or names posted in the group. Looking at technology use from the perspectives of students and other involved parties, such as mothers, head teachers, supervisors and even families and husbands, is important in order to gain a holistic view of the impact of teachers' use of technology in their practice on society and learners. This is not included in this study, thereby suggesting a need for further research investigating the changes to society and students' experiences as well as the teachers.

Moreover, since this study collected data from public schools in one city in Saudi, there is a need for more qualitative research concentrating on teachers' experiences in other cities to obtain more holistic view of the Saudi female teachers' experiences of using technology in Saudi Arabia. Since there is a diversity of social and geographical characteristics in different parts of the kingdom, this may cause different experiences between teachers. Also, it is important to know if the challenges teachers face regarding the Ministry of Education are also experienced by other teachers in different regions. The teachers in this study stated that the challenges they face of lack of resources and support from the Ministry and its rigid rules, other teachers in different parts of the kingdom are suffering from as well, but this needs further research to produce more evidence.

In terms of the methods used, this study established a starting point of using Ketso as a qualitative research method. There is a need for more studies testing this tool and using the different affordances offered by Ketso to serve different aims in research projects. There are also more studies needed to observe the impact of using group dynamic and reflective practice activities motivated by Ketso or any similar tool between teachers in Saudi context, that may prompt teachers to take future action and be involved more in educational research.

## **9.8 Final Reflective Remarks**

During my PhD journey, some days I wondered why I choose to do my research on Saudi teachers, taking on all the challenges of conducting a multilingual research project, translation, explaining the context and researching Arabic literature. But as I was approaching the end of writing the study, I realised that I saw myself in my participants, that unconsciously I am studying myself and my situation. This thesis is summarising my struggles, my journey of understanding not only the situation in which I and other females found ourselves living, but also a journey of understanding myself. Like my participants, whose agency was enhanced by the use of technology and who came into conflict with structure, I have the same struggle. The more I develop my agency, the more I come into conflict with structure, which also made me feel frustrated. My participants' identity and capital changed with the use of technology, and my identity and capital changed with my PhD journey. The more I understood my participants' experiences, the more I found myself understanding my own. We all question whether it was better if our agency was not developed in the first place, maybe we would not experience conflict. But at the same time, our fighting and ambitious side that feeds on adventure rejects this idea. Both I and my participants see ourselves as fighters and warriors, we both have big dreams, but they are as big as the obstacles we face.

This led me to think: what is next? For me and for my participants? Through this research, I have gained experience in different research methods, presenting the research findings and analysing the data. I have also increased my knowledge in the field of educational technology, technology intersection with society and vice versa, and literature addressing technology use in Saudi Arabia, as well as literature around the education and position of women in Saudi. Through this study, my knowledge of what teachers have experienced in Saudi schools increased. I learned about teachers, what they are experiencing in their daily lives, their battles, privileges and their needs and hopes. But I still asked myself, what is next? I found

myself answering that this study is only the beginning. There is a need for more collaborative work between researchers, teachers, administrators and leaders to enhance the experience of learners and teachers in Saudi schools. Localising technology and using it in a meaningful way is just the beginning. There is a need to encourage critical thinking, reflective practice and highlighting challenges, and looking for solutions and sharing creative practices and ideas.

For myself and my participants, as well as women in Saudi, we have a lot of work to do. But finding common grounds, identifying our needs, looking for solutions and using resources and the support we have to reach to our goals is the beginning.

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## Appendix 1 My Journey Through Phenomenology

The first kind I read about is Descriptive phenomenology that is based on Husserl's (1859-1938) philosophical ideas. It views experiences as perceived by humans' actions that are influenced by what they are conscious about and perceive to be real. The aim is to seek features of a lived experience that are immediate and pre-reflective, and that are common to everyone living the same experience, with 'universal essences' presenting the true nature of the phenomenon being studied. *Discovering* and *Describing* the 'essences' without resorting to interpretations, is the goal of conducting a descriptive phenomenological study. By analysing in-depth interviews and finding common realities across them, to come up with 'how it is to be someone living this particular situation (Dowling, 2007; Lopez & Willis, 2004).

Husserl proposes the notion of 'bracketing' that researchers must 'bracket' themselves to not get involved and to hold back their ideas, reflections, and personal knowledge while listening and interpreting the lived experiences of participants (Lopez & Willis, 2004).

Given that Husserl's beliefs that the 'essences' of an experience can be abstracted from lived experiences, consideration of the impact of culture, society and politics on individual experiences are not central to his approach of phenomenology (Cohen & Omery, 1994).

In the process of conducting the study, interacting with the data, and reading more about phenomenology, I came into conflict with Husserl's descriptive phenomenology for the following reasons:

- The notion of bracketing: I found myself involved in the study in both the data collection procedure and in the analysis phase. These are my reflections taken from my diary.

*...but after looking at the data, the Saudi context is so unique and different, I thought it will be crucial to go beyond presenting teachers' experiences to try to understand it. . To give it more interpretive account to try to present the meaning of these claims and experiences. In this point I have a dilemma, since I don't want to influence the study especially being Saudi myself, so I thought that going with the descriptive analysis will protect my study from any kind of bias. But at the same time I am afraid that not interacting with the data in the analysis process might lose a very important and interesting part, especially that Saudi context has its own ways of living. (Diary 14 March 2014)*

- The notion of Pre-reflection presented another reason for not using a descriptive approach. Since I used focus groups that were facilitated by Ketso as a way to create



an unthreatening environment for teachers to share their experiences (see section 5.2.5), it came into conflict with the philosophy of descriptive phenomenology since teachers share and, in some cases, co-construct knowledge together and build on each other's experiences. Here is an extract from my diary:

*The idea that descriptive analysis is concerned with the pre-reflective process of thinking to arrive to the essence of something. So it looks at what participants are conscious about and choose to share. The reason why I think I can't achieve this point is because the teachers are engaged in a social context that I created using Ketso (Focus Group), I am not sure if there was not some sort of reflection going on, Specially as sometimes they co-construct conclusions of joint experience together. Therefore, I cannot claim that the experience I gained from my participants is pre-reflective. (Diary 14 March 2014)*

- In the process of conducting the research and gathering the data, I found it impossible to not link Saudi female teachers' experiences to the context they are living in, particularly when looking at technology use in their practice. I also found that participants co-constructed knowledge together and with the researcher as well.

*I was reading about phenomenological analysis. I came to realise that I am afraid to use the descriptive Husserl way to analyse since I am not sure how focus group activity will fit with it. If I will adopt this method I have to treat each focus group as an interview; if I did this I will delete the fact that knowledge was accumulated in the focus group and teachers interacted with each other and co-constructed knowledge together. (Diary 13 March 2014)*

Then I started reading about Interpretive or Hermeneutic Essentialist phenomenology introduced by Martin Heidegger (1889-1976). Heidegger agrees with Husserl in studying human experiences as they are lived, but does not agree with Husserl's view of the importance of description over understanding (Dowling, 2007). Heidegger went beyond the description of essences to look for meanings embedded in common life practices. He believed that individual activities and choices are influenced by historical, social and political forces that shape and organise experiences (Lopez & Willis, 2004). The focus for interpretive phenomenology is the relationship between individuals and the world in which they live, emphasising that people cannot extract themselves from their world. Here the researcher will ask people to describe detailed daily work practices that show the relationships and interaction relations between them and others in the context they are living (Smith, 1987).



Interpretive phenomenology emphasises that it will be impossible for a researcher to rid her or his mind of background understandings that directed the researcher to conduct the research in the first place. Here the researcher's knowledge is valuable in guiding the study and making it meaningful.

It appears that the interpretative phenomenological approach would overcome the problems I had with descriptive phenomenology, but when looking at phenomenology and technology and its interaction with society and peoples' experiences. I came across Post-phenomenology presented by Don Ihde (1993) that offered a new way of looking at phenomenology and technology. Verbeek (2005) draws on the work of Ihde and many other philosophers in both phenomenology and constructivist approaches to propose a post-phenomenological approach that he describes as follows:

I articulate an approach to technological culture that attempts to understand the concrete role of technological artifacts in human existence. The key concept of this approach is 'mediation' ...when technological artifacts are looked at in terms of mediation –how they mediate the relation between humans and their world, amongst human beings, and between humans and technology itself (Verbeek, 2005, p. 11).

