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Digital Literacy Practices of Saudi Female University Students

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Acknowledgements

Declaration

I, *Areej Hammad Albawardi,* confirm that this is my own work and the use of all material from other sources has been properly and fully acknowledged.

Abstract

This study examines the way young Saudi women use language and other communicative resources in their digitally mediated interactions. It is motivated by the debate in Saudi Arabia on the impact of digital media on the way people use language, especially Arabic, the way they manage their social relationships, and the way they enact their cultural identities. The study was conducted at a women's university in the eastern part of Saudi Arabia. A hundred and three participants were asked to complete a questionnaire on their online language use. Forty-seven of those participants were asked to keep a detailed literacy log of their digital practices over a period of four days and to submit samples of their interactions for closer analysis. The theoretical framework used to analyze the data combines concepts from new literacy studies (Barton & Hamilton, 1998; Gee & Hayes, 2010; Street, 2003), multimodal discourse analysis (Kress & Van Leeuwen, 2006; Jewitt, Bezemer, & O'Halloran, 2016), and mediated discourse analysis (Jones & Norris, 2005; Scollon, 2001). The framework sees people's language use in terms of social practices and explores how those practices are affected by the different media people use to communicate, and how mediated communication is linked to broader issues of culture and identity.

The analysis reveals that the participants' digital practices are multimodal and multilingual, and the choices they make about the codes and modes they use take place in the context of a complex nexus of practice, involving the interaction among (i) the affordances and constrains of the different technologies they use, (ii) the demands of their social relationships, and (iii) their individual experiences and socialization into different ways of communicating. By appropriating different codes and modes in different ways in social media, young Saudi women are able to strategically situate themselves in different cultural 'worlds', maintaining traditional identities and cultural practices while at the same time enacting new kinds of identities. The study contributes to the debate on the effect of digital media on language use by adopting a sociocultural approach which links language use to social practices, social relationships and social identities.

List of Publications

- Albawardi, A. (2017). Digital literacy practices of Saudi female university students: insights from electronic literacy logs. Language Studies Working Papers. University of Reading, UK.

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Chapter 1
Introduction

This thesis investigates the online interaction of female Saudi university students studying in the English department at Imam Abdulrahman Bin Faisal University in Dammam. The digital practices of these participants, specifically on WhatsApp and Snapchat, are the major focus of this study. In this chapter, I will introduce the research problem by introducing the debate about the online language used by young people in Saudi Arabia as part of the ongoing global conversation about the impact of digital media on young people's language, literacy, cultural identities and social relationships.

1.1 Introduction to research problem

Digital media use has been expanding rapidly among Saudi young people, and young women are at the forefront of this expansion. Despite the late introduction of the Internet in Saudi Arabia in 1999, the rate of Internet penetration has increased by 3750 per cent since then, and those aged between 19 and 35 account for the highest percentage of Internet users in the country (Simsim, 2011). In 2016, 59 per cent of the total Saudi population were active social media users (GlobalWebIndex, 2017). This high rate has put Saudi Arabia at the top of the ranking for social media use worldwide. According to BBC News, "Saudi Arabia has the highest per-capita YouTube use of any country in the world" ("Saudi Arabia profile - Media," 2015, January 23), and, according to Social Clinic, a social business consultancy and social media agency in Saudi Arabia, in 2013, Saudi Arabia was ranked first in the use of Twitter globally as illustrated in *Figure 1.1* ("Saudi Arabia ranks first on Twitter worldwide," 2013). Furthermore, in 2015, Saudi Arabia was ranked 7th in the world for individual social media accounts per individual with an estimated seven accounts per person, 8th globally in the use of Snapchat (26 per cent of Saudi teenagers use Snapchat), and 14th globally in WhatsApp use (WhatsApp is the most popular social network with a 27 per cent penetration rate) ("Saudi social media users ranked 7th in world ", 2015, November 14).
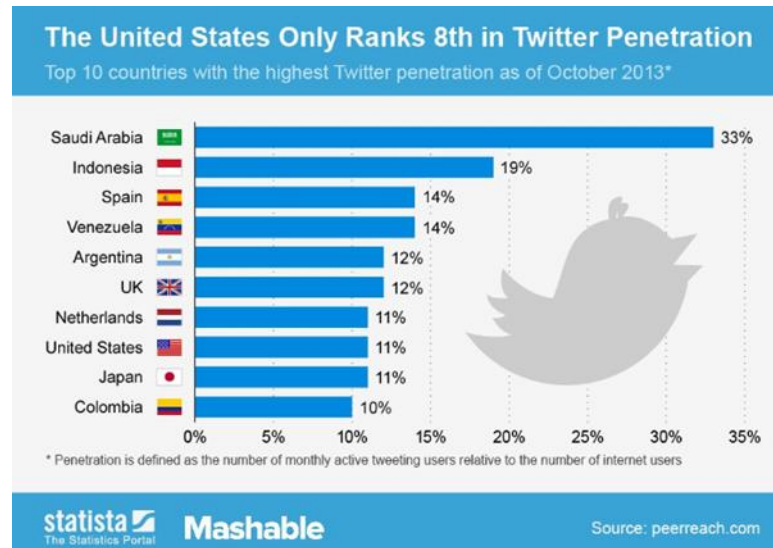
Figure 1.1 Saudi Arabia ranked first on Twitter worldwide (Source: Social Clinic, 2013)

This rapid expansion of digital media use by young people has attracted significant attention in print, broadcast and social media. Among the prevalent attitudes expressed are fears that new ways of using and mixing languages, such as the use of "funky" Arabic in "ASCII-ised" form (Palfreyman & Khalil, 2003, "Abstract"), by young Saudis might be having negative effects. Over the last few years, a popular quote has been circulating on social media platforms that is attributed to a Western scholar of Arabic condemning the use of Internet language instead of Arabic:

> There is no language on earth that has the same magnificence as the Arabic language but there is no nation on earth that seeks to consciously or unconsciously destroy their language like the Arab nation. They are destroying with their own hands a language honoured by God for being the language of the Quran. I am astonished how nowadays the words *thank God* are written as *el7amdollah*. (Host, 2011) [Author's translation]

The quote plays on deeply-rooted fears about the destruction of values, culture and religion. The kind of language referred to in this quote – illustrated by the example of *el7amdollah* – is part of a new variety adopted by young Arabs in which Arabic script is replaced by a combination of Roman letters and English numbers. This variety has been given several names, such as e.Arabic (Daoudi, 2011), Arabish, Arabizi or "3arabizi" (Bianchi, 2013a).

The spread of this 'new language' has raised concerns about its effect on the literacy of Arab young people. Some studies have claimed that social media has a

negative impact on Saudi students' academic performance (Al-hussaini, 2009, May 6; Alwagait, Shahzad, & Alim, 2015). Al-Khatib and Sabbah (2008), for example, conclude that Arabish has had a negative effect on Arabs' writing:

> It is worth mentioning that this form of Romanized Arabic did not exist before the advent of the Internet, and it can be noticed that there is a heavy use of this new form of written communication among students to such a degree that the traditional way of writing Arabic is counted out. (Al-Khatib & Sabbah, 2008, p. 46)

This opinion is shared by Arabic language teachers, one of whom commented in the *Arab News* that Arabish, and its 'pollution by English', has a 'harming effect' on students' Arabic writing, stating:

> [T]he new language is strengthening the English language and abusing Arabic. In the past girls were much better at Arabic, but Arabish is slowly obliterating the features of the alphabet… Children are being spoiled by being given mobile phones with chat websites. This is making Arabic more difficult to understand and less respectable while taking care of English, which has become a source of pride between teenagers. (Al Ghabiri, 2013, April 20)

At the same time, there is also the concern that Internet language may be affecting students' ability to acquire good English. Lingwood and Hussein (2012) examined attitudes of Jordanian undergraduate L2 learners of English regarding the effect of Internet communication on Arabs' ability to write standard English. The researchers categorized the effect of online communication on written standard English under three aspects: the "relaxed attitude towards the use of standard English forms", "the increase in the use of symbols, ellipsis, dots and abbreviations" and "the freedom to coin new words" (Lingwood and Hussein, p. 51).

Others have claimed that the use of social media and the values it promotes might also be at odds with Arabic and Islamic cultural values. Many Islamic countries, such as Saudi Arabia and Malaysia, filter access to the Internet for this reason (Bertot, Jaeger, & Grimes, 2010). In 1999, Saudi Arabia implemented a strategy to censor Internet access, commenting that it is necessary to protect citizens and their values from being morally offended online (Klotz, 2004). Fear of being exposed to destructive ideas promoted by other online users is also among the concerns of Saudi university students themselves (Al-Sharqi, Hashim, & Kutbi, 2015). Finally, some studies claim that

discussions in online communities have made some Saudis confused about some matters related to religion (Al-Saggaf, 2004).

Additional concerns have been raised about the negative effects of the Internet on people's social interaction and their ability to engage in meaningful discussions and to form meaningful relationships with others. Saudi family relations are seem to be in danger as a result of long hours spent on social media , allowing for little or no time for social contact between parents and children (Al-Haidari, 2015, April 8; Alolyan, 2015) or for attending to family commitments (Al-Saggaf, 2004). Some even refer to social media 'addiction' (Al-Menayes, 2016) and point to the 'social introversion' caused by the long hours spent online (Hashim, Al-Sharqi, & Kutbi, 2016).

At the same time, there are other voices in the media that celebrate young people's use of digital media, arguing that it actually encourages linguistic creativity and helps students improve their social skills. Several researchers also champion social media as a tool for Arab students to improve their English language and writing skills (Al-Salem, 2005; Alsaleem, 2013; Bataineh, 2015; Kutbi, 2014; Mahdi & El-Naim, 2012; Mahmoud, 2013). Alsaleem (2013), for example, shows that using WhatsApp for electronic dialogue journals has positive effects on undergraduate Saudi students' writing skills, including vocabulary choice and style. Furthermore, Ahmed (2015) shows that Twitter has increased the opportunity for female university students to practice English and has improved the quality of their writing with regard to content, organization and style. Moreover, online interaction with different people can enhance personal social skills; young Saudis who have used social media have gained more self-confidence, open-minded thinking, and improved awareness of their individual characteristics and the opposite gender (Al-Saggaf, 2004). Social media can give Saudis open platforms for self-expression (Guta & Karolak, 2015) and as a result can enhance their communication skills (Hamdan, 2014).

Although these debates are to some degree a reflection of the particular socio-cultural situation in Saudi Arabia, they also reflect the larger global conversation about the effect of digital media on young people's literacy and social relationships. Many media portrayals of adolescents' use of digital media in other countries raise many of the same concerns about students' language use. This debate can be seen in studies of media portrayals of young people's declining language skills, as documented by many

scholars (Lenhart, Arafeh, & Smith, 2008; Lingwood & Hussein, 2012; Plester & Wood, 2009; Plester, Wood, & Bell, 2008; Rosen, Chang, Erwin, Carrier, & Cheever, 2010; Thurlow, 2006; Thurlow & Brown, 2003), and in portrayals of the effect of digital media on young people's attention spans (Carr, 2011; Paul, Baker, & Cochran, 2012). In other academic studies, psychologists and educationists have examined the effect of online communication on social behavior such as cyberbullying (Gahagan, Vaterlaus, & Frost, 2016; Smith et al., 2008; Whittaker & Kowalski, 2015) and narcissism (Marshall, Lefringhausen, & Ferenczi, 2015).

Conversely, other researchers, have found that Internet use might have positive impacts on literacy (Powell & Dixon, 2011; Wood, Kemp, & Plester, 2014), verbal reasoning (Plester, Wood, & Joshi, 2009) and writing skills (Doan, 2008; Mahfouz, 2010). Online interaction has also been seen to benefit social relations as it increases connectivity, self-esteem (Utz, 2015), social support, adjustment (DeAndrea, Ellison, LaRose, Steinfield, & Fiore, 2012), and interaction with family and friends (Sponcil & Gitimu, 2013). On the whole, linguists have concluded that there is no indication that language being affected negatively by digitally mediated communication (Baron, 2010a; Crystal, 2008).

Some scholars, such as Thurlow (2006), who investigated these debates in contexts such as the United States, Great Britain, Continental Europe and Asia, point out that concerns about literacy, cultural values and morality, and social relationships are often interrelated. This relationship can be seen in examinations, for example, of "moral panics" (Thurlow, 2006, p. 685) regarding digital media use and "verbal hygiene" (Cameron, 1995, p. 1) directed at new forms of online language. What such studies highlight is the fact that understanding people's attitudes towards language in digital media requires an understanding of the broader relationship between language and social identity.

Understanding the relationship between language and society is the main theme of Deborah Cameron's book (1995) *Verbal Hygiene*, in which she sheds light on attitudes to language and how people have attempted to regulate it. By *verbal hygiene*, she means the attempts and efforts to clean up or improve languages (Cameron, 1995). These attempts have engaged people in metalinguistic discourses that have always related issues of style, grammar and good writing to issues of character, morality, and

the preservation of cultural standards. One example of practiced authority over writing can be seen in the rules and traits of good writing; Cameron suggests that there are two prominent traits of good writing, which are uniformity and transparency. Internet language and the 'funky' way people communicate challenge these ideas in writing, as netspeak is neither uniform nor transparent. She indicates that 'verbal hygiene' is a discourse on two levels; it is not only about language, but also about attitudes, beliefs and values, stating:

> [S]tylistic values are symbolic of moral, social, ideological and political values. When we write, as Berel Lang points out, we are constructing not only a representation of the world but also a representation of ourselves as social and moral agents… I am not suggesting that individuals should, or indeed *could* invent their own style of writing out of nothing, without reference to tradition or convention. I am suggesting rather that we need not take linguistic traditions and conventions so much at face value as we usually do: we can ask ourselves what they mean, and in the light of the answer, decide how far we wish to perpetuate them in our own use of language. (Cameron, 2005, p. 77)

This quotation emphasizes the fact that, in the context of verbal hygiene, linguistics and politics are interrelated and intertwined with authority, identity and agency. There are three reasons, according to Cameron (2005), for not questioning language. Firstly, language is a kind of authority that is respected, abided by and schooled. Secondly, language marks identity (in sociolinguistics) and constitutes it (in critical theory). Thirdly, there is the control of agents, i.e. people, over their language. Such authority, she claims, is maintained in all languages of all societies.

Arabic 'verbal hygiene' is not different from attempts to police other languages. There has been a struggle to preserve the Arabic language and keep it safe from any outside or inside forces of change. All attempts to anglicize the Arabic writing system, such as the 1880 attempt led by Spitta in Egypt, who called for adapting the slang dialect for writing using the Latin alphabet (Spitta-Bey, 1880), were rejected as they were seen as a threat to the Arabic and Islamic identity and the Holy Quran that is written in Arabic (Yaghan, 2008). With the advent of technology in the Arab world, the Arabic language is seen to be facing new threats as most Arabs are using spoken Arabic and Arabish in online communication. All concerns about Arabic language and identity

expressed by teachers and parents mentioned above can be characterized as a form of verbal hygiene.

1.2 The current study

The debate over the effect of online language on Arabic students' literacy and moral probity provides the backdrop for this study, which investigates the digital media use of female students studying English as their major subject in a large university for women in the eastern province of Saudi Arabia as a way of understanding the larger issues about the effects of digital media on the literacy, cultural values and social relationships of Saudi young people. It aims to discover what young Saudi women are *actually doing* when they use social media - WhatsApp and Snapchat in particular - what effect social media use has on the way they use language, the way they participate in their culture, and the way they manage their social worlds.

The thesis argues that young Saudi women are using digital media in general and WhatsApp and Snapchat in particular to communicate in complex ways to participate in a range of 'different worlds'. My stance is that understanding the effect of digital technology on students language use must take into account the interplay of communicative affordances that this technology makes available (Barton, 2015). This interplay can be seen in the wide range of multimodal and multilingual resources that they use when they communicate, including various 'codes' and 'modes' (that go beyond the stereotypical 'Arabish' that is portrayed in the media), which they deploy strategically according to the kind of topic they are discussing and the type of people they are communicating with. Within this kind of complex interaction, they construct different identities to fit into different worlds: the conservative Islamic Saudi society that encourages the use of Arabic and the adoption of certain identities; the world of the English department that opens horizons to new cultures and languages; and the digital world of social media with its various conventions and norms of interaction.

This study concludes that there is no single 'unitary' Arabic 'netspeak' nor evidence that the online language use of young Saudi women is endangering their ability to communicate effectively. Rather, young Saudi women show awareness of when to use different codes, such as Arabic, English, Arabish and Arabicized English, and modes, such as images and voice messages, based on who they are talking to and

what they are talking about. The participants draw on a range of semiotic resources in creative ways in order to accomplish particular social actions, adopt individual and cultural identities, and manage social relationships using the new affordances for communication that WhatsApp and Snapchat make available. In this way, young Saudi women use digital media as a way to navigate and negotiate various aspects of their social identities and their participation in their communities of practice, in some cases preserving traditional cultural patterns of communication and in others creating new ways of interacting and opening up spaces for new forms of cultural and social identity.