Post-phenomenology is to combine the philosophical questions with empirical investigations into technology. It combined the interpretative phenomenological question that asks

how human beings realize their existence and thus are present in their world.... and ways in which reality is interpreted and thus present for human beings" (Verbeek, 2005, p. 10),

with the empirical questions of technology investigation that asks,

"What is the role that technology plays in human existence and in the relation between human beings and reality?" (Verbeek, 2005, p. 100),

and came up with a new way of approaching it, proposing to focus on,

How technology mediates the involvement and engagement of human beings with their world and the ways in which they realize their existence (Verbeek, 2005, p. 172).

The post-phenomenological approach, then looks at concrete technologies with an eye to the relations between human beings and the world that they make possible, and elucidates the structure of these relations (Verbeek, 2005).

## Appendix 2 Information Sheet

الخبرات والأفكار المتعلقة بالتكنولوجيا و دمجها في التعليم لمعلمي المرحلة الابتدائية في المملكة العربية السعودية

## ورقة معلومات للمشاركة

يتم دعوتك للمشاركة في مشروع للطالبه دلال العباسي للحصول على درجة الدكتوراه. قبل أن تتخذي أي قرار، فمن المهم أن نفهمي لماذا تجري الطالبه هذه الدراسة و ما الهدف منها. يرجى قراءة هذه المعلومات بعناية ومناقشتها مع الآخرين إذا كنت ترغبين في ذلك، ولا تترددي في طرح الأسئلة حول أي شيء قد لا يفهم أو لطلب المزيد من المعلومات.

## من الذي سيقوم بإجراء الدراسة وأين؟

اسمي دلال العباسي، أنا طالبة دكتوراه في جامعة مانشستر وأنا حاليا أقوم بجمع بيانات من بلدي المملكة العربية السعودية. وسوف تكون الدراسة ضمن خمسة مدارس ابتدائية خاصة للإناث في مدينة جدة المملكة العربية السعودية.

## عنوان الدراسة

هذه الدراسة " الخبرات والأفكار المتعلقة بالتكنولوجيا و دمجها في التعليم لمعلمي المرحلة الابتدائية في المملكة العربية السعودية ". الهدف من هذا البحث هو تسليط الضوء على تجارب المعلمات في التعامل مع التكنولوجيا و التدريب على استخدامها في سياق عملهن. ويستكشف كيف يمكن لهذه الخبرات التأثير على اعتقادات المعلمات و طريقة التصرف في دمج التكنولوجيا وكيفية تطوير تدريسهن ضمن سياق عملهن. وسوف تركز هذه الدراسة على طلب المعلمات للتفكير وتبادل الخبرات مع بعضهن البعض.

## لماذا تم اختيارك؟

سوف أقوم بجمع بيانات الدراسة من المعلمات السعوديات اللاتي يقمن بالتدريس في المدارس الابتدائية. لذلك، أود أن أدعوكي للمشاركة في هذا البحث، لأن التجربة المهنية كمدرسه أمر بالغ الأهمية لهذه المناقشة.

## ماذا سيطلب منك أن تفعلي إذا قمتي بالمشاركة؟

سيطلب من المشاركين في هذه الدراسة المشاركة في مجموعة تركيز واحدة من شأنها أن تستمر لمدة ساعة واحدة ومقابلة شخصية واحدة من شأنها أن تأخذ 40 دقيقة. في مجموعة التركيز سوف تشاركون مع أربعة معلمات أخريات وسوف تستخدم أداة عصف ذهني تسمى Ketso يستخدم فيها قطعة صغيرة من الورق الملون للمشاركين لكتابة أفكارهن عليها ووضعها على قطعة قماش خاصه.

سوف أقوم بتسجيل جميع المقابلات وجلسات مجموعات التركيز صوتيا بالإضافة إلى الملاحظات الميدانية التي اتخذها الباحث.

## كيف يتم الحفاظ على السرية؟

سوف تكون هوية كل من شارك سرية و محمية وسيتم وضع اسم المشاركه بالمجهول، وسيتم تخزين الأشرطة وتدوين المقابلات وجميع الملاحظات الميدانية وتحديد معلومات مثل موافقة في مكان مقفل و امن.

## ماذا سيحدث للبيانات التي تم جمعها؟

سيتم تخزين جميع الأشرطة والملاحظات الميدانية بشكل آمن في درج مقفل والوصول إليها من قبل الباحث فقط حتى نهاية الدراسة، وبعد ذلك سوف يتم حذفها. مرحلة التحليل أيضا سوف تجري في منطقة الدراسة بحيث لا أحد آخر سوف يكون قادر على سماع المقابلة أو الوصول إلى البيانات التي تم جمعها.

هل ستنشر نتائج الدراسة؟

أخطط لنشر نتائج هذه الدراسة ولكن سوف يتم التأكد من أن الهوية الخاصة بكل من شارك محمية، وسيتم استبدال الاسم مع اسم مستعار من أجل الحفاظ على السرية وعدم الكشف عن هويته الخاصة بك. كما أخطط لنشر من البيانات، وربما بعض الاقتباسات من البيانات، بحيث يكون لديك الحق في مراجعة نصوص مقابلات لتصحيح أي نقاط إذا كنت ترغبين في ذلك.

ماذا يحدث إذا كنت لا تريد أن تأخذ جزءاً أو إذا غيرت رأيك؟

المشاركة في هذه الدراسة تكون على أساس تطوعي. ومع ذلك، إذا قررت سحب في أي وقت فمن حقك و من دون إبداء أسباب.

الاتصال للحصول على مزيد من المعلومات

إذا كنت تحتاجين إلى مزيد من المعلومات، أو في أي مرحلة من مشاركة الخاص بك، أو كنت ترغبين في تقديم شكوى رسمية حول سير الدراسة يجب عليك الاتصال بمشرفي:

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## Appendix 3 Consent Form

### استمارة الموافقة

1. أؤكد أنني قد قرأت ورقة المعلومات المرفقة على الدراسة المذكورة أعلاه، وقد أتيت لي الفرصة للنظر في

المعلومات وطرح الأسئلة وكانت هذه الإجابة بصورة مرضية.

2. وأنا أفهم أن مشاركتي في هذه الدراسة هو طوعي وأنني حرة في الانسحاب في أي وقت

3. وأنا أفهم أنه سيكون الصوت مسجل في المقابلات و مجموعة التركيز

4. أنا أوافق على استخدام علامات الاقتباس للمجهول

5. أنا أوافق على المشاركة في المشروع المذكور أعلاه

إذا كنت سعيدة للمشاركة يرجى تعبئة وتوقيع استمارة الموافقة أدناه

توقيع

تاريخ

اسم مشارك

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توقيع

تاريخ

اسم الشخص الذي أخذ الموافقة

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## CONSENT FORM

If you are happy to participate please complete and sign the consent form below

### Please Initial Box

1. I confirm that I have read the attached information sheet on the above study and have had the opportunity to consider the information and ask questions and had these answered satisfactorily.

☐

2. I understand that my participation in the study is voluntary and that I am free to withdraw at any time.

3. I understand that the interviews and the focus group interactions will be audio recorded

☐

4. I understand that the note field which observed will be recorded

5. I agree to the use of anonymous quotes

☐

6. I agree to take part in the above project

☐

Name of participant

Date

Signature

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Name of person taking consent

Date

Signature

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## Appendix 4 Full Translated Focus Group

School Name: Baa School

Duration of the focus group session: 1 hour 21 Minutes

Note: the text between brackets are the researcher own comments.

This Ketso session took place in a primary public school in Jeddah. This school is categorised as a Religious school ( Tahfeez Quran ) that students have an additional program to memorise the Holly book of Quran in addition to the national curriculum.