1.3 Aims of the study

The aims of the study are:

1. To explore young Saudi women's online practices;

2. To investigate how the participants use different linguistic and technological resources to accomplish different purposes and engage in different social actions;

3. To explore how young Saudi women develop vernacular digital literacies; and

4. To examine how these literacies are used as tools to adopt situated and cultural identities.

1.4 Structure of the thesis

This thesis is divided into eight chapters. The next chapter, Chapter two, reviews the literature on computer-mediated communication. It presents the literature under three main traditions that have guided research on online interaction. The first approach to online communication is a structural one which has focused on the linguistic characteristics of what is seen as a 'new linguistic variety'. The second is a more sociolinguistic approach focusing on social variables, including, for example, gender, age and language background, that may affect online language use. The third approach is a sociocultural one that looks at language as a social practice. The starting point of this approach is not language per se but the social practices in which language is embedded. The chapter argues that in order to gain an insight into digitally mediated interaction, structural descriptions of the language used and social factors such as age

and gender should be positioned in the situational, social and cultural contexts of interactions. The literature review ends with the research questions.

Chapter three describes the theoretical framework adopted to investigate computer-mediated communication. As this study aims to investigate the digital literacy practices of female Saudi students, the theories which are relevant need to account for: 1) *online* interaction that is digitally mediated and multimodal; 2) *practices* that are more than reading and writing; and 3) the *Saudi* culture. Within a sociocultural framework, several theories are adopted: *translanguaging* (Creese & Blackledge, 2010; García, 2009), which views language use, including the use of different codes and modes, as part of people's social practice, *mediated discourse analysis* (Jones & Norris, 2005), which focuses on mediation, actions and cultural tools; *new literacy studies* (Barton & Lee, 2013; Gee, 2015b; Street, 2003), which focuses how reading, writing and semiotic systems are tied to social practices; and *multimodal discourse analysis* (Kress & Van Leeuwen, 2001), which focuses on how technology has made interaction and social practices more multimodal. In examining digital practices, these approaches take "situated social practices that people use discourse to perform" as the starting point rather than texts or language (Jones, Chik, & Hafner, 2015, p. 2).

Chapter four builds on the theoretical framework by explaining how these theories are applied in the investigation of computer-mediated communication. The chapter shows how the investigated concepts are operationalized, what data was collected, and what tools were used in the data collection and analysis. The chapter starts by describing the sample of the study and the tools for data collection, including the questionnaire, literacy logs and samples of computer-mediated interaction. The data analysis is also explained; there is a descriptive analysis of the data and more detailed qualitative analysis of selected examples from WhatsApp and Snapchat. Ethical considerations with regard to participants and their data are reviewed in this chapter.

Chapter five provides a descriptive analysis of the data. The descriptive analysis includes four types of data: a questionnaire, literacy logs, the coding results of WhatsApp chats and the coding results of Snapchat. The questionnaire provides some background information about the participants, the purposes of online communication, and opinions with regard to some practices online. The literacy logs provide a record of what the participants were doing on a daily basis by providing information on what they

do online, with whom, in what language, and for what purposes. The results from the coding process of WhatsApp chats and Snapchat are reported to give a real representation of what the participants are doing online; the relations and links between the codes, modes, topics and recipients involved in the participants' interactions are also presented. The chapter ends by explaining the need to focus on some selected examples from WhatsApp and Snapchat in the following two chapters.

Chapter six focuses on an in-depth analysis of WhatsApp. The analysis in this chapter supplements the analysis in the previous chapter by analyzing selected interactions in detail. This detailed analysis contributes to the understanding of what motivates linguistic choices based on a better understanding of actual interactions. It also enables the understanding of how these micro choices in interactions are related to macro conditions governing cultural norms. Several examples that highlight aspects under investigation are presented and analyzed. The analysis of samples focuses on highlighting the model developed. The interaction model accounts for the complexity of interaction as it considers a nexus in which affordances, relationships and cultures intersect.

Chapter seven provides a more detailed analysis of Snapchat. Similar to the detailed analysis of WhatsApp, the same focus of analysis is adopted in this chapter. The focus of this chapter is on how different codes and modes are integrated by users to accomplish actions, adopt identities and manage relationships. Moreover, the idea of *emplacement* is investigated in relation to how it affects mediated interaction.

Chapter eight is the final chapter of the thesis. It provides the main findings, the discussion and the conclusions. The contributions of the thesis to theory and practice are accounted for and presented on four levels: context, methodological tools, data, and results/conclusions. The chapter also provides recommendations for further studies.

Chapter 2
Literature Review

2.1 Introduction

The previous introductory chapter presented several concerns raised in Saudi Arabia by educators and parents regarding the impact of digital media on language, identity and relationships. In order to address these concerns, it is necessary to undertake an empirical examination of Saudis' actual digitally-mediated interactions and language. This study attempts to such examination. In the past, a variety of theories and approaches have been adopted to analyze digitally-mediated communication. This chapter reviews the literature on language and digital media, tracing three main stages of research in Europe, the United States, and Australia, and then moves to review relevant literature in the Arab world.

It starts by looking at research that focuses on the *linguistic* aspects of digitally-mediated communication, and moves on to consider more *sociolinguistic* and *discourse analytical* approaches, ending with an account of *sociocultural* approaches informed by *mediated discourse analysis* and *new literacy studies*. This study adopts the view that digitally-mediated communication is best viewed as a set of literacy practices, in line with the more sociocultural approaches that will be described below. The argument presented is that investigating language alone is not sufficient to understand digitally-mediated communication or to make judgments about literacy; digitally-mediated communication involves language, social identity, culture, and relationships. Literacy is not just about grammar or how language looks in textbooks; it is about how people use language to negotiate and enact their cultures, preserving the old and developing new ways of interaction.

2.2 Digitally-mediated communication

2.2.1 Linguistic approaches to online communication

The first studies that investigated language and digital media were mostly concerned with the linguistic aspects and structural features of the 'new language' that

people use online. The advent of technology and the move from page to screen have altered the way people use language; new literacies are emerging as people produce, write, visualize and navigate language in new ways (Snyder & Joyce, 1998).

A key topic in this early tradition was to compare the linguistic features of computer-mediated communication with those of speech and writing. In other words, linguists tried to understand the properties of Internet language by comparing it to traditional language modalities (Herring, 1996b; Jonsson, 2013; Ko, 1996; Nishimura, 2013 November; Tim, 2013). The questions "Is email a variety of speech?", "What important properties does it share with writing?", and "Does it have emergent qualities that are unlike those typifying speech or writing?" were amongst the popular ones raised in this tradition (Baron, 1998, p. 134). The result was language-focused research that did not consider, at that early stage, any social or contextual factors. Studies that exemplify this tradition are corpus-based studies that compared online data to written and speech corpora (Ko, 1996; Tim, 2013; Yates, 1996).

Yates (1996), for example, collected messages from an online conferencing system at the Open University in the UK, and compared them to written and speech corpora. The results of Yates' study indicate that online data is closer to writing in relation to the vocabulary range used, which was attributed to medium deterministic forces: online users use computers to pack information in texts which are more similar to writing than speech. Another corpus-based study was conducted by Ko (1996), who used corpus analysis of a synchronous chat in a university setting to quantify the linguistic features of interactivity versus informativity, such as pronouns, demonstratives, hedges and wh-clauses, and word length. The study is a comparative one that includes, besides the computer-mediated communication data, corpora of written and spoken British English, which are used in the comparison. Some of the linguistic features analyzed in this study occur more in speech and writing, and others occur less in the two compared corpora. One explanation for the results is that the physical mode of computer-mediated communication shapes language use (Ko, 1996). In summary, these studies conclude that computer-mediated communication is similar to traditional speech and writing. These studies also conclude, however, that this new language can differ from speech and writing and they attribute these differences to medium factors.

Another focus in linguistic approaches has been to define computer-mediated communication as a 'new language'. Amongst the labels given to Internet communication in the literature are 'Internet Language', 'Net language' and 'Netspeak'. Crystal (2006, p. 18) defines *Netspeak* as "a type of language displaying features that are unique to the Internet … arising out of its character as a medium which is electronic, global, and interactive". Petrie (1999) uses the term 'emailism' to refer to stylistic features, such as the use of emoticons, and excessive use or lack of punctuation, that is found in emails and rarely found in other forms of writing. Other labels include *textisms* or *textese* (Drouin & Driver, 2014). Some researchers, (Crystal, 2004; Drouin & Davis, 2009; Plester et al., 2009), have provided detailed lists and glossaries of features and structures in Internet language. Amongst the features that have interested researchers are abbreviations, acronyms, emoticons, and non-standard spelling and grammar (Crystal, 2001, 2006). These features have been investigated in emails (Baron, 2002; Lee, 2007b; Maynor, 1994), instant messages (Baron, 2010b; Lee, 2007b), and SMS texts (Tagg, 2009). Maynor (1994), for example, gives a description of the linguistic features of *e.style* as follows:

- Acronyms: BTW

- Emoticons: ☺ , :0

- Capitalization: all capitals or no capitalization

- Punctuation: repetition (?????) or deletion

- Spelling: simplified (thru) and phonetic (thanx)

Many researchers have criticized studies that adopt this approach for overgeneralizing the prevalence of these features (Androutsopoulos, 2006; Barton & Lee, 2013), and claiming that the features of Netspeak remain consistent across platforms (e.g. email, SMS and social media sites), and across sociocultural contexts. Androutsopoulos (2006), for example, argues that sociolinguistic and individual aspects are neglected by the use of such terms. Overgeneralization of Netspeak features (e.g. the use of abbreviations, acronyms and emoticons) is partly a result of classifying 'Internet language' as a new register or 'language' on the basis of its surface differences with traditional writing and speech such as the studies explained above (Ko, 1996; Maynor, 1994; Yates, 1996) without recognizing the role of context or culture in these differences.

As a result of this criticism, Crystal (2010) revised his view about Netspeak, now preferring the term 'digitally-mediated communication' to describe how digital devices (not only computers) have altered the notion of text. The adoption of terms such as 'digitally-mediated communication' has helped pave the way for more sociolinguistic approaches to examining Internet language that take into account social and situational contexts. This is partly reflected in Crystal's later work, in which he shows that digitally mediated communication, as a new variety, gets closer to writing in formal situations, such as business emails, and closer to speech in informal situations, such as SMS text messages sent to friends.

What often characterizes linguistic approaches to digitally-mediated communication is a kind of 'technological determinism' (Markus, 1994; Markus & Robey, 1988), which assumes that the most important factor influencing these linguistic practices is the technological medium. Studies within this tradition assume that the technological medium shapes the language of communication (Ong, 1982; Peyton & Batson, 1986; Yates, 1996). For example, Yates (1996) and Ko (1996), as explained above, attributed the linguistic features they found to technological forces. At a metalinguistic level, names given to the new language used in computer-mediated communication such as 'Netspeak' and 'Internet language', reflect this deterministic view (Squires, 2010).

During the same period, there was also a strand of research in communication studies known as computer-mediated communication or 'CMC' research, which also focused on the effects of digital technology on communication. Although researchers in this field rarely focus on the linguistic aspects of CMC, their approach involves the same kind of technological determinism that leads them to conclude that computer systems work to determine the kind of social interaction that is possible by users. Amongst the most influential theories to come out of this research is the "cues filtered out" theory of Sproull and Kiesler (1986). This theory posits that text-based computer-mediated communication is basically an imperfect imitation of face-to-face communication, and that communication over computer systems is inherently less efficient, especially for establishing and maintaining relationships, because users lack access to cues like facial expressions, intonation, and gestures. This theory was later called into question by researchers like Walther (1997), who, in his 'hyper personal model' of computer-mediated communication, argues that, in some cases, computer-

mediated communication actually facilitates interpersonal aspects of communication such as intimacy.

The same deficit model seen in the analysis of digitally-mediated communication was also seen in investigating code switching online which adopted a similar structural model. This surface linguistic perception of the study of code switching was influenced by the idea of *bilingualism* as a matter of *dual languages*, and the view of "languages as separate codes with different structures" (García & Wei, 2014, p. 12). These views were bolstered by findings from neurolinguistics indicating that different languages are located in different parts in the brain (Fabbro, 2001; Kim, Relkin, Lee, & Hirsch, 1997). Under this approach, code switching was often considered as 'interference' and 'deviation' from the norm, and the task of linguists was to account for these instances of deviation (Weinreich, 1968). Early research on online code switching took a similar structural approach to investigating language variation (Cotterell, Renduchintala, Saphra, & Callison-Burch, 2014; Siebenhaar, 2006). Most of the work on code switching online, as with research on off-line code switching, is still characterized by a monolingual bias, and a view of the phenomenon as a matter of the mixing of two static languages (García & Wei, 2014).

Linguistic approaches to Internet language were also prevalent in the investigation of digitally-mediated communication in the Arab world. The major difference between the history of English and Arabic CMC, however, is that Arabs could not interact using Arabic in the early days of Internet. When the Internet was first introduced to the Arab world in the 1990's, 80% of it was in English (Crystal, 2001) and only one ASCII system of writing (English) was available. Until March 1999, there was no Arabic interface (Darwish, 2013). Arabs were confronted with a medium for interaction that used a second, or even a foreign, language that was not available to everyone.

Therefore, a method of transliteration was used to communicate in Arabic via Roman script (Chalabi & Gerges, 2012 December). As a response to this technical constraint, a new Internet Arabic (Palfreyman & Khalil, 2003) was developed that attracted the attention of users, researchers and the media. Various names have been used to refer to this variety: ASCII-ized Arabic (AA) (Palfreyman & Khalil, 2003), e.Arabic (Daoudi, 2011), Arabizi (Darwish, 2013), and Arabish/3arabizi (Bianchi,

2013b). This language is based on a combination of Roman letters and Arabic numbers. Yaghan (2008) defines Arabish or Arabizi as follows:

> "Arabizi" is a slang term (slang: vernacular, popular informal speech) describing a system of writing Arabic using English characters. This term comes from two words "arabi" (Arabic) and "engliszi" (English). Arabizi is a text messaging system used over the Net and cellular phones. (P.39)

Arabizi or Arabish is not only used to present informal and dialectical Arabic, but also, in some cases, for modern standard Arabic. It is usually mixed with English text in informal contexts. Numbers are also used in Arabish due to the fact that there are more letters in Arabic than in English, hence, numbers are used to phonetically represent sounds that are not found in English (Darwish, 2013). Crystal (2008, p. 125), also, commented on Arabic online texts explaining how numbers can be used instead of the letters that are not found in English; for example, number 2 is used to indicate the Arabic glottal stop "so that *inshallah* 'God willing' appears as *insha2llah*" (p. 125). Arabish is used to represent modern standard Arabic, and different dialects that have morphological and phonological differences. Consequently, Arabish does not conform to fixed spelling conventions (Darwish, 2013).

Another important change in Arabic computer-mediated communication took place after the introduction of Arabic keyboards. The release of Internet Explorer 5.0 in March 1999 contained the first version to support the use of Arabic. Users were able to text using Arabic script instead of English. Texting in Arabic using Arabic script is different from texting in English. It differs in the direction of writing. This fact imposes some constraints on code switching online. Arabic text is typed from right to left as opposed to English, which is typed left to right. Other differences from English Netspeak include no abbreviations or letter dropping in Arabic online communication. Even after the existence of Arabic supported systems, however, Arabish continues to be used for several reasons, such as users' proficiency in Arabish, and familiarity with the English keyboard (Darwish, 2013).

As with work on computer-mediated language use in other contexts, investigators using this structural approach have tended to characterize e-Arabic as 'a new language'. This variety of Internet language uses a mixture of Arabic letters,

Roman letters, numbers, emoticons and words from other languages (Daoudi, 2011). Daoudi (2011) focuses on the phenomenon of borrowing from other languages in what she called e-Arabic as a result of the impact of French and English colonization. As a part of her study, she analyzed a corpus of different Arabic texts including DMC, legal and computer science and e-literary texts (novels published online), to investigate the impact of other languages. The study indicates that the phenomenon of borrowing from other languages is evident on the morphological level, figurative language, grammar and e-literature.

Studies that have examined this new variety include those that use tools from Corpus Linguistics. Similar to Ko (1996) and others who used corpus analytical tools to investigate Netspeak, Palfreyman and Khalil (2003) examined a corpus of IM messages that contained selected Arabish texts from female Emirates students. The study aimed to investigate the representation of Arabic sounds, vowels and consonants in Arabish. Abu Elhija (2014) investigated Electronic *Amiyyas*, which are written dialects, by examining the 'consonantal system' used in several Arab countries. The study indicates that technology affects language and that language affects technology, not only by finding ways to show the spoken in written forms, but also in creating ways to show the different colloquial versions in writing.

Besides code switching, script switching is also a feature of Arabic texting. As the technology started with Roman letters, Arab texters found a way to communicate using the Arabic language via Roman letters using 'Arabish' or 'Arabizi' (Bianchi, 2013a; Darwish, 2013). Darwish (2013) developed a system to identify and transliterate Arabizi on Twitter. The study aims to detect Arabizi within English texts and provide the Arabic equivalent. There were many problems with the detection, however, due to morphological and spelling variations. The transliteration was based on a generated list from 112 million tweets. Another system was developed by Elfardy, Al-Badrashiny, and Diab (2013) to identify Arabic code switch points. Code switching in this study does not refer to switching to other languages such as English or French, but rather refers to the switching within Arabic as a diglossic language. The system developed differentiates between modern standard Arabic and Arabic dialects. In this experiment, they tagged words from a modern standard Arabic corpus and Egyptian dialect. In all these studies, highlighting Arabish is a common feature that reflects a deficit model similar to the one found in the investigation of English Netspeak.

Research into the structural features of Arabic online communication reviewed above has focused on Arabish, Arabic, and code switching and mixing with other languages, such as English and French. There is another variety, however, that has not been examined, and this variety is what I will be calling 'Arabicized English'. Arabicized English is a term that will be used throughout this thesis to describe a system of writing English using Arabic characters. The availability of the Arabic interface system, and the freedom Arabs enjoy in manipulating codes in digitally-mediated communication, has allowed them not only to communicate in Arabic using Roman letters, but also to communicate in English using Arabic letters. For example, the phrase "see you" can be written with Arabic letters as "سي يو". This phenomenon is found and examined in the current data as one of the structural features characterizing the participants' online interaction.

What characterizes most of the approaches under this tradition is a kind of "deficit model" of digitally mediated communication (Thurlow, Lengel, & Tomic, 2004) in which 'Internet Language' is evaluated based on how it compares to traditional registers in spoken or written communication, and digitally-mediated interaction is compared to face-to-face interaction. This surface linguistic view of online communication has been criticized for its ignorance of semiotic and social complexity, as it encourages attention to specific forms at the expense of others (Androutsopoulos, 2011).

2.2.2 Sociolinguistic approaches to online communication

As a reaction to the limitations of the purely linguistic approach taken by early Internet linguists, and the techno-deterministic approach of early communication scholars, new approaches began to develop focusing more on the social context of Internet use and the characteristics of different Internet users. Rather than a structure-centred focus on 'Netspeak', researchers began to define *computer-mediated communication* as "communication that takes place between human beings via the instrumentality of computers" (Herring, 1996b, p. 1) emphasizing that people use language online differently according to different situations and purposes (Herring, 2007, 1996b; Herring & Zelenkauskaite, 2008). Barton and Lee (2013), for example, commented on this shift in focus saying:

This direction of research acknowledges that, on the one hand, regular similarities and differences occur within and beyond one single mode in CMC; on the other hand, in reality, users do not apply the same set of CMC features to all contexts; but they constantly reappropriate their ways of writing in different modes of CMC to suit different purposes. (p. 6)

According to Barton and Lee (2013), understanding the importance of investigating social and contextual factors surrounding digitally-mediated communication paved the way for social variation studies, which examined how different groups of users use language differently in emails (Baron, 2002), chatrooms (Jepson, 2005), and in SMS (Al-Khatib & Sabbah, 2008; Grace, Kemp, Martin, & Parrila, 2012; Tagg, 2012). Other studies looked at digitally-mediated communication in relation to different aspects of identity (Burkhalter, 1999), including gender (Chang, 2016; Herring, 1996a; Herring & Stoerger, 2014; Herring & Zelenkauskaite, 2008), and age (Pérez-Sabater, 2015, June).

This social perspective has also contributed to the emergence of studies of multilingualism on the Internet. The book, *The Multilingual Internet*, by Danet and Herring (2007) marked a turning point in research on digitally-mediated communication, which had previously focused almost entirely on English. English dominated the Internet in terms of languages available on websites, and as a *lingua franca* for interaction amongst different users. Research into multilingualism includes both studies of how people appropriate and mix different languages online, and studies that investigate varieties of English used online by users who speak other languages (Barton & Lee, 2013). These have included studies of the use of multiple languages to negotiate power and identity by Japanese online users (Matsuda, 2002), and multilingual self-presentation in email interaction by Greek users (Georgakopoulou, 1997). Research in the multilingual Internet has also included research on online code switching (Al-Khatib & Sabbah, 2008; Androutsopoulos, 2007; Warschauer, Said, & Zohry, 2002), and the Romanization of non-Roman scripts, such as the cases involving Arabic, Greek and Persian (Warschauer et al., 2002).

The view of bilingualism or multilingualism that has developed within the sociolinguistic perspective has shifted from the previous additive or dual one, which separates languages to the notion of *dynamic bilingualism,* which views languages as social phenomena and sees language users as social actors (Heller, 2007). This view

was influenced by major work in the field of bilingualism and code switching such as the work by Auer (1999) and Myers-Scotton (1993a), which emphasized the importance of investigating the social and interactional aspects of code switching in addition to structural aspects. This shift is seen as a rejection of the previous view of bilingualism as a matter of two autonomous languages; instead, languages are viewed as interdependent and supported by a cognitive kind of interdependence (Cummins, 1991).

The dynamic approach to code switching views social relations and identities not as fixed categories but rather things that are dynamically created and reconstructed in the sequence (or also simultaneity) of interactional events (Androutsopoulos & Georgakopoulou, 2003; Tsiplakou, 2009). This shift criticizes the old approach of examining predefined aspects of identity in isolation, such as age and gender, and promotes the examination of the co-construction of identities in discourse due to interactivity of all aspects of identity (Androutsopoulos & Georgakopoulou, 2003; Georgakopoulou & Finnis, 2009). As a result, language use is viewed in situated practice and as the "product of particular spatio-temporal and interactional factors" (Georgakopoulou & Finnis, 2009, p. 468).

Apart from the focus on the social characteristics of Internet users, this phase of Internet and language research was also characterized by increased attention to the *discursive features* of digitally-mediated communication. These features have been investigated using tools from traditional approaches to discourse analysis (such as pragmatics and conversation analysis) and with approaches developed especially for investigating digitally mediated discourse such as computer-mediated discourse analysis (Herring, Barab, Kling, & Gray, 2004). One of the early and influential examples of this kind of research is Herring's (1999) investigation of coherence in online interaction (Herring, 1999). Adopting methods from conversation analysis, Herring investigated turn taking, feedback, and adjacency in online interactions, concluding that although turns are often interrupted, and exchanges often overlap, users are able to overcome the limitations of text-based CMC and find order in the ongoing interaction. A number of other studies have also adopted methods from conversation analysis in order to investigate patterns in online interactions in relation to sequence and turn taking (González-Lloret, 2011), openings (Herring, 1999; Sacks, Schegloff, & Jefferson, 1974; Schegloff, 1968, 2007), responses (Rintel, Mulholland, & Pittam, 2001), and repair (Schönfeldt & Golato, 2003).

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A more comprehensive approach to doing discourse analysis in digital environments was developed by Herring (2007). Labeling her approach 'computer-mediated discourse analysis', she argued that the previous view of Internet language as a homogenous 'type', 'mode' or 'genre' called for a new system of classification that considers different types of online communication. The result is her 'faceted classification scheme' for digitally-mediated communication which takes into consideration social as well as technological factors.

These calls to new methodological approaches acknowledge how more recent forms of computer-mediated communication have a rich range of *semiotic resources* made available to users including modes such as image, audio and video. In contrast to the early days of the Internet, when researchers focused mostly on 'text-based communication', texts on the Internet nowadays are almost always multimodal (Jewitt, Bezemer, & O'Halloran, 2016, p. 25). *Multimodality* is an important characteristic of most social media platforms. Barton and Lee (2013, p.29) define modes or *semiotic modes* as "systems or resources that people draw upon for meaning making". As Kress (2003) argues, the representation of meaning through images is different from words; 'the world told' is different from 'the world shown' (Ventola & Guijjaro, 2009). The shift to the visual has accelerated as literacies have moved into the digital world. Even writing is visualized in a way that is different from its paper counterpart as there is control over the visual aspects of writing itself. Since the 1990s, different tools have been available to people to communicate visually and these changes have affected the relationships between language and image, writing and theories of meaning (Kress, 1998).

The shift from page to screen makes it easy for communicators to shift from one mode to the other, creating a world that is interactive and hypertextual. Users typically have access to a range of semiotic resources to select from depending on the meanings they want to make and the social relationships they want to construct. In other words, selection from the different affordances of these different communicative modes depends on the different needs people have in particular moments of communication (Kress, 2003). This realization that digitally-mediated communication involves images and other modes besides words motivated Kress (2003) to argue that digital technologies have ushered in a new kind of literacy, one that is less focused on

'encoding' and 'decoding' words, and more on "designing" texts and interactions using a variety of semiotic resources.

Research using multimodal approaches to discourse increased as Internet users gained control of the design of their online communication. Examples of studies analyzing multimodality in online communication include those analyzing multimodality in YouTube videos (Jewitt et al., 2016), Tumblr pages (Bourlai & Herring, 2014) and WhatsApp status messages (Sánchez-Moya & Cruz-Moya, 2015). These studies rely on theories from Systemic Functional Linguistics in their analysis of texts, emojis and videos, and how each mode has different functions as a social semiotic resource. This theory evolved from Halliday's (1989) social semiotics and provides the foundation for Systemic Functional Multimodal approaches (Kress & Van Leeuwen, 1996) which are concerned with the meaning-making potential of signs that combine variously in a multimodal situation.

Research into Arabic computer-mediated discourse has also been influenced by this second tradition, as attention began to be given to various social aspects of computer-mediated communication including for example code switching (Al-Khatib & Sabbah, 2008), self-image (Al-Salem, 2005), gender (Strong & Hareb, 2012) and globalization (Allehaiby, 2013; Daoudi, 2011). One feature examined using this sociolinguistic approach was code switching. Al-Khatib and Sabbah (2008), for example, investigated code switching between English and Arabic in a corpus of text messages exchanged between 46 Jordanian University students. The results indicate that in 95% of texts written in both languages, students used Romanized Arabic, i.e. Roman scripts for Arabic script (Al-Khatib & Sabbah, 2008). The study concludes that participants code switched between Arabic and English in different situations and for social considerations. Participants used Arabic for greetings and English for technical terms. Another study that looks at code switching is Warschauer et al. (2002) which investigates the impact of English on the Arabic language promoted by the advent of the Internet. The study examines the use of English and Arabic by Egyptian participants online and concludes that in formal situations using emails, English is used, whereas Romanized Arabic (Arabish) is used in interpersonal communication in emails and online chats. The representation of different Arabic dialects in written online interaction has attracted the attention of other researchers. Some online users like to reveal their dialect, and hence origin, whilst interacting with others online.

Al-Salem (2005) looked at the positive impact of online communication on the self-image and social attitudes of nine Saudi EFL women from different universities using interviews and document analysis. He explored their self-image, their developing perception of their environment, and their changing social attitudes as a result of participating in online interaction. A second, related goal, was to determine whether, and in what ways, the Internet facilitates perceptive transformation. The results from the document analysis indicate that the participants' participation in the web forum was positive. Freedom of expression, change in values and, personal identity, are also amongst the findings of the study.

As discussed above, one important focus in the sociolinguistic approach to investigating online interaction is gender. Similar to Herring and others' gendered work (Herring & Paolillo, 2006; Herring & Stoerger, 2014; Herring & Zelenkauskaite, 2008), Strong and Hareb (2012) compared between some Emarati men and women in a corpus of around 5,700 tweets in relation to privacy, i.e. locked or unlocked accounts, language, and topics and people tweeted. The study concludes that men are less strict about their account privacy as most of them used real images of themselves and had more unlocked accounts than women. Men sent fewer tweets than women, women had more followers than men, all participants used Arabic, English and Arabish in their tweets, but men used more English than women. Men and women were similar when using phones, not computers, to tweet, and talked about two topics: personal feelings or philosophies, with no significant differences between them.

Globalization has also been examined in online interactions. Daoudi (2011) examined e-Arabic as part of globalization. She indicates that this new language is adopted not only to participate in the global world but also to fuse in the local community as a way of framing the global. She examined the occurrence of e-Arabic, i.e. novels from different Arab countries (Saudi Arabia, Egypt and Algeria) as part of what she called e-literature: novels that are composed and popular online. She concludes that globalization has affected Arabic language in many ways, e.g. there are many loan words from English and other languages that are now used in Arabic that got access through computer-mediated communication. She concludes that the Arabic language "is not immune to change", and that e-Arabic has shaped the expression of people and therefore left the future of modern standard Arabic "hotly contested" (Daoudi, 2011, p. 162). Similarly, Allehaiby (2013) reviewed the literature of Arabish

adopting a sociolinguistic framework. Starting by describing how globalization and technology have contributed to the emergence of Arabish, and moving to a description of some structural characteristics of this linguistic variety, she compared some instances in the Arabic history, where there were calls for Arabic Romanization to more recent calls for using Arabizi. She concludes that although Arabizi is a common system that allows users variety in expression and has sociocultural indications, it is resented by many Arabs because it is considered a threat and a form of mental and ideological colonization. In a final remark, Allehaiby (2013) comments that Arabizi will continue to be used in the Arab world and the resistance towards its use will gradually ease.

Research in this tradition has considered the social aspects of the interaction when examining digitally-mediated communication, including the identity of user, context, and different modes that people use in their interaction. A real understanding of any interaction, however, cannot be achieved by looking just at a structural level, nor by just examining social factors. Research has to look also at ideologies and cultures, which although unseen, affect people's actions, identities and relations.

2.2.3 Sociocultural approaches to online communication

Before moving on to a discussion of the third stage in research on language and the Internet (the sociocultural approach), it is important to make a distinction between a sociological approach and a sociocultural one. Both approaches are rooted in traditions in sociology that emphasize that theory must be grounded in data (Blumer, 1954; Garfinkel, 2002; Goffman & Lofland, 1989). Moreover, scholars in sociology and anthropology have been interested in the Internet as a site where new forms of social organization have arisen. Rheingold (2000), for example, examined the new social organizations in virtual communities, arguing that the Internet has affected not only the thoughts and ideas of individuals, but also their one-to-one and many-to-many interactions. As a result of this change in the idea of community, concepts such as power and democracy have been redefined. The interest in investigating virtual and online communities in the field of sociology has had an impact on the field of applied linguistics; many sociolinguistic studies have turned their attention to communication in online 'speech communities' and 'communities of practice' to reflect this interest in social aspects of online interactions (Cherny, 1999; Danescu-Niculescu-Mizil, West, Jurafsky, Leskovec, & Potts, 2013; Preece & Maloney - Krichmar, 2005; Umino &

Benson, 2017). In contrast, the sociocultural approach, as will be explained in the next paragraph, focuses not just on how individuals form communities online, but specifically on how individuals, tools, and interactions, serve to reproduce cultures, ideologies, and social relationships.

The sociocultural approach to digitally-mediated communication views online interactions as forms of social practice (Barton & Lee, 2013). This practice-oriented idea comes chiefly from *new literacy studies*, and is an approach to literacy that adopts a social or ideological perspective (Barton & Hamilton, 1998; Gee, 2014, 2015b; Street, 1984, 1995, 2003). New literacy studies emerged as a reaction to the previous cognitive and linguistic understandings of reading and writing. At the time it was developed, the cognitive view of literacy as the ability to simply read and write dominated school contexts, and influenced the research in literacy studies (Barton, 2001). New literacy studies investigated interactions that were situated and multimodal, emphasizing the plurality of 'literacies' (Street, 1984) and practices that converge at 'a nexus of practice' (Scollon, 2001).

Literacy practices incorporates not only writing and reading, but also the social aspects of meaning making, and the underlining practices that they are part of. *Practices* can be seen as the "route map for thinking" that guide people in different situations with focus not only on topic, but also on agency, body, and objects (Barton & Lee, 2013, p. 25). *Literacies* are defined as "the ability to creatively engage in particular social *practices*, to assume appropriate social *identities*, and to form or maintain various, social *relationships*" (Jones & Hafner, 2012, p. 12). According to Barton and Hamilton (1998), literacy is not a cognitive skill, but rather a social activity that takes place in the situated interaction between people. This definition of literacies focuses on *language in use* as a starting point of investigation, not language per se. The investigation of literacy practices is best conducted through empirical approaches in which data is central to making conclusions and theorizing about broader social concepts (Street, 2000). In other words, this approach gives importance to qualitative analysis of authentic examples of language use with reference to the particular sociocultural contexts in which they occur (Barton & Lee, 2013).