In the beginning teachers had time to read the information sheet I provided and to sign the consent form. I made it clear why it is important to audio record the session and they all agreed for me to do so.

The Ketso felt was divided into themes, The first area was “Sources of Knowledge and Skills”, and this was further divided into three sub-themes (Personal, School, and Social). The second area was “I use Technology”, and this was divided into three sub-themes (Teaching, Learning, and Social).

Teachers started by thinking about ways they learn technology, they individually wrote every way in one brown leaf. After that they thought about what they wrote on the leaves if it was personal, social or from the school environment.

In the personal efforts theme, they mainly wrote that they learned by practice, trial and error and searching the internet like looking at websites, YouTube and using the help option in some programs to learn more of how to use the program. They also said that by using technology they can know all what is new, “I feel technology made me open to the world around me by searching what other teachers are using, it opened my horizons”. They talked about learning from the more experience people around them like their husbands and even their young children. One teacher said “if I wanted to learn something using technology I will just look to whoever can help me and ask for their help regardless they are at school or outside the school.”

Teachers in this school stressed on how they learned from each other and how technology not only increased their skills and knowledge but also increased the feeling of tender, cooperation and collaboration between teachers. They wrote that they learned by exchanging experiences between colleagues, consulting each other and arranging in school training between them to learn new ways of teaching. They gave example “if one teacher learned something, she will give us training in using this new program without even asking her to do so.” Another teacher said “ technology made teachers get more closer to each other by sharing and exchanging new skills and ways of teaching, if a teacher learned a new skill in technology, she offers to give us training” another one added “ although in –school trainings are very short in time but has a great effect in our skills”. They also added, Hanan: “when we consult each other, this makes our ideas closer, technology overcome age differences, we don’t only collaborate with

colleagues but also with our students, Me and Mrs. Lamia went and asked one of the students about something in the computer and she showed us how to do it. We always learn from our students and even from our own children, we exchange knowledge and we benefit from them a lot”.

Researcher is there someone else who was in a situation that she learned from her students?

( More than one teachers talked at the same time agreeing on the statement of learning from students and younger generation)

Ghada yes always we benefit from them a lot

Sara I always learn from my son who is in year 7

Lamia we always learn from our students

Researcher ok what other advantages do you have

Sara I wrote the positive communication with the world around me

Ghada I feel technology helped me a lot to be open to the world

Hanan yes through searching and learning what is new, I benefit from other people who have information and ideas

Sara I also wrote help and enjoyment and overcome the boring routine

Researcher enjoyment to the teacher or the student

Sara for both

Ghada technology made teaching more enjoyable and fun, it changed teaching

Sara before technology teaching was about preparing the preparation notebook that was very boring

Lamia before we had to follow a specific protocols but now it's different, now we have more freedom

Regarding training, teachers mentioned taking trainings outside the school to increase their skills that they pay from their own money.

They also mentioned the trainings that took place at the school time in the training centres affiliated to the ministry that provided training to the teachers. Sometimes the ministry training centres made agreements with private computer training centres to train teachers. One of the teachers explained how her experience going to one of these trainings offered from the ministry but in a private training centre was really good

Hanan I went to a computer training offered from the school for three days, it was amazing and we got really good results by attending this training.

Researcher Why is was amazing

Hanan Because we really wanted to learn. We wanted to learn something so we didn't mind to go for three days to learn it

Researcher what was the training about

Hanan It was about computer skills , how to use the computer, download programs, using variety of programs like Word, Excel ..

Researcher was it in School

Hanan No outside the school, in a special computer training centre

(here the teachers start analysing why Hanan benefited from this training offered from the ministry since they saw it not usual)

Lamia maybe you benefited a lot because the number of teachers in the training was small, if there were a lot of teachers you would not benefit a lot

Ghada I think she benefit because they found enjoyment in what they learn

Hanan Yes that is true, imagine we used to sit from 7 until 1 with only half an hour break but it was amazing we felt that we learned and accomplished something. You know Technology gave us the opportunity to go out and learn something new. I have been teaching for years, give me something new and nice to learn, don't give me something routine that I already know to learn it again, NO I want new and interesting new things to add to my knowledge"

Researcher Was it in school time

Hanan Yes it was, we had to leave our classes.. am telling you it has a positive and a negative side of it

Researcher Can you list the challenges you face in training

Lamia Like the training, you find yourself going to the training without benefiting from it, they don't know how to deliver the information.

Ghada Maybe the trainer is not qualified enough to give the training.

Sara One time I went to the training and didn't benefit from it because the trainer didn't know how to deliver the information to us, it was a waste of time.

Ghada Also the huge number of teachers in one training.

Sara Also the time of the training is not suitable, we have our classes and curriculum to finish, when you take me out to do training in the school time, it is very bad timing.  
What do you think can be done?

Ghada There are times we don't have anything to do.

Hanan To take advantage of these days when there are no students, we don't have a lot



of things to do. As we said it needs better planning.

Ghada Yes, the solution is good planning.

Hanan They also repeat the same training, we already know it, we don't want to take it again, we want something new, more practical

Lamia Yes, the training is very repetitive.

Ghada the solution is a survey to ask teachers what they want and need in the training

Researcher I heard that there is a system that you enter your ID and click all the trainings that you want and according to these surveys they provide these trainings

Ghada Yes they provided a lot of trainings in different disciplines to choose from but go see the training centre, but when you go you get surprised by the huge number of teachers in this training. Look our colleague is there today, she said it was so crowded she couldn't benefit

Sara I suggest that the ministry send a trainer to each school instead of us going to the training centre. For example the supervisor comes to the school and she trains the 45 teacher at one time, instead of the 45 teacher going out of from school through the year to take the training. This will save time and a lot of effort and will reduce the traffic on the training centres

Lamia yes I do agree, and the training can be suitable to different disciplines

Ghada so there will not be a mobile student, there will be a mobile teacher"

Sara there will be a mobile trainer

Ghada yes a mobile trainer

( They all agreed on the idea and the term the mobile trainer)

Solafa and this will reduce all the transportation problems as well

(The teachers reached this solution together, we can see how the teachers' solutions and thinking is to adapt to their reality not changing the reality. For example the problem with transportation is to make the trainer come to them not to change the social problem with transportation.)

Researcher ok if the training was about technology, and you said that there is no technology equipment in school, how can the trainer give the training without a computer lab

Sara she is supposed to bring the equipment with her

Ghada No no, every teacher can bring her laptop to school, so we can use them there is no problem with that

Is there any other obstacle you find in training

Hanan Many times I wanted to go to a training a couldn't because of transportation  
(Many teachers agreed)

Sara it's the most difficult thing and the main obstacle, transportation

Hanan Sometimes I can't go because of my heavy schedule

Lamia Believe me if the training is beneficial everyone will run to take it, but for example there was a training about active learning, this training was boring that the trainer only talked and talked so after that no one want to make an effort to go

Ghada Some training are far from classroom reality

Hanan Don't just explain show me how to do it on practice. Show me a real lesson using this new technique

Sara The trainer or the supervisor who is giving the training has to make a typical real lesson to demonstrate how this new idea or technique or technology can be used in real life. For example when they upgraded the curriculum and made new books. They gave teachers training on using the new books that was only talking. We asked the trainer to give us a real lesson using the new books and resources she couldn't do it

When they started talking about using technology in their teaching, they expressed how teaching became more enjoyable for both teachers and students. They used the phrase "breaking the boring routine" to show how technology helped them to move from the boring (as they used it) routine of teaching "teaching was about preparing and writing in the *preparation note book* which was a very boring process, but now you can use different ways in teaching, it gave you more freedom".

They added that using technology "Improve the level of Performance", I prompted the teachers by asked how do you know that the performance has improved due to using technology?

Ghada you can monitor yourself as a teacher by the feedback you gain from others attending your classroom, for example my supervisor her critiques and feedback became more positive after I started using different ways in my classroom, even you can tell from your own position in the class.. you start to enjoy teaching  
Did you notice any improvement in students' level as well after using technology?

Ghada Nowadays it is very hard for us as teachers to monitor this because of the

*Continuous assessment* system that the government is adapting that puts all students in one basket of level 1

- Hanan the only way is to evaluate the students during the class by test their understanding to try to know the impact of technology taking in consideration that you must not wait to another lesson because they might forget
- Sara I noticed when I use technology the information is reinforced better for students than not using technology in the class
- Ghada the other day a lady came to the school and talked about different learning styles students have, she showed that by displaying a picture or a video clip can save 15 minutes of explaining something since then you took in consideration children who are visual learners
- Researcher Do you think technology takes in consideration different learning styles?
- Ghada Yes it does because you use active learning styles. Me as a teacher must integrate different styles in my lesson. For example I can in the begging I might use presentation show then I can distribute worksheets then some moving activity and so on. I can tell you when we first started using technology we used to use the power point show from the beginning of the lesson until the end, we just talked and talked but now it's different, you can use presentation programs only in a small part of the lesson then you start using other things
- Sara in the begging it was something new and weird for us but know I can judge when I need it in my classroom

When I asked the teachers to use the Grey leaves to think of difficulties and challenges they are facing. The first thing they started talking about is lack of technology equipment in the school. The teachers explained that all technology equipment in the classroom is provided from the teachers. Every teacher brings her personal laptop and data show projector that she bought from her own money to school and take it with her into each class. In every lesson she takes her laptop, projector and sometime speakers with her to the classroom and Start plugging the equipment before starting the lesson, they explained how time consuming this process is for the teachers. They added that some higher grade classes (4,5,6) in the school have fixed projectors and laptops in them since teachers were very tired of the process of plugging and re-plugging they decided to collect money from each other and some from the school head teacher to provide a data show projectors but for the laptops there were given from the teachers as an ongoing charity for the school. They added that even the expenses of the technician to install the equipment and the electricity connectors are provided from the teachers from their own money.

- Sara how do I write this, sometimes while am using technology the computer stop

working it takes me a long time to plug the equipment in the classroom

Ghada like external circumstances like breakdown of a machine or electricity failure

Researcher Sara do you mean you plug your own laptop and projector in the classroom

Sara yes the equipment are not provided from the school so every time I enter the classroom I have to plug my laptop and the projector and sometimes the speakers . I really hope they provide projectors in the classrooms that are already hanged in the ceiling and ready to use. In some classes there are projectors installed but others has not. There are a lot of time wasted in the process of plugging and re-plugging the equipment

Hanan so just write lack of equipment

Researcher Who pays for the equipment you use in classroom?

Sara everything is on teacher expenses, the laptop, projector, speakers even the electricity connection is on you only electricity is on the school

Researcher since when you are living this situation

Sara We.( then been interrupted by Ghada)

Ghada look in the higher classes of fourth, fifth and sixth grades some teachers who already have projectors hanged it on their classes as a form of donation to the school as an ongoing charity and for other classes we collected money from each other in addition the school contributed also some money to able to hang projectors in all classrooms in higher classes.

Sara like I have a friend (interrupted by Lamia since she wanted to comment on the previous point )

Lamia In summary they don't provide us with any equipment, most of the equipment are our equipment we provided it to school

Ghada yes it's all our equipment

Sara even when we get the projectors we bring the man to hang them on our expenses

Ghada No No we don't pay him

Lamia yes Ghada we do, because of all the things you pay the school to forgot what you paid hahahah (being sarcastic, other teachers laughed)

Sara I have a relative that teaches in "Beesha" (A small Village), the ministry provided for every teacher a personal laptop that she can use in school. They made her sign a guardianship for the laptop to only to use it in school not in her house but only in school. I really wish they do the same here in our school ( she is being critical by comparing services in different regions)

Hanan we provide laptops for the school. for me I left my laptop in school because it was too heavy for me to carry it between home and school, when I work at home I save my work in a USB then bring it to school and now I bought a small laptop so it will be easy for me to carry it between my classes. I thank God I tried and tried until I achieved to put a machine in my class

Sara you mean a projector

Hanan yes it made a huge difference to come in and start right away without needing to plug anything

Sara yes you just need to carry your laptop

Researcher do you use the projector on the normal board that you write on

Hanan Yes

Ghada Yes we split the board into half, part for the projector and the other part is for writing. But the problem that while the teacher is moving in front of the projector the rays is not healthy, it cause health problems since you can't avoid moving in front of the screen

Lamia That's why they need to provide smart board, the smart board rays are not directed to the front its directed in a way that will not harm the teacher. (came up with a solution)

Researcher would you like to have Smart boards in school

Ghada Of course

Hanan any development in technology will help the teacher in the teaching and learning process

Researcher Do you pay for other things for the school rather than equipment  
(Here teaches started to open up regarding all the expenses they pay for the school. You feel that every time a teacher says something as if she is giving the green light for the next one to talk and share another experience)

Sara oohh we pay thousands of riyals for the school

Hanan ooh yes even we have to pay for the hygiene

Researcher I don't get it, what hygiene

Hanan We pay but we are not forced to pay but we do in a way to collaborate with the school to make it clean, because we care about our school. We want our school to be clean

Researcher so what do you do

Hanan the budget that the school get can't afford to employ more than one cleaner, so we pay to employ an extra cleaner for the school

Sara The ministry provides only one cleaner for the school, what can one cleaner do for a three floor school.. she can't do anything, so we bring extra cleaners for the school and we pay for them

Lamia We don't have teaching aids like we buy the printer, the papers , ink everything we pay for the school. The school don't provide these things

Hanan even we told them ok we will buy the printer but you provide the papers and ink, no respond so we have to do it

Ghada also the certificates of appreciation and gifts we give to our students, we pay for it

Researcher The school doesn't provide certificates for students?

Ghada no it does provide but for limited numbers of students only, but of my class is full of outstanding students I have to bring to them all"

Sara also you have to pay to decorate your class or any tools of motivation you use you pay of it"

Lamia They told us if you pay for any learning or teaching resources, write it down with how much it cost you and we might re-pay you in the next budget. But the

process is too long and boring. For example I honoured my students by giving them gifts, they want me to write the name of each student, what did you give her and the price and why she derived the gift.. very boring detailed information so we just pay for it from our own money.

Sara and they don't repay you for everything, they have criteria that you have to follow

Hanan Even we pay for copying, we have to photo copy all the worksheet papers we use for the continues assessment for each student . we have to do it and we pay for it"

Researcher Are you asked officially to have these worksheets?

Sara of course, we have to print these worksheets and give it to our students, our ministry supervisors will ask for it

Ghada even the head teacher from her own money she brings paper and ink but the ministry they don't provide these things

(The good thing about Ketso that it helped me to move forward after sharing hard experiences to another mode of thinking, I asked them to write of advantages they find in using technology. Teachers were asked to list advantages of using technology, they started sharing their experiences)

Hanan it gives you access to self-development

Lamia communicating with parents

Ghada this is a very good point

Researcher How do you use technology to communicate with parents?

Lamia We use social programs specially *WhatsApp*, we take the numbers of the mothers and we create a *WhatsApp* group for each class.

Ghada wooww the *WhatsApp* is amazing in communicating with students' mothers, it helped us to communicate with mothers and has a big effect on students attainment.

Hanan yes we all created a *WhatsApp* groups with the mothers of our students

Lamia We send some tips, useful information, things we need mothers to be aware of, upraise sentences for students.

Ghada It had a great effect to improve performance. Sometimes mothers can't come to school since she doesn't have transportation , me as a teacher with using *WhatsApp* can communicate with her

Sara If it was a general issue we send it to the whole group, but if it was something personal to a specific students we talk with the mother on the private message in *WhatsApp*.

Ghada Also we use it to show excellent students; I call them (Queens of Quran) so I send in the group the names of the queens for this week. The first week we had 5 queens, the following 7, the following 12 and know students are studying the lessons in advance because they want their names to be with the queen, since they know that all mothers can see it in their phones. It is a great way to increase motivation.