Time, materiality, space and embodiment are also part of the situated context investigated in new literacy studies (Barton & Hamilton, 1998; Jones, 2005a; Shove,

Trentmann, & Wilk, 2009). Barton and Hamilton (1998) stress the importance of investigating time and place in the study of literacy events. The results of their study investigating literacy in Lancaster, for example, reveal that it is difficult to understand literacy events without taking into consideration the historical background and physical space, such as Victorian houses and 18th century libraries. Scollon (2002) shows that the actions taken by social actors are not only understood in real time, but also within sociocultural and ideological contexts of the performed actions. For example, in addition to time, physical space and the material world are essential to the understanding of signs and other forms of discourse in place (Scollon & Scollon, 2003).

In line with the approaches of new literacy studies, Jones et al. (2015) explain digital interaction in terms of social practices. They refer to practices online as *digital practices*:

> [T]hese 'assemblages' of actions involving tools associated with digital technologies, which have come to be recognised by specific groups of people as ways of attaining particular goals, enacting particular social identities, and reproducing particular sets of social relationships. (p.3)

This definition of digital practices stresses the dynamic nature of practices. It also emphasizes that these online practices are conducted within 'assemblages' of tools, people, identities, and relationships, which converge at a specific point in a situation, i.e. 'window' or 'site'.

Research into online literacies stresses the importance of focusing on what people are *doing* in interactions. Although the affordances of an application, for example, are predetermined, the actual practices and doings of people are not (Barton & Lee, 2013). Members of particular communities of practice use affordances and draw on different semiotic resources in particular creative ways to accomplish particular social actions. Examples of this include tagging on Flickr (Barton, 2015), writing online reviews (Benson, 2015; Vásquez, 2015), designing Instagram posts (Manovich, 2016), sharing posts on Facebook (Bezemer & Kress, 2014; Lee, 2011) and publishing on Facebook (Eisenlauer, 2011). It is important to note that not all practices are new in Web 2.0 digitally-mediated communication. There are practices that people are familiar with and continue do online and there are those 'emergent' practices that are new to people in Web 2.0 (Herring, 2011). Barton and Lee (2013) commented on the idea of

the continuation of old practices before the Internet, and emergent ones. They found in their research that some practices, such as collecting family photos, are done online as an old practice but the new ways people present and share these photos are considered emergent practices. This process by which new media technologies improve or refashion previous technologies is known to new media scholars as *remediation* (Bolter & Grusin, 2000; Levinson, 1997).

The fact that digital technologies have made it possible for many social practices to move online encourages researchers to adapt existing theoretical and methodological tools that have been used to analyze off-line practices (Jones et al., 2015). Many studies in digital practices, therefore, make use of existing tools and methods in discourse analysis. For example, Gee (2015a) demonstrated how a practice like playing a game can be explained in terms of discourse analytical tools, such as, semantic choice, sequencing, packaging and flow. The study concludes that the world of games, similar to other worlds and spaces we live in, opens a space for conversation to take place based on the affordances the design allows. Other studies that make use of existing approaches to discourse include Barton (2015), who used discourse analytical approaches to examine tags on Flickr, and Vásquez (2015), who analyzed intertextuality in online consumers reviews. These studies are also examples of social practices online.

Another important contribution to sociocultural approaches to digitally-mediated communication comes from *mediated discourse analysis* (Norris & Jones, 2005; Scollon, 2001). Mediated discourse analysis is an approach to discourse that views texts, and the semiotic resources used to construct them, as tools that people use to accomplish social actions and claim social identities. Mediated discourse theory stresses that all tools, resources, language and actions meet at a convergence of various social practices which have their own histories and reproduce particular social identities (Gee, 2015b; Jones & Norris, 2005; Scollon, 2001). Language is not seen as the primary focus of analysis but is one of the cultural tools that people use to achieve their social goals. People employ semiotic resources available in different sociocultural (and sociotechnical) environments, to reveal or conceal particular aspects of their identities (Jones et al, 2015). There are a number of studies that have adopted mediated discourse analysis in their research (Jones, 2013; Scollon, 2001; Scollon & Scollon, 2004; Scollon & de Saint-Georges, 2012).

This sociocultural approach has been adopted in several studies that show how creative online users are at mixing different resources to communicate in different ways, project cultural identities and manage different relationships (Jones, 2005b; Lee, 2007a; Lee & Barton, 2011, 2012; Vásquez, 2015). Jones (2005b), for example, investigates how users in a chatroom manage their social identities and relations by the use of different modes such as photos and videos. The study concludes that the shift from one mode to another not only changes how meaning is made but also announces the display of other identities. The unfolding of new meaning, identities and relationships comes along with the affordance different modes embody. Lee and Barton (2011) also conclude that the multilingual and multimodal use of tags in Flickr is a way of negotiating local and global identities online. Their study concludes that language choice is not a reflection of the participants' background but rather a choice based on context, audience and culture. These participants presented themselves as 'glocal', i.e. global and local, to manage different identities, audiences and topics. Another study that looks at the multimodal and multilingual Internet is a study by Androutsopoulos (2011) which critiques more traditional sociolinguistic approaches, emphasizing that these approaches fail to account for the wide range of linguistic and non-linguistic aspects of online interaction. Instead, the article proposes a hierarchical model for the analysis of heteroglossia in the analysis of samples from MySpace; the analysis zooms out to consider the tension amongst codes and identities. Androutsopoulos (2015) proposes the term 'Networked multilingualism' to examine multilingual practices online that are connected to other people and embedded in the global web. The findings from Androutsopoulos' (2015) analysis of data from Facebook indicate that multilingual practices are complex because they are "individualized", "genre-shaped", and based on a wide range of repertories (Androutsopoulos, 2015, p. 185). The analysis emphasizes "the interplay of fluidity and fixity" of multilingualism showing that "multilingual practice includes many monolingual moments, which result from their situated orientation to particular addressees or topics" (Androutsopoulos, 2015, p. 201). Similar to Lee and Barton (2011), Androutsopoulos (2011, 2015) emphasizes that the tension in multilingualism is not just between different systems, but also between global and local identities.

The sociocultural approach views language as one among other semiotic resources that represent cultures and suggests another way of looking at code mixing

that is different from how it is perceived within a sociolinguistic framework. Researchers have shifted their attention to trying to understand new forms of semiotic and social diversity. As a result, terms such as *plurilingualism* (Hafner, Li, & Miller, 2015; Piccardo, 2013), *heteroglossia* (Androutsopoulos, 2011, 2015; Bakhtin, 1981), *crossing* (Rampton, 2014a), *super-diversity* (Vertovec, 2007), *languaging* (García, 2009), and *translanguaging* (Wei, 2011), are gaining wide interest and acceptance. These terms celebrate the diversity of people's situations fueled by individuals growing competence in different languages (Blommaert, 2010; Coste, Moore, & Zarate, 2009). The different views of code switching are discussed under the theoretical framework chapter.

In conclusion, researching online communication has taken three approaches. It is clear from the literature that investigating structural or social aspects of online communication is not enough to understand what is actually happening online, and what relations and identities are communicated through language and other tools. Language is just one of many aspects that contribute to an interaction. Therefore, it is important to start with social practices in which language is embedded.

As the debate on the effect of Internet communication on written Arabic, Arabic identity, values and religion grows, it is necessary to initiate research into digital practices and how digitally-mediated communication integrates with other tools, relations and identities to engage in broader social and cultural discourse. Hence this study contributes to the literature of Arabic digitally-mediated communication which lacks studies adopting sociocultural approaches.

2.3   Research questions

Based on the literature review, several issues have arisen in relation to the investigation of language online. As argued throughout this chapter, examination of the surface linguistic or social aspects is not enough to gain insights into what people are actually doing online. Looking at the spelling of a word in a Tweet, for example, does not reveal motivations of language choices. Similarly, a social approach towards examining online communication ignores the effect of aspects such as medium, relations and purposes on interactions. There is a gap in the literature on Arabic digitally-mediated communication in relation to the impact of culture, i.e. *social worlds* to use the term used by García and Wei (2014), and on the complex use of mode and

code in interaction. How identities are constructed in these different worlds through translanguaging, needs further investigation. The sociocultural approach is the result of the shift in the way language, multilingualism and interaction are perceived. In order to respond to the claims of the negative impact of social media on Saudis' Arabic language, identity and social relationships, this study attempts to answer the following questions:

1. What are the digital social literacy practices of young Saudi female students?

2. How do young female Saudis use different semiotic resources in WhatsApp and Snapchat to accomplish particular social actions, enact particular kinds of social identities, and form and maintain particular kinds of social relationships?

3. How can these actions, identities and relationships be understood in terms of the sociocultural context in which these young women find themselves?

Chapter 3
Theoretical Framework

3.1 Introduction

This chapter discusses the theoretical framework that underpins the current study. The theories that I draw on were chosen in an attempt to address the key problem of the thesis: what motivates the various codes and modes used by young Saudi people in their online interactions, and what effect these interactions have on their literacy, their social relationships, and their membership in Saudi culture. The main theories that inform my framework are as follows: *translanguaging* (Creese & Blackledge, 2010; García, 2009), which views language use among multilinguals and sees the fluid mixing of semiotic resources in interactions as a form of social practice, *new literacy studies* (Barton & Lee, 2013; Gee, 2015b; Street, 2003), which focuses on how reading, writing, and the use of other semiotic systems are tied to social practices; *multimodal discourse analysis* (Kress & Van Leeuwen, 2001), which focuses on how technology has made interaction and social practices more multimodal, and *mediated discourse analysis* (Jones & Norris, 2005), which focuses on how social actions and practices are mediated through both technological and semiotic tools. The following sections give an account of each of these theories and their relevance to the current study.

3.2 Multilingualism and translanguaging

The phenomenon of multilinguals mixing together different codes in their speech and writing has been a preoccupation of sociolinguists for many years, and a number of theories have been developed to explain this phenomenon. For example, Gumperz (1982) promotes a situational approach to code switching which examines the alteration between languages due to change in interlocutor, topic or context. He argued, for example, that people use 'we-codes' and 'they-codes' to distinguish between in–group informal contexts, and out-group formal ones. The way Gumperz approached code switching was to see it not just as a result of different contexts but also as a result of how people *create* context through contextualization. Another prominent approach to code switching is one that was developed by Myers-Scotton (1993b), based on what she calls a 'markedness model' of language use. The idea of markedness is relevant to the

'expectations' people have in their interactions including for example expectations about register, conversational gambits, and rules of turn taking. Whether or not people fulfill these expectations is a way of communicating with others. People interact using words but also communicate different meanings by exploiting these sets of expectations and by floating them, they create implicature. More recently, scholars like Auer (2005) have put forth a theory of code switching based on principles from conversation analysis, which attempts to explain code shifts in terms of their relationship to mechanics of conversation, such as turn-taking, adjacency and repair. Auer's view considers code switching within stretches of talk or what he refers to as 'turn constructional units'.

All of these approaches to code switching focus on the alteration between *two or more distinct linguistic forms* within one interaction (Scotton & Ury, 1977). In other words, they take a monolingual view of language, in which codes are seen as separate systems with clear boundaries. This view of language, however, has been challenged by scholars like Blommaert, Arnaut, Rampton, and Spotti (2016), who argue that, with increased globalization, the boundaries between languages are becoming increasingly blurred; in fact, they argue that there never have been distinct boundaries between languages since language itself is a social construct. Instead of focusing on languages as distinct entities which may be 'mixed' or 'pure', they argue for a 'sociolinguistics of resources' (Blommaert, 2010), which focuses on the complex repertoires that people draw upon when they communicate, repertoires that include a variety of semiotic resources, including words, symbols, images and sounds.

Another challenge faced by traditional sociolinguistic approaches to code switching which aim at linking language use to social motivation is that the sociolinguist is confronted with the issue of dissecting external variables in the analysis of instances of code switching (Bullock & Toribio, 2009). An approach which would better explain language in use would need to account for the complexity and intersectionality of social and ideological motivations for code choice. Moreover, traditional approaches to code switching focus on limited aspects of contexts such as interlocutor or topic as in Gumperz's situational approach, expectations as in Myres-Scotton's markedness approach, and the micro context of interaction as in Auer's conversation analysis approach. All these approaches lack a holistic view of the

phenomenon and do not take into consideration the broader cultural context which may influence code switching.

To be sure, the insights from these approaches have proven extremely valuable in understanding much of what is going on in my data. For example, as I will show in Chapter 5, the results from the coding of data in initial stages of this study lends itself to understanding code use in terms of situational factors (including topic and interlocutor), and conversational analytical approaches and an understanding of markedness have informed my close analysis in Chapter 6 and 7. However, these approaches lack tools that explain how codes and modes are organized simultaneously in interactions (as in Snapchat) nor can they account for examples where it is difficult to assign an instance of code switching to a specific language; for example, it is difficult to decide what is English and what is Arabic as will be seen in the participants' use of Arabish and Arabicized English, an issue which requires to be understood in relation to the influence of broader cultural factors such as religion, media use and education. The complexity of the data and how these codes and modes are used as tools to accomplish actions, manage relationships and enact different identities requires a different perspective on language use and a different approach to the analysis of code switching.

The concept of *translanguaging* (Creese & Blackledge, 2010; García, 2009) aims to account for the complexity of language among multilinguals which includes different structures and modalities that are seen as part of the users' histories and social worlds as explained by Li Wei (2011) in the following definition:

> Translanguaging is both going between different linguistic structures and systems, including different modalities (speaking, writing, signing, listening reading, remembering) and going beyond them. It includes the full range of linguistic performances of multilingual language users for purposes that transcend the combination of structures, the alternation between systems, the transmission of information and the representation of values, identities and relationships. The act of translanguaging then is transformative in nature; it creates a social space for the multilingual language user by bringing together different dimensions of their personal history, experience and environment, their attitude, beliefs and ideology, their cognitive and physical capacity into one coordinated and meaningful performance, and make it into a lived experience. (p. 1223)

This definition shows that 'translanguaging' goes beyond the idea of alteration between two languages in code switching to a view of language use as a social practice. This view examines code switching not only in relation to linguistic proficiency or conversation analysis strategies, but in relation to "personal history, experience and environment, their attitude, beliefs and ideology". This practice-oriented perception draws on the Bakhtinian concept of *heteroglossia* which considers the social and the political implications of languages in use. According to Bakhtin, all language use is heteroglossic; people use multiple voices, such as authoritative or subversive voices, when interacting to draw on political and social implications and at the same time show attitudes towards the people with whom they interact (Bakhtin, 1981). When participants are translanguaging, they are not simply shifting from one language to the other but rather are involved in a "*series of social practices and actions*" that are embedded in a network of political and social relations (García & Wei, 2014, p. 9). Unlike the three traditional approaches mentioned above, this perspective views language use as flexible, fluid and embedded in history rather than static and homogeneous (Blommaert et al., 2016). Translanguaging is a valuable perspective for this study for several reasons: first, it helps me to account for the multimodal aspect of the data, second, it acknowledges those moments where the integration of different systems results in creativity and third, it helps explain the relationship between the way people mix codes and modes, and broader social and cultural issues such as interpersonal relationships and ideology.

3.3 New literacy studies

Traditional views to literacy viewed literacy as the ability to read and write. This definition of literacy promoted a 'standard language ideology' (Irvine & Gal, 2009) which echoes many of the attitudes towards the use of Arabic online explained in Chapter 1 that see translanguaging as evidence of deteriorating language standards. Theories from new literacy studies (Barton & Lee, 2013; Gee, 2015b; Street, 1984, 1995, 2003) explain the problem of mixing languages and modes in online interactions as part of the participants' *literacy practices*. Street (1995, p.79) defines *literacy practices* as "the broader cultural conception of particular ways of thinking about and doing reading and writing in cultural contexts". This definition rejects the views of literacy that focus just on the ability to write and read and emphasizes "ways of

thinking and doing" in literacy practices. From this point of view, the special language used by the participants in this study, which is claimed to 'harm' their ability to write in Arabic and English, can be seen as a way of performing particular kinds of social practices and enacting particular kinds of social identities in the specific cultural milieu in which they are living. Barton and Hamilton (1998, p.7) explain the relationship between literacy and social practice in terms of in six principles:

1. Literacy is best understood as a set of social practices; these can be inferred from events that are mediated by written texts.

2. There are different literacies associated with different domains of life.

3. Literacy practices are patterned by social institutions and power relationships, and some literacies become more dominant, visible, and influential than others.

4. Literacy practices are purposeful and embedded in broader social goals and cultural practices.

5. Literacy is historically situated.

6. Literacy practices change, and new ones are frequently acquired through processes of informal learning and sense making.

This practice-oriented perspective stresses that literacy can be learned both formally and informally and used in "different domains of life". Informal literacies are also known as *Vernacular literacies*- which (Barton & Hamilton, 1998) define as everyday life practices which do not follow formal rules and dominant social institutions, and are usually subject to social pressure from home, schools, or other institutions. Nowadays, everyday practice includes the kinds of digital interactions engaged in by participants in this study.

Investigating literacy as a social practice implies the use of certain methods and data that situate literacy in its social context. In their Lancaster study, for example, Barton and Hamilton (1998) used interviews, observations, and a collection of documents. What gives validity to these examined "texts" is that they are situated in people's "reciprocal networks of exchange" (Barton & Hamilton, 1998, p. 254). This approach is particularly suited for the study of digital interactions; Barton and Lee (2013) argue:

> The social practices which language is embedded in are particularly salient when examining language online not least because of the constant change, the constant learning and fluidity of texts. A crucial part of the

context of texts online is locating them in practices of their creation and use.

This extract emphasizes that digital texts and practices are situated within the context of digital media. Digital literacies as a new delivery system of language and interactions has changed people's thinking, relating, being and meaning (Gee & Hayes, 2011; Jones & Hafner, 2012). This change in the way people interact is due to the new and varied tools the new technology provides. All semiotic tools of any kind are situated (Gee, 2014). As a result of situating people, meaning and tools, the aim of analysis under this tradition is to investigate language-in-use-in-society (Gee, 2015b).

3.4 Multimodal discourse analysis

The third major approach that I draw upon in this study is multimodal discourse analysis. Jones (2012b) defines *multimodal discourse analysis* as "an approach to discourse which focuses on how meaning is made through the use of multiple modes of communication as opposed to just language" (P.1). One of the salient features of my data is the use of "multiple modes" in the participants' online interactions. *Modes* are defined in this approach as resources for meaning making that have different affordances and are socially and culturally shaped (Kress, 2011). One approach to the study of multimodality is *social semiotics* which aims to "recognize the agency of social actors and social/power relations between them" (Jewitt et al., 2016, p. 9). This approach focuses on 'language in use', collecting and analyzing observable meaning making traces such as artifacts and samples of social interaction, describing data on a micro level paying attention to form and meaning, link their micro analysis to social aspects, and include means of meaning making other than speech and writing (Jewitt et al., 2016).

Social semiotics focuses on *visual semiotics* (Kress & Van Leeuwen, 1996) which examines the social use of visual texts. This approach is used in the analysis of Snapchat data which relies heavily on images and texts in which participants have control over visual aspects such as color, font and layout. Four main systems of visual semiotics are relevant to the current study: these include representation, modality, composition and interaction. The first system, *representation*, explains how participants, or objects in images and the ways they are arranged in relation to each other carry different meanings; they may for example make a statement or tell a story.

The second system, *modality*, explains the ways people represent the degree of certainty or realism in images. The third system, *composition* refers to the physical structure and organization of information, and the fourth system, *interaction*, examines how relationships between people are expressed and managed. These types of relationships are realized visually in relation to space, distance, angle and perception (Kress & Van Leeuwen, 1996; Scollon & Scollon, 2003).

The visuals and texts in much of my data take their meaning not just from the way they are situated on computer screens but also from the way they are situated within the physical world. One branch of multimodal discourse analysis, influenced by mediated discourse analysis (see below) is *geosemiotics,* which examines how words and images take their meaning from the way they are placed in the physical environment (Scollon & Scollon, 2003). Geosemiotics combines visual semiotics explained above with *place semiotics,* which examines "where in the physical world the sign or image is located" (Scollon & Scollon, 2003, p. 142). Central to this theory are the concepts of emplacement and embodiment which are used to understand how people accomplish actions, manage relationships and enact identities through the way they emplace their bodies and different modes and codes in different physical places. How these modes and codes make meaning and draw links to the material world is explained through the idea of *indexicality* (Johnstone, Andrus, & Danielson, 2006; Silverstein, 2003). An index is a context-dependent sign which derives meaning from 'pointing' at parts of the material world (Scollon & Scollon, 2003).

3.5 Mediated discourse analysis

Mediated discourse analysis is the fourth theoretical framework I draw upon. Mediated discourse analysis was developed to fill in the gaps found in previous approaches to discourse that neglect social actions, and to previous approaches to social practice that marginalize discourse. This approach views discourse as one of many tools that are used to accomplish social actions. By bringing social action and discourse together, this approach aims to "preserve the complexity of the social situation" by emphasizing how several semiotic and social aspects intersect at a *nexus* (Jones & Norris, 2005). The starting point in this approach is the *mediated action* which is defined as "the real time moment when mediational means, social actors and the sociocultural environment intersect" (Jones & Norris, 2005, p. 5).

All actions are mediated by tools (Vygotsky, Rieber, & Carton, 1987; Wertsch, 1998). There are different types of tools: there are technical (or physical) tools such as smart phones, and there are psychological or semiotic tools such as languages, symbols and other semiotic systems. The kinds of applications that participants in this study are using are complex combinations of technical (hardware) and semiotic (code, language, symbols, interfaces) tools. These different types of tools or *mediational means* are "carriers of social, cultural and historical formations that amplify certain social actions and limit others" (Jones & Norris, 2005, p.49). This definition shows that different tools have different *affordances* and *constraints,* i.e. features that facilitate or hinder the accomplishment of certain actions, which may influence the way people perform actions (Jones & Hafner, 2012). However, people can alter and appropriate different tools in many creative ways to better serve their social goals (Bakhtin, 1981).

The affordances and constraints of tools are not just a matter of their physical properties or technological characteristics (the software code of Snapchat, for example, which makes it possible for users to write on top of pictures). Affordances and constraints also arise from the 'histories' associated with tools, which shape the way people use them through social conventions and use that arise as part of what Gershon and Bell (2013) calls 'cultures of use': tools have particular conventions of use which build up over time in particular communities and so when people appropriate these tools they are invoking these histories and identifying themselves with these communities. The examination of these tools, however, should not be separated from social actors nor social actions. As emphasized by the definition of mediated action above, the focus of analysis should be on the exact moment where social actors are using tools to accomplish social actions.

These moments in which actions are examined at are known in mediated discourse analysis as *sites of engagements*. These are moments in which different tools, people, relationships and practices come together in a "real time window" (Scollon & Scollon, 2004; Norris & Jones, 2005, p.139). At these sites, "more durable practices, social identities and social groups are constructed" (Jones, 2005a). Sites of engagements are not concrete moments or locations but the result of participants orienting to time and place in particular ways mediated by cultural tools.

The orientations of people at sites of engagements, however, varies from one person to another. Different people accomplish the same action differently due to their various previous experiences. Social histories and previous experiences are embedded in what is known as *historical body* (Scollon & Scollon, 2004). In an interaction, different historical bodies meet, and, as a result, different relationships and identities are projected within what Goffman (1983) refers to as the *interaction order*; this concept explains language choices as the consequences of the effects of situated interactions which are translated into expressions of social structures and relationships (Goffman, 1983).

These intersecting concepts from mediated discourse analysis are used to explain choices of codes and modes found in the data. The following proposed model adapted from Scollon and Scollon (2004) is used as part of the theoretical framework of this study:
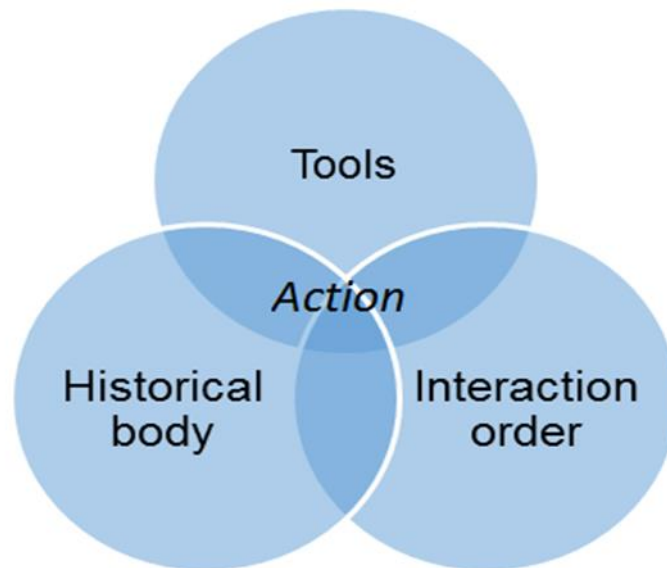
Figure 3.1 The interaction model (adapted from Scollon and Scollon (2004))

The model shows that any interaction takes place at what Scollon (2001), and Scollon and Scollon (2004) called a *nexus of practices*, i.e. an intersection, in which cultural histories of tools, people, and relationships meet to accomplish social actions. By positioning the participants' language use at the intersection of tools, relations,

cultures and actions, this framework avoids a reductionist view that separates one element from another. It would be difficult to understand actions by just looking at tools alone because tools are cultural means which do interpersonal and identity work.

The implementation of a mediated discourse analysis approach allows for a close analysis of social actions and at the same time connects these actions to what Barton and Lee refer to as *social practices*, Gee refers to as *Discourses* with a capital 'D' and Scollon, Scollon, and Jones (2012) as *discourse systems*. Discourse systems are defined as "cultural toolkits" which consist of ideas about the world, ways of interacting with others, ways of communicating using different tools and methods of learning how to use these tools (Scollon et al., 2012, p. 8). Mediated discourse analysis attempts to explain how "small d discourses", i.e. stretches of language, reproduces "big D Discourses", i.e. socially accepted associations among ways of using language in a specific context, "and how 'big D Discourses' create and constrain 'small d discourses'" (Gee, 2014; Scollon et al., 2012, p. 131). This connection to broader social worlds contributes to the understanding of how participants use different codes and modes to position themselves in different discourse systems.

Mediated discourse analysis is used as part of the theoretical framework of this study because it allows for the integration of all the ideas discussed above under new literacy studies, translanguaging and multimodality. First, mediated discourse analysis not only perceives literacies as a social practice but also operationalizes this concept by focusing on *social actions* as the unit of analysis. Second, mediated discourse analysis stresses the importance of examining cultural tools used in an interaction and how the mixing of codes and modes is taking place as means of *doing* a social action. Third, this approach links the use of codes and modes to broader social and cultural aspects.

3.6 Conclusion

The theories adopted in this study provide solid ground for the investigation of the digital literacy practices of Saudi university students. These theories allow the researcher to account for the sociocultural, situated, mediated, and multimodal practices of the participants. The theories that constitute the theoretical framework of this study come out of similar traditions in the philosophy of language and social practice. All of them have a shared focus on context, semiotics, tools, and culture influenced by the ideas of Bakhtin (1981), Hymes (1966), and Vygotsky et al. (1987). In addition to their

shared epistemology, putting all three theories together is analytically useful. Translanguaging and New literacy studies view mixing code and mode as part of the participants' social practice but do not explain how meaning is made when different codes and modes are mixed together. Therefore, multimodal discourse analysis is used to account for the relationship between modes and meaning; yet it does not show how modes and meaning are negotiated in a moment by moment interaction. Mediated discourse analysis deals with these moments within social actions. Mediated discourse analysis and the proposed model attack the research problem by viewing language use as a social practice and at the same time examines how different codes and modes are used in specific actions and how the interaction order affects the use of these tools. At the same time, it looks at how the use of tools is affected by the action and by histories and experiences. Mediated discourse analysis provides tools for the analysis of social practices in new literacy studies and multimodal discourse and at the same time provides a link to culture and identity through the integration of mediated actions, cultural tools sites of engagement within the nexus of practice. The following chapter reveals how these theories have informed the methodology of the present study.

Chapter 4
Methodology

4.1 Introduction

This chapter begins with a short introduction that links the theoretical framework described in the last chapter to the methodology adopted in this study. The chapter then describes the design of the study which is framed around the overarching question that was asked by Goffman: "what is going on here?" The methodological tools for this study are designed to start out broadly in order to explore what the participants are doing online, followed by a more in-depth analysis of a sample of their online interaction in WhatsApp and Snapchat. The study relies on self-report methods of data collection as well as samples of participants' online interaction. The study also selects specific examples from the samples to conduct a close discourse analysis that focuses on the integration between social, technological and linguistic aspects. Questionnaires and literacy logs were used to answer the question *what are the participants doing online?* Further, collected samples of digitally mediated communication helped to answer the questions *how* and *why*.

In the previous chapter, which outlines the theoretical frameworks for this thesis, it was argued that digitally mediated communication is best seen as a set of social practices realized in social contexts. This chapter applies this argument to the design of a set of methodological tools to examine digitally mediated communication. According to Tagg (2015), "investigating literacy requires a methodological approach that allows for a deep understanding of social context" (p. 193). This study adopts principles from mediated discourse analysis and new literacy studies because the focus is on both language as text and language as social practice, thus combining "the study of practices with the analysis of texts in order to understand language online" (Barton & Lee, 2013, p. 11). A number of tools for data collection were employed in order to capture the multimodal and multilingual digital practices of Saudi female university students. These tools attempt to respond to Jones' call for developing new "ways which encompass multiple modes and make use of multiple methods, ways which begin not with texts but with people's actions and experiences around texts" (Jones, 2004, p. 31). The focus on

social, cultural and linguistic aspects is also emphasized by Barton and Lee (2013) as the starting point in the investigation of online language within a mixed method.

This study adopts a mixed method design with an eclectic approach to data analysis that involves description, coding, quantification and focused qualitative analysis (Dörnyei, 2007). According to Dörnyei, such design is useful as it expands the understanding of the examined phenomena, generates multiple views of an examined issue via triangulation and reaches wider audiences due to the use of different methods. Another reason for adopting a mixed method approach is that the wide range of affordances of the different platforms in social media makes it difficult to adopt a single tool of analysis. Pioneers in the field of digital communication have raised concerns about the ability of existing analytical frameworks to keep up with the rapid changes in the digital world. Jones, Chick and Hafner (2015) have encouraged researchers to investigate new and innovative tools in order to formulate novel frameworks of analysis that embrace the multimodality of digital communication in addition to the traditional tools of discourse analysis. Because this study views literacy as a social practice, it is important to adopt approaches and tools that account for contextual aspects. Investigating online practices should focus on the analysis of authentic examples of language use within the particular socio-cultural contexts in which they occur (Barton & Lee, 2013).

One way this study exemplifies 'mixed methods research' is that it gathers and presents some quantified data in the form of questionnaires (Dörnyei, 2007) and electronic literacy logs which provides a general idea of the participants' use of digital media. Another type of quantification which is used in the initial stages of discourse analysis comes from the use of qualitative analysis software to code samples of interactions gathered from participants. The qualitative part of the study consists of a close analysis of a smaller sub-set of participants' interactions using tools from mediated discourse analysis, as well as analytical concepts from translanguaging and geosemiotic research.

 The following sections provide a description of the participants, the tools used in data collection, the piloting stage, the procedure of data analysis, ethical considerations and potential biases.

4.2 Participants

To answer the research questions posed in this study, a deep understanding of individuals' experiences with technology needs to be established; therefore, the study focuses on a relatively small number of participants. The aim is not to arrive at generalizations about language and digital media among Saudi females, but rather, as Dörnyei (2007) explains, to describe, understand and clarify 'a human experience" while accounting for individual differences (p.126). This section presents the demographic, academic and technological background of the participants, showing that the sample is relatively homogeneous in terms of gender, nationality, age range, background, first language, English proficiency level, and familiarity with using cell phones and social media.

The participants were 103 Saudi female students between the ages of 19 and 25 studying in the English Department at Imam Abdulrahman Bin Faisal University in Dammam, Saudi Arabia. All 103 participants participated in the questionnaire, although the completion of the electronic literacy log and the collection of digitally mediated samples were undertaken with only 43 of them. They all spoke Arabic as their first language. In everyday conversation, they speak an informal spoken variety of Arabic and rarely use classical or standard modern Arabic, except in academic situations. The participants speak a range of varieties of colloquial Arabic that reflect their geographical origin. Although colloquial Arabic is spoken at home, not everyone uses their own colloquial variety with others in public. Some prefer to use a "white accent" (Abdulhameed, 2015, May 16),which is defined as a middle language between standard Arabic and colloquial that bridges the gap between different varieties and thus is an intelligible style for communication, reflecting a more pan-regional Saudi Arabic. The Arabic varieties spoken by the participants include central, western, southern and eastern or gulf varieties.

The participants attended a female-only university in Dammam, one of the largest universities in Saudi Arabia. It is a public university owned by the government. The participants received free education at the university and were paid a monthly allowance of about 150 GPB. Forty percent of the participants were in their third year, 27% in their fourth year and 32% in their fifth year. They were all enrolled in a bachelor's degree program in English. They were taught English linguistics and literature subjects by Saudi and non-Saudi (Egyptian, Indian, Pakistani) instructors,

lecturers and professors. Most of their exposure to English was in their classes and they rarely used it outside the classroom except for preparing assignments and studying for examinations. These students were generally low-proficiency writers and speakers of English - except in a very few cases- because they had little exposure to English in their daily lives. According to a report by the British Council, Saudis' overall TOEFL test performance placed them within the lowest 9 per cent of scores in the world (Carfax Educational Projects, 2016).