Sara it helped to improve the performance of students since mothers show their

daughters what is written in the group

Hanan For me I create a flower of the week which is the best student in behaviour. In the end of each week I don't take a picture of the student but I take a picture of the student's name on the board and the presents she took . I immediately send it to the WhatsApp group. You can't imagine how happy the student and her mother.

(The teacher overcomes the cultural barriers of taking pictures of student by replacing it with a picture of the student name and the gift she took)

Ghada It improved both the behaviour and educational levels.

Sara For me since I teach first grade I can take photos of students but in higher classes they only write the names.

Ghada of course for you Dalal in England it is ok to take pictures they don't have problems in that

(Comparing Saudi context with western context)

Researcher Did you experience disadvantages from having these WhatsApp groups?

(In this section they shared the disadvantages of using WhatsApp and ideas of how to overcome these challenges)

Lamia Sometimes it is very disturbing; some mothers keep sending me messages all the time.

Ghada Don't answer Lamia, I personally don't answer

Hanan For me I created a special number only for school WhatsApp that is different than my private number, I can't call or receive calls its only for the WhatsApp. So mothers can't call me I also have life and I don't want mothers to keep disturbing me

Sara I have another solution, if one of the mothers keep disturbing you tell her please come to school to discuss this issue

Ghada or set a specific time for them to contact you

Lamia sometimes mothers have arguments between them, one mother say something and another argue with her

Ghada there is another disadvantage , some mothers take the group as chatting space , they start talking about subjects that has nothing to do with the school or their daughters

Hanan But honestly it has a good thing that mothers establish relationships through the group. I still think it is very useful tool especially when you see all mothers know each other in the parents meeting, although they never met before but because they are on WhatsApp group together.

Ghada yes they get to know each other through the group

Hanan they also share good topics that benefit their daughters , it has much more benefits that disadvantages

Researcher so what do you do if there was a problem between two mothers in the group

Lamia the problem you don't have time to fix things

Sara They usually solve it without our interference, you find another mother who takes the charge to make things better.

Hanan I have one mother who is not an Arabic speaker, she knows only English. My English is not very good so I find it hard to communicate with her. So I asked in the group if there is a mother who knows how to talk English. One of the mothers volunteered, so I gave her the non-Arab mother number and she always translate what I say in the group to her through private message.

Researcher Tell me what other leaves did you write

Lamia keep pace with development and being up-to-date to understand what is going around me, it is important to know what is new in technology especially this generation I feel they are open and we need to understand what is going on.. For example if a student came and told you I uploaded a picture to Instagram, you should know what is it.

Researcher how do you keep pace with development

Lamia I educate myself

Ghada To be a self-learner, I have to search to know specially it takes a press of a button

Hanan We sometimes gather in the teacher room and ask each other how do I send, how do I do this and that.. we have to learn

Ghada Some teachers have daughters in high school, and you know how girls like to learn in this age. So she teaches her mother and her mother (our colleague) come and teach us.

Hanan Also we have to learn to be able to guide our students to be careful being online and to raise their awareness. Also I always tell my students that be careful of what you post on the internet that it's not only for you or your friends, it's for the whole world and I give them some examples of people were judged and punished because of what they posted in social media websites.

Lamia like one of our colleagues used the multiple mice technique were she gives each group of student a mouse and let them answer questions on the board using these mice.

Researcher did she buy the mice as well (that was a start of teachers to start being critical and talking about the government)

Ghada of course she bought it, who do you think will buy the school any mice !!!!! You have to understand that we are a public school not a private school, we buy everything (she started to get angry)

Hanan you have to know that we provide everything

Sara even though we take good salaries but a big part of it goes to the school

Hanan consider it charity

Sara yes of course we consider it charity but the government supposed to supply all these things we are buying

Lamia the educational budget is equivalent to other whole countries budget

Hanan yes the budget on education is not short ( Mockery way)

Sara Why why until now there are schools located in a bad rented buildings, why there are no buses to take the children to and from the school.. why , why (She kept repeating Why)



Hanan to be honest, I used to live in a village there was buses to take students to school

Ghada even some villages they give money to students as rewards

Sara I told you about the laptops given to teachers in *Beesha*

Ghada even I have a cousin who teachers in *Laith (small village)* she said that all schools there they have smart boards in them

Lamia Ok it is good that they have these resources

Ghada yes it is good but who is more priority a big city like Jeddah don't have these kind of resources

Lamia we as a school honestly we supposed to have these resources

Researcher ok now what are the advantages and disadvantages of technology socially in the Saudi society

Ghada We learned a lot from technology, it saved us a lot of time and effort to reach information we need. But for the small children, all these smart devices made it very easy to access images and websites wither pornographic or very scary. It is very hard to monitor children with all the openness and devices available.

Sara some times on you tube you open on a religion video but you see on the side bar a bad scene, any child with curiosity will open to see what is it

Lamia For example my son he is in year 6, I went into his twitter account and found him chatting with his friend on twitter and using silly and bad languages. I talked to him and told him whatever you wrote, not only your friend will read it but everyone else. He was surprised that I could read what he wrote.. That proves that children are not aware of the capabilities of these technologies.

Hanan Also all these smart technologies made children busy from living their own childhood. You find them setting on the devices not wanted to play or move.. it has very bad effect on their health

Sara also made them busy form their studying as well

Ghada Also technology helped in the spread of rumours and wrong information. It is very quick to share and spread these messages that are not true even if the person sharing it has good intentions but it is wrong after all.

Lamia Also sometimes they use technology to hit each other's businesses, like the other day on WhatsApp a message was spread about the specific coffee brand that it contains lead. It has been years we are drinking this coffee, honestly I didn't believe what was written and I didn't resend it because I felt there is someone wanting to harm the other business.

Sara Like the other day we received a message on WhatsApp about a famous restaurant in Jeddah that it sells dog meat. I know it's not true.. Islamicly you need to make sure of the accuracy of the information before you share it with anyone.

Hanan What I like about the new technology that it is easy to search, it is easy to reach Islamic scholars and to ask them about something or to make sure if they said something or not.

Lamia Like when they say that a specific scholar said something, immediately I go into his Twitter account to make sure. A lot of times you find the scholar wrote in

his twitter that he didn't say what other people claimed that he said and it is only a rumour.

Hanan Yes now it is easy to communicate with big scholars through technology.

Researcher What do you wish for?

Lamia I wish if they offer us scholarships or trainings outside Jeddah, in other Saudi cities or outside Saudi to learn and to see what others are doing

Hanan even if they gave us these scholarships my husband will not allow me to go

Researcher Pick the most important points of what you discussed

Hanan provide technology equipment in school

Sara providing online training that you can attend from your home and also the Mobile trainer

## Appendix 5 Interview Questions

1-Can you tell me about how and when technology (of any kind) came into your life? (You can talk about your childhood or about your later years)

هل يمكن أن تخبريني عن كيف ومتى التكنولوجيا (من أي نوع) جاءت في حياتك؟ (يمكنك التحدث عن طفولتك أو عن سنوات لاحقة الخاص بك)

2-Who was/ is important to you in your journey into the world of technology?

من الذي كان له دور مهم بالنسبة لك في رحلتك في عالم التكنولوجيا؟

3-What technology resources were/are important to you? In your personal life? In your professional life?

ما هي الموارد التكنولوجية المهمة بالنسبة لك؟ في حياتك الشخصية؟ في حياتك المهنية؟

4-Can you tell me more about your teaching?

هل يمكن أن تخبرني المزيد عن تدريسك؟

5-Did you have a role model teacher that you always looked up to? Can you describe her?

هل لديك معلمة قدوة تتطلع دائما اليها؟ هل لك أن تصفها لي؟

6-Can you tell me of an example of a teacher who integrates technology in her practice in a way that you like?