All participants were familiar with digitally-mediated communication. They all owned a smartphone and had access to the Internet at home and at the university. The participants were frequent users of different social media platforms. The data indicates that they used different platforms daily to interact with family and friends and other online users. They mainly used Arabic in their communication but sometimes used English with friends. Their main means of communication was text, although images, video, and audio were used too.

4.3 Data collection instruments

In this section, a description of the data collected used in this study is given, together with reasons for the choice. How the data collection tools were piloted to ensure validity and reliability of outcomes (Dörnyei, 2007; Paltridge & Phakiti, 2015) is also explained. Three kinds of data were collected: questionnaires, digital literacy logs and samples of the participants' online interactions.

4.3.1 Students questionnaire

One aim of this study is to investigate the digital literacy practices of the participants. Using questionnaires allowed the researcher easy access to background information about the participants as well as their reported online practices. However, the questionnaire was not the only tool used to obtain initial insights into participants' digital practice. This is because questionnaires tend only to give an idea of what people think they do, as opposed to what they actually do. Therefore, other tools, such as electronic literacy logs and collection of samples of the participants' online interactions, were employed.

In order to determine what questions would be appropriate, it was necessary to have preliminary knowledge about the participants' digital practices. Therefore, one question was asked before designing the questionnaire: "What social networks and applications

do you use and in what language?" This was emailed to twenty-four female students in the English Department at Imam Abdulrahman Bin Faisal University, KSA. Answers to this question indicated that WhatsApp, Instagram, Snapchat and Twitter were among the top applications used (Appendix 3). Most respondents used English and Arabic and none used English only in their online communication. The information received helped in understanding what applications to ask about in the questionnaire. There were also open-ended questions in the questionnaire to include other applications that were not specifically mentioned.

The questionnaire consisted of 33 questions. They were designed to investigate the digital practices of all participants including type, length, frequency and language used. Some items were adapted from the computer-mediated discourse-survey, designed by Drouin and Davis (2009), (Appendix 1) to investigate the impact of Internet language on standard English, and emailed to the researcher (personal communication, November 18, 2014). This questionnaire was considered because it addresses similar concerns as the current research around the debate on the impact of Internet language on language. In April, 2015, one-hundred and three participants answered a questionnaire on online literacy practices and their impact on writing (Appendix 2) that was devised to answer question one: *"What are the social digital literacy practices of Saudi university students who major in English?"* The individual participants completed the questionnaire in about 20 minutes. Fifty percent of the questionnaires were cross checked by a member of the academic staff from the English Department at Imam Abdulrahman Bin Faisal University. The next step was to assign a value to the responses under each question to enable the researcher to produce descriptive statistics from the questionnaire. The results from the questionnaire are discussed in the following chapter.

4.3.2 Students electronic literacy logs

Many researchers have stressed the importance of using tools that capture the daily behavior of participants such as diaries and activity logs (Groom & Littlemore, 2012; Lillis, 2013; Tagg, 2015). In general, there are two types of diaries: participants' diaries and researchers' diaries (K. Jones, Martin-Jones, & Bhatt, 2000). This study used participants' diaries; these involved the study of participants' activities in relation to their literacy activity (K. Jones et al., 2000). Diaries and logs are considered a type of data collection method that captures daily experience by asking participants to keep

records of specific aspects allowing the researcher access to knowledge that cannot be obtained by any other method (Dörnyei, 2007). The use of literacy logs responds to the need for highlighting individual digital practices, as emphasized by Wood, Kemp, and Plester (2014), by looking at actions not text (Barton & Hamilton, 1998; Barton & Lee, 2013; Jones & Norris, 2005). This tool was used because it reflected the actual practices of individuals. It is also a way of investigating the "grammar of context" which may inform about the different situations in which digital communication takes place (Scollon et al., 2012). According to Scollon et al. (2012), the grammar of context is considered a preliminary audit which investigates a number of aspects related to context including setting, participant and message form.

Some studies, such as Satchwell (2005), Al-Salem (2005), and Lee (2007a) have analysed literacy logs, diaries or documents relating to their participants' literacy practices (Satchwell, 2005, June) or online activity (Al-Salem, 2005; Lee, 2007a). These studies tend to have a small number of participants, which supports the participant sampling of the present study. Satchwell (2005), for example, implemented the use of literacy logs in the form of a 24-hour clock. Participants in that study had to draw clocks and write down the types of literacy practices, reading and writing, they had done during the previous day. This study differs from Satchwell's: the difference being that students were asked to complete literacy logs for four days rather than one day, they completed them anywhere, anytime not in class, and the literacy logs used were electronic.

Forty-seven participants who completed the questionnaire agreed to participate in filling an electronic literacy log for four days. These included two working days and a weekend starting from Friday 1/May/2015. The participants were also told in advance that their consent would involve collecting online communication samples and that the researcher would follow them in their social media accounts. Forty-three participants agreed to participate and four did not want to share samples of their digitally mediated interaction. Four WhatsApp groups were created with around eleven participants each to make it easier for the researcher to give the same instructions to all, allow them to share problems and solutions and to help the researcher keep in touch with the participants.

The electronic log designed for this study was created through an application called Zoho. In this literacy log, participants answered questions about what, where, who,

why, when and how their digital interaction took place (*Figure 4.1*). The design of the questions in the Electronic Literacy Log required the researcher to analyse common platforms to include the common literacy types taken by the participants in their interaction including, reading texts, writing, watching videos (the category 'watching' also includes looking at static images) and 'liking', i.e. clicking on the "thumbs-up" button in Instagram for example. Other categories were elicited from the participants themselves in the piloting stage, such as the categories on why they use different platforms. The application provided an online link to the log in which participants filled in information regarding their online activity. The electronic log was designed to be user friendly; participants did not need to type in much information but rather tick boxes to log in their digital activity. In order to explain how to use the electronic literacy log and the meaning of all categories and questions, a tutorial video was designed and sent to all 43 participants in all WhatsApp groups.

Figure 4.1 The electronic literacy log as it appears on smart phones screens

All participants' responses and entries of their logs fed into a collective table. This table was retrieved as an excel file which enabled the researcher to produce descriptive results (*Figure 4.2*).

Figure 4.2 An Excel sheet with the participants' literacy logs entries

As mentioned above, this tool is useful for understanding the "grammar of context" and is not considered sufficient for understanding digital literacy practices. In order to understand what Saudi female students are actually doing online, it is essential to examine samples of their online communication.

4.3.3 Samples of participants' digitally-mediated communication

In the pre-piloting stage of the questionnaire, answers to a question that was asked by the researcher (Appendix 3) show that WhatsApp and Snapchat were among the applications used most by students. As a result, these two applications were the focus for the collection of sample texts and interactions.

The focus on WhatsApp and Snapchat was for the following reasons:

1. Popularity: these were the most popular apps used by the participants: almost all participants used WhatsApp and Snapchat every day. In addition, a reasonable amount of data was collected from these two applications.

2. Availability: Another important reason for investigating these two apps is that despite their wide use, they are less researched because of their private nature: unlike Facebook and Twitter, researchers cannot normally access them because there are no public accounts for these two apps available from which researchers can get data. It requires personal knowledge of or contact with WhatsApp and Snapchat users to get data from them. In addition, Snapchat data is difficult to access because of its private and self-destructing nature which enable snaps to last for only 24 hours.

3. Multimodality: These two apps are also chosen because both apps are multimodal yet have differences in their multimodal representations that are worth investigating. Snapchat is ephemeral unlike WhatsApp, whereas WhatsApp is mostly textual unlike Snapchat. Snapchat has more freedom in designing the layout unlike WhatsApp.

All participants had agreed in writing to share with the researcher some samples of WhatsApp and Snapchat as explained under the ethical procedure section. Most WhatsApp conversations collected took place during the three months of March, April and May 2015 and were emailed to the researcher. The WhatsApp data includes 220 WhatsApp chats, some of which are dyadic and some are within groups. The researcher also asked the participants for their Snapchat account names in order to follow them during that period. The researcher was not able to screenshot snaps from Snapchat because the 2015 version of the application did not allow for that. Snaps are ephemeral in nature: typically, self-destructing messages which last for only 24 hours in the 'My Story' posts. Therefore, the researcher checked the participants' accounts twice a day during the four-day period and took pictures of their posts from another device in order to save them. In Snapchat, there are two kinds of posts: posts on *My Story* that last for 24 hours and private posts sent to individual users that last for up to 7 seconds after which they disappear. All snaps collected for this study were from posts on *My Story*. These are 109 Snapchat screen shots of images and videos.

It is important to note that the WhatsApp data does not include the actual multimedia (i.e. the videos, images and audios that were exchanged during the participants' interactions) for ethical and technical reasons. However, the collected data does indicate where in the chat a multimedia element was used and also specifically

what mode was used, such as audio or image. So a participant would say something in text mode followed by a voice message that could not be reviewed by the researcher as in the following example:

1. 3/27/15, 10:43:10 PM: Raggy: This is my speech
2. 3/27/15, 10:43:22 PM: Norah: 😄😄😄😄😄😄
3. 3/27/15, 10:43:31 PM: Norah: <audio omitted>
4. 3/27/15, 10:43:53 PM: Norah: Thats how i read it
5. 3/27/15, 10:44:06 PM: Raggy: That i how i said it
6. 3/27/15, 10:44:13 PM: Norah: 😊

In the analysis of such examples, the researcher makes assumptions based on the context and what has been said before and after the missing multimedia element. It is acknowledged that this is a limitation in the data. However, the kind of data the study already includes is considered rich and valuable given the private nature of these types of exchanges. It would be more difficult ethically and technically to obtain them if the researcher attempted to include the multimedia element.

4.4 Piloting tools

Piloting tools and methods of data collection was important for this study. It contributed to the improvement of the questionnaire, the evolution of the electronic literacy log and the collection of online communication samples. The pilot study was conducted in December 2014. Five students who represent the larger sample examined, i.e. Saudi female university students majoring in English, gave their feedback on the first version of the questionnaire. Discussions were about meaning of questions, expected input, what simpler versions can be given and other general suggestions. Students gave suggestions of alternative terms that are easier to understand and asked about some unclear points such as the meaning of "texting". Because the questionnaire was in English, some participants raised questions about whether their responses should be on their Arabic or English digital practices. Some students suggested an introduction that would explain some of the key terms used in the questionnaire and that it is asking about digital practices in both Arabic and English. All suggestions were taken into consideration in the modification of the questionnaire.

Piloting of the literacy log took different forms and shapes, contributing to the evolution of its final electronic form (Table 4.1). First, a pen and paper log was kept for

48 hours both by a representative candidate of the sample and the researcher. The outcome was that the fragments of information that were elicited did not give a clear idea of what participants were doing online. Consequently, a table was designed with questions about participants' online activity such as what? Where? When? With whom? and what language? This type of log was piloted for 48 hours and returned to the researcher. Respondents were also asked to email the researcher their WhatsApp chats and SMSs. Students provided feedback in relation to their use of the literacy log and most declared that they enjoyed completing the literacy log, but sometimes forgot to use it. The participants suggested that a digital one where they could click options would be easier for them and more efficient than paper and pen. This stage of piloting the log helped the researcher in improving the shape as well as the content of the literacy log; the researcher used some terms elicited by the participants in relation to common purposes for using social media; the terms used by the participants such as "entertainment", "give information" and "keep in touch" were used in the final version of the log. The final version of the log was an electronic one that was designed using a Zoho application. Zoho is a website that enables the researcher to create an application that has boxes that can be ticked and filled in easily by participants. The participants were reminded to complete their literacy log by sending them the link to the e-literacy log twice a day.

Table 4.1 Electronic Literacy Log (eLL)

Pilot	Date	Type of Literacy Log	Advantages	Disadvantages	Improvements suggested
1	Dec, 2014	Free-writing	No constraints	Necessary information missing	Create a booklet with tables specifying information needed
2	Dec, 2014	Booklet with tables	Precise	Monotonous with repetitions	Design a digital form to click on the repeated items for easy use
3	Feb, 2015	Electronic Literacy Log Phone Application	Easy access, more appealing	Participants need to be trained on how to use it	Made a tutorial video on how to use the ELL

Piloting acts as a good rehearsal for data collection. Piloting the questionnaire and literacy log helped the researcher to locate areas of strength and weakness in the data collection methods. The result was modification and improvement of the tools that were

used. Piloting also helped in anticipating how to collect and store large amounts of digitally mediated communication. The successful stage of piloting and data collection paved the way for data analysis.

4.5 Data analysis

The data analysis approach can be visualized in terms of a funnel: it started broadly with descriptive data that lead to more focused qualitative analysis. The analysis of data in this mixed method study consisted of a 'multiple level analysis' (Dörnyei, 2007). This type of analysis indicates that the analysis starts with a descriptive analysis of a large number of a group leading to a more detailed qualitative analysis of some examples. This type of multiple level analysis applied to the way in which both the participants and the data were approached: questionnaires from 103 participants were analysed prior to the focus on 47 of them; a large data set including 220 WhatsApp chats and 109 Snaps was coded before the close up analysis of some selected examples. In general, the analysis of the data took two forms: descriptive and detailed.

4.5.1 Descriptive analysis

In Chapter 5, a descriptive analysis of questionnaires, literacy logs and data coding is given to provide a general overview of the main patterns the participants adopt in their interactions. This analysis includes providing numbers, description of responses and coded segments of different categories from different tools. The section on coding presents frequencies, overlaps and relations of codes. The descriptive results lead to the qualitative analysis of selected examples in the following chapters (6 and 7) in which specific examples from WhatsApp and Snapchat are selected and analyzed.

The theory-building approach adopted in the analysis is important in many ways. First, it satisfies the empirical nature of the study because theory building is connected to the data. Second, it facilitates answering the questions about *what* language the participants are using in their interaction and *why* by starting with investigation of data and not with testing a theory. After analyzing data from these three tools, a more focused analysis followed which led to theorizing and answering the research questions. This inductive approach is central to grounded theory.

4.5.2 Coding in grounded theory

All digitally mediated communication samples were coded for language choice, mode, type of recipient and topic following a grounded theory approach using a software called MAXQDA. This software was chosen because it is designed for researchers who prefer a grounded theory approach. In addition, the software has other special features such as retrieving overlapping codes to show relations and the capacity to code images, which was useful in handling the Snapchat data.

The coding of the data of this study went through three stages. These stages are called open, axial and selective coding (*Figure 4.3*) and are described by Dörnyei (2007). The first stage is open coding, which 'constitutes the first level of conceptual analysis of the data' (p.260) in which the data is disassembled and assigned various codes. This inductive or bottom-up approach to data analysis is different from other qualitative approaches that begin by assigning segments of data codes from an already existing list of codes. In this study, the data was coded for topic, type of recipient, code and mode. Codes such as "family", "video", "school logistics", and "shopping" were created during the scrutiny of the data emerging from the participants' interaction following a grounded theory approach. Grounded theory is a well-known methodological approach in qualitative research. In 1967, Glaser and Strauss, the founders of this approach, developed what they called the "constant comparative method" as an approach to data collection and analysis. Glaser and Strauss created this approach as a reaction to the claims that qualitative data analysis is far from being scientific and empirical (Silver & Lewins, 2014). "The constant comparative method" is a qualitative method which is characterized by open coding, comparison of data segments, use of memos, an iterative process of coding and analysis, refining categories, and collecting data until saturation (Silver & Lewins, 2014). The main features of this method are supported by MAXQDA, which is the software that was used for data coding and analysis. Coding in grounded theory is consistent with the coding system of MAXQDA that includes memos that are used for comparisons.

The second stage is axial coding, which draws connections between created codes; these connections between codes can be of various types, such as causal, procedural, conditional, and may appear in the various memos researchers usually make while coding (Dörnyei, 2007). Axial coding is facilitated by the use of MAXQDA in this study because it allows for the retrieval of overlapping codes. By selecting certain codes

such as "Arabish" and "School logistics", coded segments of the selected codes are retrieved. This type of coding allowed the creation of links between linguistic and social factors in the data as it provides answers to questions such as the following: when do the participants use Arabic and with whom? However, this analysis does not reveal the motivations of language use nor does it account for variations in different situations. Therefore, a more detailed analysis of selected samples was necessary.

The third and final stage is that of selective coding in which the researcher selects a principal category to focus on in the remaining analysis and writing. 'This core category will be the centerpiece of the proposed new theory' and 'needs to be of a sufficiently high level of abstraction to be able to subsume other categories' (Dörnyei, 2007, p. 261). In the final stage, a story is being told and a new theory is proposed and compared to the literature (Dörnyei, 2007). This stage can be seen in the in-depth analysis of selected examples from WhatsApp and Snapchat.
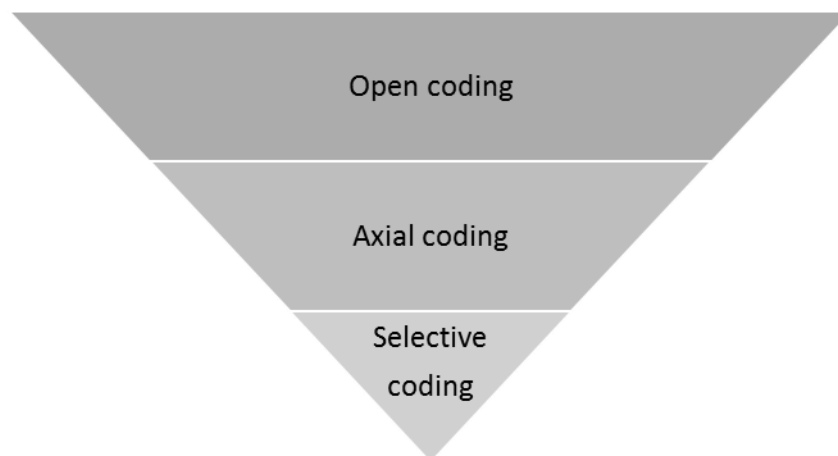
Figure 4.3 Phases of coding under grounded theory

4.5.3 In-depth analysis of selected examples

The descriptive chapter in this thesis, which provides analyses of language use including codes and modes, and topics, as part of mediated discourse approach, is not sufficient to understand what motivates these choices within a particular social action. Therefore, it is important for this thesis to complement the general descriptive analysis of data with a more in-depth analysis. When examining what participants are really doing in an interaction, there is a departure from the notion *topics* which the data was coded for as explained in the descriptive chapter to the investigation of *actions* taking

place. This move indicates that the interest is not in what participants are talking about but how their talking is used as one tool to accomplish actions. The main framework that is used in the analysis of WhatsApp and Snapchat examples is mediated discourse analysis (Jones & Norris, 2005). The analysis of selected examples follows Jones and Hafner (2012), Scollon and Scollon (2004) and Scollon and Scollon (2003) in which the focus of social actions, cultural tools, interaction orders and historical bodies is central to the analysis of discourse. The analysis of the selected examples from WhatsApp and Snapchat also draws on tools from conversation analysis and geosemiotics to investigate what semiotic and multimodal tools are used to achieve interactional goals and accomplish social actions. Among the reasons for conducting a close analysis of selected texts are that this kind of analysis responds to the research questions, helps to explain and illustrate a certain phenomenon and exhibits the nexus of practice. These samples from WhatsApp and Snapchat are selected for a more in-depth analysis to investigate why participants are interacting using the features coded previously in MAXQDA. The topics extracted from the data are further investigated within the specific actions they took place in. Analysis of selected samples examined the question "what are the participants doing here?" The qualitative analysis looks at specific linguistic features and at the same time relates them to social and cultural aspects in a hermeneutic way. Analysis of these interactions involves the investigation of what actions are accomplished, what identities are being enacted and what relations are being managed. This analysis zooms in and out of the text in order to operationalize concepts in language use and link language to broader social and cultural concepts.

In the investigation of digital practices in WhatsApp and Snapchat, a model of interaction is developed including intersecting aspects which are adopted form theories in *Discourse and Action* (Jones & Norris, 2005) and from the definition of digital practices (Jones et al., 2015) which Jones and Hafner define it as:

> '[A]ssemblages' of actions involving tools associated with digital technologies, which have come to be recognised by specific groups of people as ways of attaining particular social goal, enacting particular social identities, and reproducing particular sets of social relationships. (P.3) [capitalization mine]

Three aspects of the data central to mediated discourse analysis were examined: the mediated action, the mediational means and the social actors. The above definition

shows that in order to examine digital practices, it is important to understand these components as part of "assemblages" or the *nexus of practice* (Scollon, 2001) in which tools, identities, relationships intersect. However, because the two applications, WhatsApp and Snapchat, operate under different logics, the realization of these aspects is different and hence the methodological tools in understanding the interaction are different. Both Snapchat and WhatsApp allow users the use of same modes, such as images, videos and text, but the organization of modes and the realization is different. The difference between Snapchat and WhatsApp can be seen in the explanation Kress (1998) gives on the logic of language and images. He explains that language operates through the logic of time which is linear whereas pictures are organized under the logic of space. How elements relate to one another in Snapchat is not random: instead of the sequential relations found in WhatsApp, there is a kind of grammar that governs images which is spatial rather than syntactic.

As a result of this difference, the analysis draws on additional methodological frameworks which accommodate these differences. Geosemiotics is also used to analyse Snapchat. The following table (Table 4.2) presents the aspects of interaction and how they are realized in the analysis of the two applications.

Table 4.2 Tools of Analysis used in WhatsApp and Snapchat

Application	Methodological Framework	Affordances/ tools	Relationships/ Interaction order	Identity/Habitus
WhatsApp	Discourse analysis (Jones, 2012a).	Language choice: sequential choice of mode and code.	Face, involvement and dependence	Translanguaging, Appropriation of tools
Snapchat	Geosemiotics (Scollon & Scollon, 2003). Visual semiotics (Kress, 1998; Kress & Van Leeuwen, 1996)	Modality, layout, color, composition of information	Indexicality, perceptual space, interpersonal distance, interaction order units	Translanguaging, Appropriation of tools

The organization of aspects in this table is actually not as simple and cut and dried as it is presented for several reasons: first, there is an overarching social action which the analysis starts with. Second, all these aspects, tools, relationships and identities, operate together, which makes it difficult to pin down what is actually motivating language use. Although Table 4.2 seems to divide aspects, the actual analysis attempts to capture the way the units merge within a nexus of practice.

As presented in Table 4.2, the *affordances* of each application are examined in the selected examples to investigate how different affordances affect the accomplishment of social actions. In WhatsApp, choice of code and mode are examined within the sequence of unfolding events. In Snapchat, the emplacement of tools and how it affects meaning is examined. The analysis also aims to show how interactional goals are achieved through visual tools. Tools examined include the following: modes, which includes layout, color and font; and composition of information, which looks at the position and direction of text whether it is left to right or centred for example (Scollon & Scollon, 2003).

The second aspect examined is relationships, which are seen in terms of *interaction orders*. The main focus of 'interaction order' is the social relationships between participants involved in an interaction (Jones & Hafner, 2012). This includes examining how the interaction is taking place, who the participant is communicating with, and how this relationhip affects their language use. This was examined in WhatsApp through the concept of *face* i.e. strategies for involvement and independence. Scollon et al. (2012) provide a list of examples of involvement and independence in speech; this was used to guide the researcher in finding similar and different instances of involvement and independence in the samples. In Snapchat, the interaction order is examined by examining how different social interaction systems are used to produce discourses in place; "when and where do they feel comfortable to chat about something and how this interaction is part of the world of others" (Scollon & Scollon, 2003, p. 17). The use of code and mode is also examined through the concept of *indexicality*, how language and other semiotic resources are used to point at places, objects and people in the physical world. Scollon and Scollon (2003) explain that interaction order in discourse in place can be examined through the following: a. resources (sense of time, multitasking and urgency), perceptual space (visual, auditory, olfactory, thermal), and interpersonal

distance (intimate, social, public), and b. units of interaction order (single with a group, meeting, celebration).

Interacting with different participants affects language choices because those interactions constitute different *historical bodies* which carry "bundles of history" (Scollon & Scollon, 2003, p. 15). When participants come together in an interaction, they bring in with them their previous histories and experiences which can be seen through what and how they do or say something. According to mediated discourse analysis, cultural tools, such as languages and applications, when brought into an interaction, come with histories of use (Jones & Norris, 2005). By using different cultural tools, social identities are embedded, constructed and claimed on a micro level (Bourdieu, 1977; Norris, 2005). Social identity is examined in Snapchat and WhatsApp through *translanguaging* by investigating choices of code and mode and how participants appropriate tools to resolve tensions between habitus, tools and social practices involved.

4.6 Ethical consideration

There is an ongoing argument in the literature on online research about issues of privacy (Page, Barton, Unger, & Zappavigna, 2014). Page et al. (2014) explains that research online involves dealing with roughly two types of data: those that are *private*, i.e. limiting information access to followers only, or *public*, i.e. those that are available to anyone. Previously, institutional review boards required ethical consent from those platforms that require a password and user name; however, new platforms have emerged with different privacy settings which do not always require a user name and a password to indicate private settings. It is important for the researcher to make their identity clear to the participants (Moreno, Goniu, Moreno, & Diekema, 2013). In the current study, the researcher met the participants face-to face in class, introduced herself despite being known to almost all of them, explained the details and purpose of the study, and explained how to contact her.

In the case of this study, the data obtained from WhatsApp and Snapchat are considered private; although these platforms do not require a user name and a password, they are considered private because users need to create an account, and accept or add followers and chat partners in advance. In this study, for WhatsApp, participants were free to email any chats, after gaining the consent from their chat partners, and hence,

chose the ones that they were confident about sharing. In the case of Snapchat, there are two levels of privacy: the entire application is private because it requires one to request permission to follow, and the more private one-to-one chats and posts that are sent to selected followers. In this study, only posts in the *My Story* section, which appears to all followers of a user were used because it is almost impossible to get privately sent snaps.

In line with the requirements of University of Reading, ethical approval was obtained from the Department of English Language and Applied Linguistics Ethics Committee prior to data collection. All requirements of the University's ethical procedures were fulfilled, including having participants read and sign a consent form before participating in the questionnaire, electronic literacy logs and the collection of samples of their online interaction. In addition, permission to collect data was secured from the Head of the English Department at University of Dammam, where the data were collected.

Several measures were taken to ensure the anonymity and privacy of participants. Due to the nature of data collection, which included monitoring participants' personal behavior on platforms such as WhatsApp and Snapchat, and collecting files of private chats, extra care was taken to ensure confidentiality and anonymity. All of the data has been securely saved in a PC that requires the researcher's user name and password. The texts and posts were anonymized: participants' usernames and references to other people were replaced by pseudonyms. Any information within texts that includes any type of personal information, such as phone numbers, has been deleted. Participants' phone numbers that were obtained to create WhatsApp groups for the Electronic Literacy Log four-day interaction were deleted as well. One concern with visual data like that collected from Snapchat is that participants are identifiable by their face, but, for reasons that will be explained later in the qualitative analysis section, none of the snaps collected by participants included images of their faces.

The collection of WhatsApp data included interactions between participants and other participants who all signed the consent form, as well as other chat partners such as family members. The participants were responsible to elicit consent form these chat partners to share their chats with the researcher. Anonymity of all people who were involved in this study was insured by replacing all names with pseudonyms and deleting any personal information, such as phone numbers and addresses.

4.7 Potential bias: a personal statement

Scollon (2002) and Scollon and Scollon (2004) stress the importance of the analyst in analytical inquiry; they consider the researcher as a participant in the analysis. The analyst, according to the Scollons, comes with a social, cultural, and ideological repertoire which is considered as a part of the nexus studied. They also stress the importance of reflection as part of the procedure of any study. For the researcher, this creates a paradox: she is *in* but not *of* the study. In this section, therefore, I reflect on this paradox and its potential for bias.

Being a Saudi female lecturer at the Imam Abdulrahman Bin Faisal University brought many benefits: primarily it facilitated the pre-data collection arrangements. Since most of the participants were students who had been taught by the researcher in previous years, they were eager to cooperate and felt comfortable in sending samples of their online communication. Moreover, sharing a common culture contributed to understanding the participants' background, and knowing them personally saved the time that is usually spent by researchers getting to know their participants. The shared background also contributed to an understanding of the respondents' social media interactions.

Although being part of the participants' culture is advantageous in terms of understanding purposes and use of specific modes and codes, it could be that some culture-specific aspects might be either unconscious or overlooked. An indigenous researcher might not notice some culture-specific aspects that an outsider would pick up. However, studying abroad and spending some years overseas has made this researcher aware of differences between Saudi and other cultures.

4.8 Conclusion

This chapter presented the methodology of the present study. It described the participants in the study and the methodological tools used. The chapter also reviewed the piloting phase, the data collection process and data analysis procedure. The importance of complementing descriptive tools with samples of interaction that promote a more qualitative analysis which encompasses aspects of culture and identity is stressed. The methodological approach is consistent with the design of the thesis. The following chapter presents the descriptive results from the tools used: questionnaires,

electronic literacy logs and samples of digitally mediated communication. Then the descriptive chapter is followed by a close-up analysis of some digitally mediated communication samples.

Chapter 5
Descriptive Analysis of Data

5.1 Introduction

This chapter presents descriptive results from four types of data sources: questionnaires, electronic literacy logs, collection of samples from the participants' online interactions in WhatsApp and their interaction on Snapchat. The chapter is divided into four sections; the first section reports on the results from the questionnaire which provides the researcher with a broad idea on some demographics and participants' thoughts about their online activity. The second section provides a preliminary idea on what is going on online from reported data from the electronic literacy logs that provided another way for participants to report on their activities. The third and fourth sections move away from reported data to authentic samples of the participants' online interactions and examine a collection of data from WhatsApp and Snapchat using qualitative coding. The chapter ends with concluding remarks that bring together conclusions from all four sets of data.

5.2 Descriptive results from the participants' questionnaire

This section reports the results from the questionnaire that was conducted in May, 2015 to which 103 undergraduate Saudi female students responded. The questionnaire consisted of 33 questions that addressed a number of issues related to their interaction on digital media: this includes the purpose and use of different social media platforms, frequency, type of recipient, use of abbreviations and type of language employed. In addition, the questionnaire includes some demographic questions about the participants' backgrounds: age, year of study, Grade Point Average (GPA), nationality, first language (L1) and number of years owning a cell phone.

5.2.1 Participants' demographic information

Questions 1 to 7 focused on the participants' age group, level of study, GPA, nationality, first language, familiarity with smartphones and predictive text features. The majority of the participants (93%) were in the age group between 18 and 25 years old, the remaining 7% were between 26 and 30 years old and none of the participants

were above 30 years of age (*Figure 5.1*). Most of the participants were in their third (40%), fourth (27%) or fifth (32%) year of study. The average GPA of the surveyed students was 3 out of 5. All of the participants spoke Arabic as their first language and 97% of the students were from Saudi Arabia. "Other" includes two participants who are Arabs from Yemen and Jordan (*Figure 5.2*).
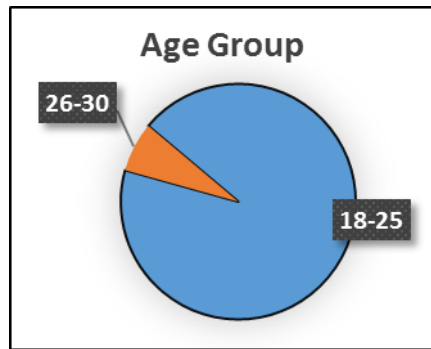
Figure 5.1 Age group
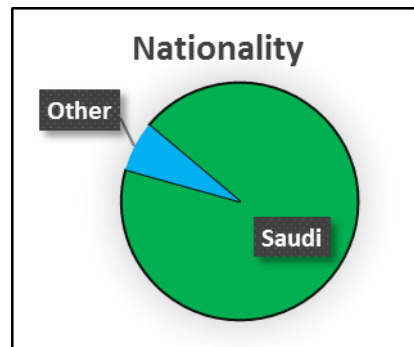
Figure 5.2 Nationality

All of the surveyed participants owned a smart phone, and the majority of participants (85%) had owned a smart phone for 6 years or more, thus suggesting good level of mastery in using cellphone technology and related applications. The survey indicates that the predictive text feature is used moderately by 63% of the participants; however, 27% did not use this feature and turned off the predictive feature option in their smartphones.

5.2.2 Social media platforms and purpose of use

Questions 8 and 9 in the survey were set to identify the most commonly used social media platforms in the participants' daily communication, and the reasons why participants were using them. It should be noted that a single participant could use multiple social media platforms simultaneously and for various reasons.