يمكن لك أن تقولي لي عن مثال المعلم الذي يدمج التكنولوجيا في التعليم بطريقة تعجبك؟

7-Was there a Critical Incident while using technology in your practice that had an impact on you or your students?

هل كان هناك حادثه أثناء استخدام التكنولوجيا في الممارسة الخاصة بك التي كان لها تأثير عليك أو على طلابك؟

8-Can you tell me more about your personal interest and what you enjoy doing as a professional and in your free time?

هل يمكن أن تخبرني المزيد عن اهتماماتك الشخصية وما تستمتعي به ؟

## Appendix 6 Full Translated Interview

Interview 1:

Teacher Sohila in Baa school

Duration of the interview: 50 Minutes

Teacher Sohila is a religion teacher and a class leader for grade five. She was recommended by the head teacher as an example of a teacher who integrates technology in her class.

Turn	Speaker	Dialogue
1	Researcher	Hello Mrs. Sohila, my name is Dalal AL-Abbasi, I am a researcher looking at teachers experiences using technology
2	Sohila	First before we start I want to tell you how happy I am to meet motivating and hardworking people like you, I always encourage these kind of personalities who are highly motivated.
3	Researcher	Thank you very much for your kind words, Ok Mrs. Sohila can you tell me about yourself
4	Sohila	<p>For me I finished my bachelor degree in Islamic studies while I am full time teacher. It wasn't an easy journey; since I was working I had to take the degree (Entesab)<sup>26</sup> I had to go to the university to sort my schedule and take all the curriculum handouts from the library. The program was not developed liked nowadays where you can access everything online. Even adding and deleting modules was a time consuming process since I needed to do it from university not like now were you can do it through the university website.</p> <p>I tell my sisters that if I had the chance to study with these technologies I would take double bachelor and masters and PhD because everything is much much easier with technology. It gives you the chance to study without moving from home, even while sitting in your car you can listen to the lectures, or in school or anywhere were you have a chance to set and study. In contrast when I studied we used to take the module handbook and study and memories every word in it without any guidance. It was very hard to reach the doctors who gave these modules specially most of them were men scholars, there were rarely any woman teaching us. It was very hard to reach these doctors if I needed any help; reaching them that time was considered a great achievement. Even if you managed to find his number, mostly his secretary replies. I remember one doctor called Dr. Hassan Safar who used to give female students from his time; I always remember him and thank him a lot for his support. But now with internet everything is between your hands. They can manage their modules by adding and deleting modules through the university website and for the modules curriculum they can watch lectures either live broadcast or recorded through the program called CENTRA<sup>27</sup> that King AbdulAziz University use to enable students to listen to the lecture directly from the doctor. You can then record it and listen to</p>

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<sup>26</sup> Entisab: That is when a student get enrolled in the university as an external student that he or she is not asked to attend any lectures but at the end of the semester get examined with other full time students. This option is a good one if the student can't attend lectures either because she is working or living in another city, it is similar to distance learner but without the technology facilities.)

<sup>27</sup> Centra is a software develops to deliver of live eLearning virtual classrooms and business collaboration via the Internet and corporate intranets, including instructor-led training, self-paced learning, online meetings, demonstrations, presentations, and virtual teamwork. <http://learn.accusoft.com/case-study/centra-software.html>

it in another time. I asked my sisters what is the difference between live broadcast and recorded lectures, they said if they attended live lectures they can talk and discuss things with the doctor through the chat option and if they had good connection they can even talk in the lecture time.

I describe the situation now that knowledge comes to us instead of us looking for knowledge. I feel technology if integrated in a right way is amazing. Like my sisters they use the website that is always updated, also some doctors create WhatsApp groups for each subject they are teaching where they place all important news about the subject. Some doctors tell the students in the beginning of the year this is my number if anyone wants to reach me message me on WhatsApp. For example my sister has a group for English, another for psychology and so on. Now it is like the speed of light, it is faster than emails and chat rooms. WhatsApp is very easy and fast.

- 5      Researcher    Do you think the society accepts the idea of girls giving their numbers to be part of WhatsApp group?
- 6      Sohila            I think it is important that the student create a number only for university use. It is the same with emails when you have your personal email and university email.
- 7      Researcher    ME: did you find all these technology facilities when you wanted to do your masters?
- 8      Sohila            I see that King AbdulAziz university is much developed, advanced and keep up with all new in technology than Umm Al-Qura University<sup>28</sup>, I am not sure is it because of the conservative culture in Umm AL-Qura. For example when I registered to start my masters in Umm AL-Qura, they were very conservative about sending the ID card with the registration papers since there is my picture in it, these issues you don't find in King AbdulAziz university. I don't think they will consider creating WhatsApp group with female students, but the students between them they created a group to communicate with each other. I studied for one year but then I left the master's program, I was so disappointed
- 9      Researcher    Why did you leave?
- 10     Sohila            Since it was very hard, I had to finish work then directly go to the university. It was too much.
- 11     Researcher    You couldn't do it distance?
- 12     Sohila            No we had to attend because the program I enrolled in was Educational Supervision, I needed to attend, contribute to discussions and do assignments. I was also accepted in a university in Jordan. I really like educational system in Jordan. I feel it's a country that gives education and students a lot of attention. One time I heard queen Rania talking in one of the channels, she said that she wants the student to learn, she goes to the field and give students what they need. She thinks of ways to help students to learn, she said if the student has the will to learn and h/she is capable why not helping them. After I heard Queen Rania speech and said to myself I wish this attitude and way of thinking in Saudi education. Here unfortunate if the student got low grade he can't continue to do his masters or PhD, but in contrast Queen Rania said if a good or average student came to continue his education, by only thinking of continuing means that he wants to learn, that means that his grades were due to certain conditions. As long he came and search for higher education then I take him and make some exams

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<sup>28</sup> Umm Al-Qura University is located between the city of Makkah and Taif. The University offers the Bachelors, Graduate Diplomas, Masters and Ph.D degrees in Islamic Studies, Arabic Language, Education, Social Sciences, Applied Sciences, Medicine and Engineering. <https://uqu.edu.sa>

or foundation term to help him continue. Her words were amazing.

- 13     Researcher     Why you did not go to Jordan?
- 14     Sohila            My children were young; I couldn't go and come between two countries.
- 15     Researcher     There wasn't distance learning option?
- 16     Sohila            No unfortunately not
- 17     Researcher     Did you find any other distance learning options to continue your masters?
- 18     Sohila            Yes there are some Parallel Education<sup>29</sup> programs but I have to attend at least two times a week. But there is no a complete online course that you can send your assignments, attend and everything online, until now there isn't this option.
- 19     Researcher     Tell me about your use of technology
- 20     Sohila            Honestly I am the kind of person who really supports using technology; I always tell the school administration to use technology more often. The Ministry said that they want school management without papers which refers of doing all management and administrative work on computer. For me I can work 24 lessons or more but don't tell me to prepare paper work of lesson preparation notebook the kind they always ask teachers to show. I can prepare it electronically but to write on a paper, No I hate it. One day the head teacher asked us to prepare a folder of our achievement through the year, I told her please I have this folder but electronically I can give it to you but don't tell me to present it in the usual routine way. I want to present it in a different way. I did it in a way that took me three days, I used PowerPoint with hyperlinks, sound and so on, although it would be easier if I just printed it but I like to present my work using technology. Even my students I like to communicate with them, in the beginning of each year I meet with the mothers and ask them what your daughters like, what are her dreams, goals so I can reach the heart of the student through what she likes. Even I talk to my students and ask them what you know about technology. For example we talked about the internet and asked them what do you have, one of the students said that she has four emails. I asked her why, she said one for my family, another for my friends so I told her ok what do you think we create one for school so me and you can communicate. Also in the first meeting with the mothers I wrote my number on the board and told them this is my number I will create a WhatsApp group. I also told them that Instead of leaving your child at home and take your husband from his work to come to school to talk to me we can talk though WhatsApp either privately or in the group. I also give my students to so some work using technology as well. I give them tasks and when a student submits the homework using effects or any new way I ask her how did you do this effect? Even if I know how to do it but to increase their confidence and they get really happy teaching me. It is a great way to encourage students to learn and search for new things. We also learned about movie maker and how to add sounds and effects. We made a movie about Janadriyah<sup>30</sup> celebrations that was amazing.

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<sup>29</sup> Parallel Education is regular education program but students attend in the evening and some pay more than regular program fee. Some universities offer parallel education programs only in masters and PhD level. <http://www.imamu.edu.sa/educationalmethodologies/Pages/b48361ae-5c8f-4468-b59e-624f6332a3f1.aspx>

- 21     Researcher    When do you find time to teach and search with your students about technology?
- 22     Sohila            Since I am the class leader <sup>31</sup> I find lessons that we can use. I always tell my students I give you the keys of knowing something new, you show me what you can do, I want something new to learn from you as well, I don't want to be the person who always give knowledge, I want you to give me as well. The girls come up with amazing things, I name them technology generation. I tell them instead of only using technology to play these destructive games go and search something new that we can benefit from.
- Integrating and employing technology is not only to create PowerPoint shows and present it to the students. I noticed that these presentations stopped attracting students, you find in libraries they sell the lesson preparation, worksheets, assignments papers in addition to the PowerPoint show in one pack. For me I don't use these things, in my lesson I might need only one video clip, but to present what is already in the book does not make sense to me, we can read it directly from the book but if I want to add extra thing like a prophet saying or a video we can use technology in part of the lesson. These packs don't add anything to the lesson and most of it them are prepared by people who are not teachers and not in education, so it has nothing to do with learning. Most of them are library employers that are assigned to do PowerPoint shows to lessons, sometimes it has spelling mistakes, even the way they read the prophet saying is wrong. The ministry provided curriculum and books that are nice, so why do I repeat what's written in a slide. For example there is a lesson about animal rights, if I searched online I will find dozen of PowerPoint shows about it, even when I got a video the students said "oohh we already saw it". You feel students are very aware of what is available they need everything new to attract them.
- 23     Researcher    So the way you use technology by using videos, pictures and anything that is not available already in the books students are using
- 24     Sohila            I have to feel that students are working with you
- 25     Researcher    Can you give me example of a lesson
- 26     Sohila            For example the multiple Mice technique that I use in collaborative learning. I divide the class into groups and I give each group a wireless mouse. I tell my students to close the Mice until I tell them to open them. In each group there is a group leader that holds the mouse, and then they shift the leader position to give each student a chance. This technique makes the lesson so active. I use questions of multiple choices or choose the right picture or colour.
- 27     Researcher    How do you know how to identify different Mouse
- 28     Sohila            Every group choose a mouse shape either a robot or sun ...
- 29     Researcher    Where did you learn about this technique?
- 30     Sohila            I took training about collaborative learning with my supervisor Mrs. Maida Adeeb; they mentioned the idea in the training but didn't talk about the technicality of it or how to apply it. I took the idea and went and searched about

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<sup>30</sup> Janadriyah is a national heritage and culture festival that is done yearly in Saudi Arabia, it showcases the cultural heritage of various region of Saudi Arabia. <http://www.arabnews.com/janadriyah-festival-2014>

<sup>31</sup> Every class has a teacher who is a class leader, that means she has extra tasks to get to know the students very well, make sure the class is clean, and having extra lessons for activities

it. I learned that you can download the software and it can be integrated with PowerPoint. This technology made the students so excited about the lesson. You know if a person loves something, he or she will be creative specially that everything us available to learn.

- 31     Researcher     Since when you like computers?
- 32     Sohila             From the beginning, I went and took training in all office programs, then I took the certification of ICDL , then after it came the Cambridge certificate and I took it as well.  
                               When the school gave me an extra task to supervise students outside the classes, I came to the head teacher with an idea and I communicated with someone from the telecom company to provide a service to the school of group text messages, which enable the school to send messages to all parents in one second especially it was time of water floods, so it was important to reach parents as fast as possible. When I contacted the company the service was very reasonable prise but what stopped us that most parents gave us missing numbers. But I applied this technology with my class. But now with WhatsApp I feel this technology is old and can be replaced with WhatsApp.  
                               I will also give you another example of way I apply technology, in Quran lessons, most students find this lesson boring so I downloaded a names mixing software. I told my students that this nice program picks a name of a winner that will recite the Quran. The software mix their names then come up with one name that will start reciting the versus that they needed to memorise. This software made reciting really exciting for students.  
                               I don't like to stay in the same place; I like always to use new things and to learn.
- 33     Researcher     What makes a teacher creative?
- 34     Sohila             Now everything is available to everyone, but if a person does not have the will he can say I don't know or I can't. Before we had problem carrying our heavy laptops from home to school but now with small Notebooks it is very easy to carry it in your bag or you can buy two laptops one at home and one in school. I also really like Apple products, you're iPad, laptop and iPhone are all connected so if you write something you will automatically find three versions of it in three devices which is great. You don't feel that there are obstacles regarding not reaching something like before for example when things were only available in Riyadh or another city, now it is all available online. But it is the will and desire that are needed.  
                               Look at me I am a teacher from twenty years, although teaching does not really interest me but our head teacher tells me you are achieving all these things even though teaching does not interest you ?  
                               For me I really like administrative work more than teaching, when the head teacher gives me administrative task, I feel I can be more creative, I search more and try my best to prove myself than being a teacher.
- 35     Researcher     What kind of administrative work
- 36     Sohila             Before three years I applied to be a head teacher assistant
- 37     Researcher     Why did you go into teaching then?
- 38     Sohila             Any head teacher must start as a teacher then gets promoted to be an assistant head teacher then a head teacher.



- 39     Researcher    Is this your ambition to be ahead teacher?
- 40     Sohila         (she smiled shyly) No my ambition is much bigger than being a teacher then an assistant head then a head teacher. My goal is much more. I really wish that the ministry implement new rules that enable experienced teachers to jump positions and save time either by testing them, or asking them to submit a research project or taking specific courses that entitle teachers to be an assistant head then a head teacher without going through all the routine procedures. What is happening that you submit an application to apply for the position then you need to sit and wait until you reach 20 or 25 years of experience in teaching to be eligible to apply. For me I went to apply with one of my colleagues, and then told us anyone who got employed earlier will be more eligible for the job.  
I don't understand how a person who has been teaching for 30 and 35 years will be able to give? Most probably these people would prefer to retire than taking a new role. But a person who has been teaching for 15 and 20 years will still able to be creative. We saw what happened few years ago with old generation when the ministry imposed a software called (Maaref) that is specialised in entering all students grades. Teachers and administrators were forced to enter the computer world to know how to use it. We saw how some of them didn't know anything about computers.  
I believe in new blood and young generation to take the lead. The ministry rules and conditions need updating every five years.
- 41     Researcher    Do you have freedom in your class?
- 42     Sohila         Yes, I am the queen of my class; I thank God for our head teacher who is giving us freedom to do what we think is right with our students. I sometimes play with the sequence of the lessons in a way that makes more sense, for example I gave my students the lesson that talked about Haj before Haj instead of the begging of the year like in the book.
- 43     Researcher    Is there an area that you would like to have more freedom?
- 44     Sohila         You mean at work, outside my class I would like we have more freedom. Like the other day I went to the head teacher and told her that why do we need to do a morning assembly every day, why don't we specified specific days for assembly this will make our students feel a difference in routine. She replied that it will be hard to do that because it will be out of the norms and rules out from the ministry.  
I wish if for example I can't come to school for two days to tell my students not to come as well. This will make the students wanting to come after these two days instead of coming to school and not doing anything. Why do students need to do the same routine? That is why our children don't like to come to school, because there is nothing to attract them.  
I wish if they change these old rules that they follow. For example our head teacher will retire this year with a huge amount of experience working in the field, why don't they take her as a consultant. The consultants the ministry assign didn't work in the field. There are a huge amount of retired candidates with a lot of experience and information, the people that the ministry give higher positions supposed to be from these experienced people who worked hard for years in the field, who can understand what the teacher and the student are going through in their daily lives.
- 45     Researcher    Is there a personality or a person that you look up to?

- 46      Sohila      I like to read to authors and people who inspire me, like Mohammed and Nabeel Al-Awadi (Islamic scholars) who went out of their field and explored new things. Also in my community I have a cousin who I always look up to, I name him the Octopus because he works in everything, he is a doctor but at the same time always develop himself in different disciplines, I like this personality. For example sometimes we have a training and some of the teachers say “oohh no I can’t go I don’t have anyone to take me, I don’t have driver” I tell them imagine that your everyday work is there what would you do? You would find solutions to go to work.  
I like to break all the barriers. I used to have a supervisor called Hayat Rabee and my current supervisor Maida Adeeb that I really like. Mrs. Maida is amazing, she always feel for the teachers, She is very knowledgeable and I love that she always develop herself and try new things from knowledge to technology, she made a WhatsApp group for all teachers who she supervise, I love what she posts in the group. Although she has been for a long time in education, she always develop herself and look for new things. I like a person who always develop themselves, try new things and go out of their comfort zones.
- 47      Researcher      What do you wish for?
- 48      Sohila      I wish our ministry to change, to have a new vision of what does the student want, what does the field need , what makes students like to go to school
- 49      Researcher      How can the ministry change from your point of view?
- 50      Sohila      By making rules more flexible, like the examples I gave you earlier of not having assembly every morning.  
You find teachers hate going to work, why the ministry don’t put an option that a teacher can come to school only to give her lessons and go, they can make a rule for payment that she get paid on the amount of lessons she teach. Since the education what builds societies, they have to take care of teachers. The current education minister once said before he takes his role as a minister that if they put me as educational minster I would increase the salary of the teacher to make it the best paid salary in the government sector.  
Look at the amount of retired teachers last year; it is more than 7000 teacher. Why they chose to retire because of all the pressure placed on the teacher. If they gave us a bet more freedom or let’s say flexibility this pressure will get reduced. The ministry needs to break the routine;  
since I was a student we had the same routine. Only small things need to be changed that will reduce pressure.
- 51      Researcher      Can you give me example of these small things
- 52      Sohila      Like the activities that teachers need to do that has no impact on students at all, it is not beneficial and just increase pressure on the teacher. And also the continues evaluation system that the ministry adopted in the past few years made the students stop connecting with the educational process, they always forget their books..
- 53      Researcher      You think that the continues evaluation has negative impact on education
- 54      Sohila      Yes a lot, because it was not implemented in the right way.
- 55      Researcher      Thanks a lot Mrs. Sohila for your time today
- 56      Sohila      Thank you and I really wish people like you who had the opportunity to study

abroad to hold positions because you saw in practice how things can be done differently. I tell Mrs. Maida our supervisor after she tell us how happy she is with our achievements, that we need special awards. She asks what kind of reward you want? I tell her we don't want a regular reward we want reward with some action, take us with you to training outside Jeddah, in Riyadh or anywhere .. we want some action.

- 57     Researcher    Do you think your husband will allow you to go to training outside Jeddah  
58     Sohila         Yes I think he will, since he agreed in the first place that his wife to have a career  
                         and to put her Abaya on her shoulders and to go to work , he will not mind as  
                         long it is related to work.
- 59     Researcher    Thanks a lot Mrs Sohila for your time, I really appreciate it

## Appendix 7 Example of Arabic Transcribed Data

أنا هل تلك المدارس الحكومية فيها غرفة مصادر؟  
 حسان: آيوة أعلني المدارس منها غرفة مصادر.  
 أنا: غرفة المصادر عبارة عن مايش؟

غرفة اعطيت ومصادر القلم عبارة عن غرفتين، كول واحد  
 غرفة اعطيت فيها بعض الكتب ومصادر القلم، فيها Datasoft  
 وطابع و آلة تقوير و ادبيرة كمبيوتر . مجموعة كتب التي (00:55)  
 ترد ! لينا فقط من الوزارة . لانستطيع اضافة اي كتاب من  
 قبل الاهالي او المعلمين او الإدارة فقط مايرر إيمان الوزارة.  
 صنع منعا باتا اضافة اي كتاب . ولهذا بتعطي رس من الوزارة  
 صنع اضافة اي كتاب حارس والتأكد جميع الكتب الموجودة  
 هي التي صدرت من الوزارة نفسها . الغرفة الثانية تكون هذه  
 الغرفة تسمى غرفة التعلم الذاتي . الغرفة الثانية تسمى غرفة القلم (1:16)  
 الساعي وهي عبارة عن مجموعات قانونية وتكون الصورة الذكية  
 ومبارز projector فيها والقانوني السحري أي جهاز عبيد  
 تسمى اضافة لنا عند طريق الوزارة يوجه في غرفة مصادر القلم.  
 أنا: متبينة في كمبيوترات في الغرفة مايش هادي؟  
 كان عننا غرفة اسمها غرفة الحاسب من الوزارة ولان غير  
 مفعلة ، لم يتم توفير مطبعة حاسب آلي في المدرسة بينما المدرسة  
 تمتلك غرفة حاسب ب ٣ حاسب آلي ، لم يتم تفصيلها  
 من يوم أنشأت هذه المدرسة . مستهزئا لمدة ٧ سنوات ، الإدارة  
 القديمة طلبت ولان لم يستجاب النداء صلبا الادبيرة بعضها  
 عطلت لبقائها من غير عمل ومن غير تحديث ارضيانية.

معلومات عن  
 غرفة المصادر  
 ماذا تحتوي  
 This is useful when describing  
 the context. To explain to the  
 reader what is the resources room  
 computer  
 room  
 غرفة  
 (lack of resources)

دوري ، إذا ما تجلس الوكيله تجلس يومياً وراهم ما  
 سألوا . لدرجة مرة مدرسة نقلت فأخذت المظلمات حبسها  
 واستبدلتها مظلماتنا الفطارة . الحمد لله لما جات اميريه (أمان)  
 (2:13) والوكيلة (هند) إتغيرت كثير أشياء للأحسن . أنا أعتبر ألبه  
 أمان (صاحبة قرار) وألبه هند (بدر منفذه) . شفقت مزي  
 (التأثير الإيجابي) شاسع في الإدارات . مع بان الإدارة السابقه كانت رائعه واميريه  
 (الإدارة) كانت أم للصبي ولان اميريه الجديده رائعه . مع بان خاصة  
 في مجال عملنا يحطمان قواعد ويخطئنا قانون وأنظمة وزاره  
 (2:44) ماخض آهم فوقها كلنا تحتها ومع ذلك عندنا سياسة رائعه .  
 الحق زي ألبه أمان أنا ما شفقت ، ما تحاول مقف مع العملية  
 قبل أي شئ مثل الأمم مع أبنائها .  
 أنا ألبه هند متى بدأتني تتطوّل لوجيداً .  
 من حوالي 8 سنوات كانت فقط الحاسب المكتبى Desktop أول  
 ملاصقة حبة قلت ألبه أجبب حاسب في البيت وأصبحت أكتشفوا  
 ذاتياً . كنت بدرجتي عزى محتاج إقتال معلومات مستمر إنك  
 تبحثني معلومات ، أحياناً كنت أتغير مكان ما كان عندي  
 Internet لأن آخذ من الصبران ، لأن ما الحمد لله حسيك إنه  
 التقية ساعدتني أصبحت أقدر آخذ Internet من أي مكان  
 أشتريك laptop وهي تيسر أي شغل مفتوحه فصررت أستخدم  
 الجهارز وأنزل معلومات . صرت أعرض معلوماتي على جهازك لأنني أجبب  
 (3:22) المهارز معاً على المرحمة . أربح نفسي بدل ما آخذ 5 دقائق  
 نقل من السبورة صرت ¼ ساعة عن طريق شرائح Powerpoint

Biography

Learn to use technology  
 (Self dependent)  
 Personal  
 practice  
 Technology