5.2.2.1 Commonly used social media platforms

Questions 8 asked each participant to select which social media platforms were used in their daily communication. The options provided included a wide range of popular social media platforms - popular according to the pilot study, as discussed previously- in addition to an open ended question to include any additional apps and sites used. According to the questionnaire data as represented in Figure 5.3, it is evident that the five most used social media platforms are WhatsApp (100%), Email (93%), Instagram (92%), Snapchat (86%) and Twitter (73%). The open-ended part of question 8, shows that other platforms used by participants include, for example, YouTube, Vine and Pinterest.
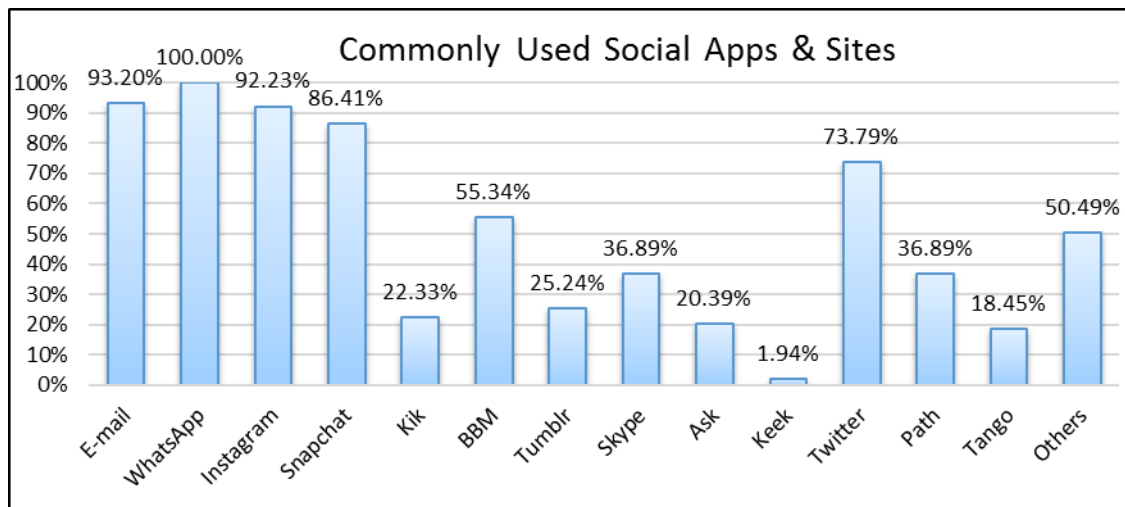
Figure 5.3 Social media platforms used by participants

5.2.2.2 Reasons for using social media platforms

Question 9 in the survey was designed to identify the reasons behind using such platforms. Table 5.1 below shows why the participants used particular social media applications. Participants ticked the reasons for using WhatsApp, Instagram, Snapchat, Twitter, Facebook, SMS and Email. The reasons given were entertainment, keeping in touch, giving information and getting information. An additional category was added,

'do not use', to indicate that the participant was not using a particular application. The division of these categories was previously elicited from the participants themselves, as explained under the piloting stage. The participants indicated that they use social media for *entertainment*, i.e. just to have fun with no apparent social or academic aims. The other aims the participants gave for using social media were to *keep in touch*, *ask for information* and *give information*. Although the categories seem to be sketchy and overlapping, the participants seem to be confident in seeing the difference between them. Therefore, the adoption of these categories was based on the participants' understanding of these different purposes.

Tallying the results shows that WhatsApp is mostly used to keep in touch, Instagram and Snapchat for entertainment, Twitter, SMS and email to give information, and Facebook to get information. It is also important to mention that out of the 103 respondents to this questionnaire, 83 of them did not use Facebook and 32 of them did not use SMS. It seems that recent applications are superseding Facebook and free of charge texting methods are replacing the use of SMS which is still chargeable in Saudi Arabia.

Table 5.1 Distribution of reasons for using most popular apps by the participants

	Entertainment	Keep in Touch	Give Information	Take Information	Do Not Use
WhatsApp	39%	87%	22%	47%	0%
Instagram	89%	40%	7%	35%	2%
Snapchat	89%	76%	4%	9%	8%
Twitter	53%	16%	19%	58%	18%
Facebook	11%	15%	6%	15%	80%
SMS	3%	23%	49%	46%	31%
Email	1%	19%	88%	87%	1%

5.2.3 Frequency of using social media platforms

Questions 10 to 15 were designed to measure the use of selected social media platforms. According to the survey data, WhatsApp was the most popular social media platform since it was used by all participants where 92.2% of the participants said that they used it several times a day and 6.8% said they used it 3-7 times a week. Instagram

came in second place in popularity after WhatsApp with 55.3% of the participants reporting that they used it several times a day. Both apps are very common in Saudi Arabia because they were among the first smartphone applications that were introduced, and have allowed for free of charge exchange of personal text and images. SMS messages were used once a month (47.3%), once a week (21.4%) and some participants did not use SMS at all (15.5%). Voice calls were still used several times a day (53.4%), 3-7 times a week (33%); however, two participants (1.9%) said they stopped using voice calls. Facebook had the lowest use where 78.6% of the participants reported that they never used it. Twitter had a higher usage than Facebook where 30.1% of the participants stated that they used it several times a day, 22.3% used Twitter 3-7 times a week and only 15.5% reported they never used it.

Overall, according to the reported data from the questionnaire, WhatsApp is the most used app, Facebook has the lowest popularity among the selected platforms and all other social media platforms fall between these two sites in terms of use (*Figure 5.4*).
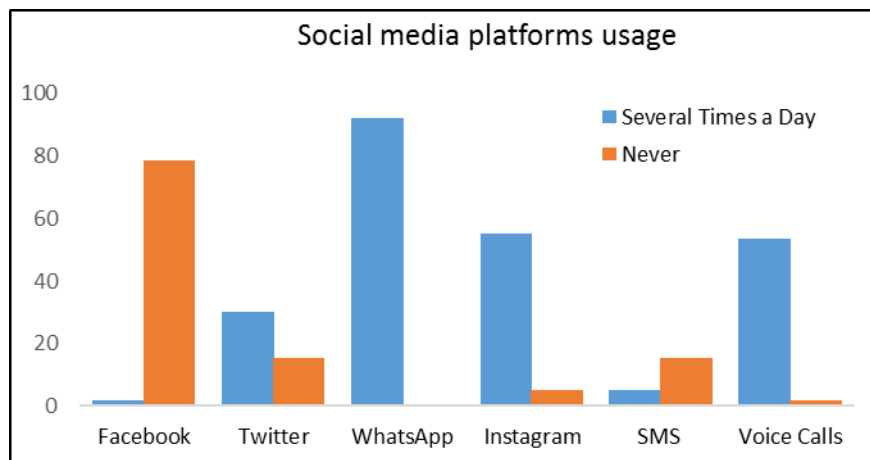
Figure 5.4 Social media platforms usage

5.2.4 Recipient

Questions 16 to 18 in the survey focused on the type of recipients with whom the participants were socializing using various social media platforms. The focus is on three main categories of recipient: friends, relatives and instructors. The results indicate that 64.1% of the participants used different social media platforms to communicate with friends several times a day, 39.8% of them communicated with relatives several times a

day and 47.6% said they never used social media to interact with teachers (*Figure 5.5*). This result indicates that the participants are not using social media to interact with teachers presumably for a number of reasons, in particular, they do not see social media as a proper medium or they rely on other means of interaction, such as face to face communication.
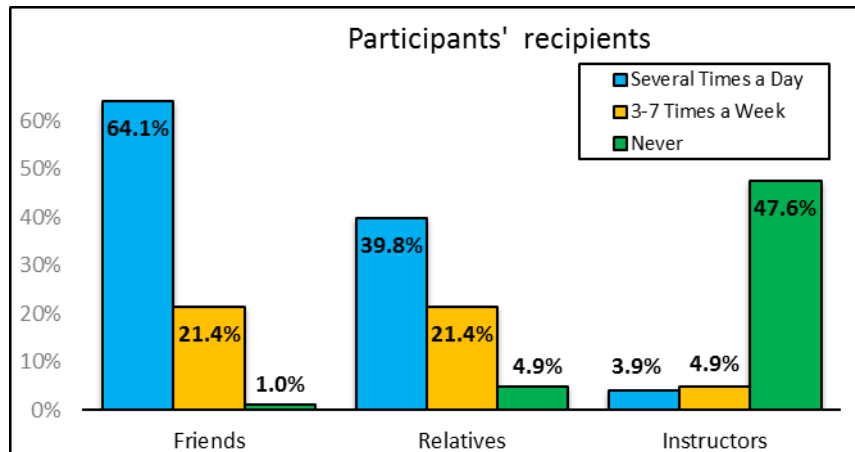
Figure 5.5 Participants' recipients

5.2.5 Use of abbreviations in different social media platforms

Questions 20 to 24 focused on the use of abbreviations common in English online language, such as "u" instead of "you", when using different social media platforms. To measure the level of their perceived use of abbreviations, participants selected their normal use on a five point Likert scale: always, often, sometimes, rarely and never. A sixth option was given, NA (not applicable), to indicate that the participant did not use this social media platform. The questionnaire also shows that abbreviations were mainly used in WhatsApp when participants interacted in English: around 75% of the participants reported using abbreviations 'always' or 'sometimes' on WhatsApp. It is important to note that the abbreviations asked about were the English ones and a good explanation for participants not using abbreviation in WhatsApp might be that they were interacting in Arabic, which does not use abbreviations or short forms in online or standard written language. Results also indicate that on other platforms such as Twitter and Instagram, participants tend not to use, or rarely use abbreviations (*Figure 5.6*). This finding shows that their language use might be affected by the kind of platform in which interactions take place.
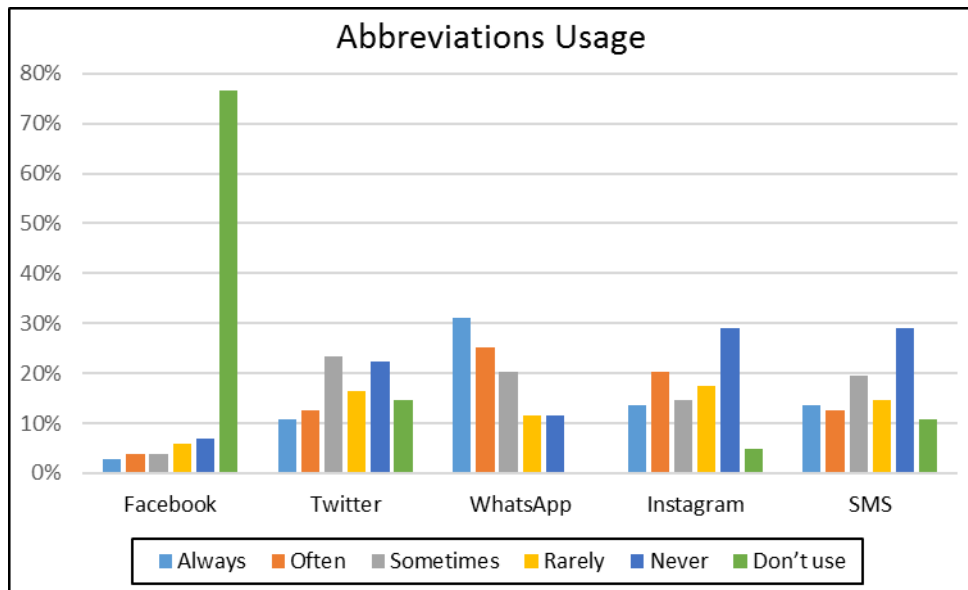
Figure 5.6 Abbreviations usage in social media

The questionnaire further inquires about the use of abbreviation by participants in questions 32 and 33. These questions addressed the use of abbreviations when communicating with friends and instructors. When communicating with friends, the questionnaire shows that around 70% used abbreviations with friends whereas 73.8% never used abbreviations with instructors (*Figure 5.7*).
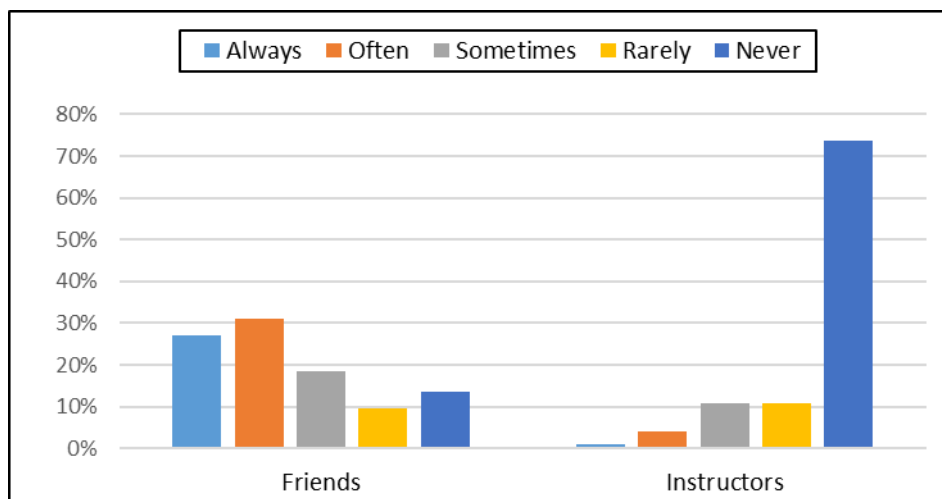
Figure 5.7 Abbreviations with Friends and Instructors

5.2.6 The use of different languages in social media

Questions 25 to 31 explore the use of different types of codes: this includes smilies/emoticons (e.g.☺), Arabic, English, Arabish (kaif 7alik), Arabicized English (سي يو) informal spoken Arabic and colloquial Arabic when communicating via different social media platforms. According to the questionnaire, Arabic, all varieties of Arabic and emoticons were reported to be 'frequently' used by the participants whereas English and Arabicized English were used 'some times' and Arabish was 'rarely' used (*Figure 5.8*). The majority of participants (81.6%) reported that they 'always' used smilies/emoticons. Arabic was 'always' used by 58.3% and 'often' by 30.1%. Informal spoken Arabic had a higher use since 86.4% 'always' use it. Colloquial Arabic, or accents, was 'frequently' used by the participants: 'always' by 42.7% of the participants, and 'often' by 19.4%. English was used 'some times' by 80% of all participants. Arabicized English was less used than English but more than Arabish. Arabish, surprisingly, was reported to be 'rarely' used by participants with 68.9% said they never used Arabish.
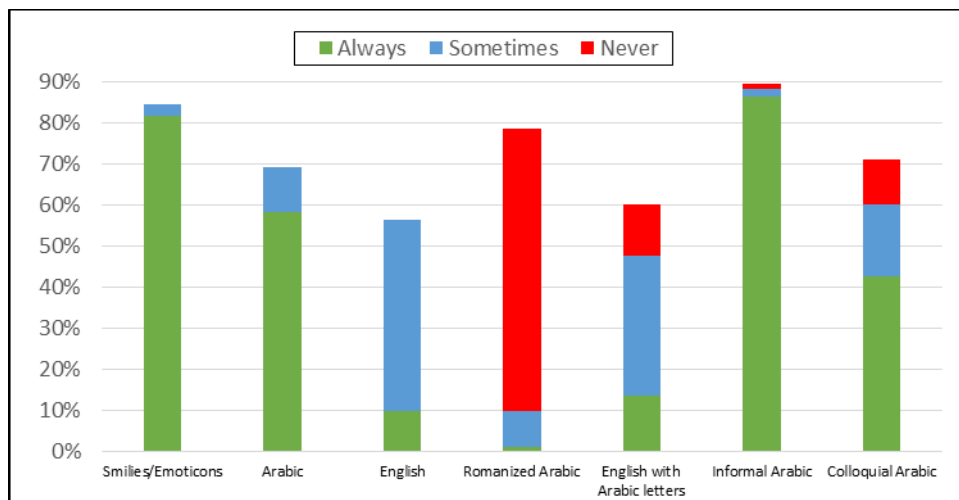
Figure 5.8 The use of different languages in social media

5.2.7 Conclusion

The results from the questionnaire indicate that participants use a variety of platforms to interact with family and friends, but not teachers, for a number of purposes. WhatsApp was the most used app and participants accessed it several times a day. Participants interacted using a variety of languages, mostly Arabic, and used features associated with Netspeak mostly in WhatsApp with friends. The most used language varieties were Arabic, emojis and English respectively. On the other hand,

Arabicized English and Arabish were the least used varieties. All these conclusions indicate that the participants favored some platforms, types of languages and recipients over others platforms, languages and recipients in their daily online interaction. The next section provides similar findings obtained from electronic literacy logs.

5.3 Descriptive results from the electronic literacy logs

As explained in the methodology chapter, a total of 47 participants were included in a 4-day exercise in which participants noted their social media activity in an electronic literacy log. The literacy log contained questions about the user name, date, and time of online interaction, name social media sites used (Email, Instagram, SMS, Snapchat, Twitter, WhatsApp or Other), type of recipients (family, friends, teacher or others), language/s used, type of communication (text, image, video or combinations), time spent (how long?), purpose of interaction (give information, ask for information, keep in touch, entertainment), literacy type (read, write, like, watch or combinations), and text length. The analysis of the data from the electronic literacy logs has provided general insights into the participants' online activity.

5.3.1 Popular social media sites

The participants were asked to indicate the platforms they visited during the four days. The following table (Table 5.2) shows that WhatsApp was the most popular site visited- 774 times in 4 days - followed by Snapchat:

Table 5.2 Social media use count

Email	Instagram	Other	SMS	Snapchat	Twitter	WhatsApp
34	132	171	11	277	77	774

It is important to note that the activity level varies between different participants because some participants used a specific platform several times. Therefore, two different results are presented here: the first one represents the overall activity in all platforms including multiple access of a social platform via a single user (number of times platforms were accessed). The results of overall activity in various social media sites, i.e. number of times accessed are presented in the pie chart (*Figure 5.9*)

illustrating the percentages. The chart also confirms that WhatsApp was the most used application followed by Snapchat and Instagram.
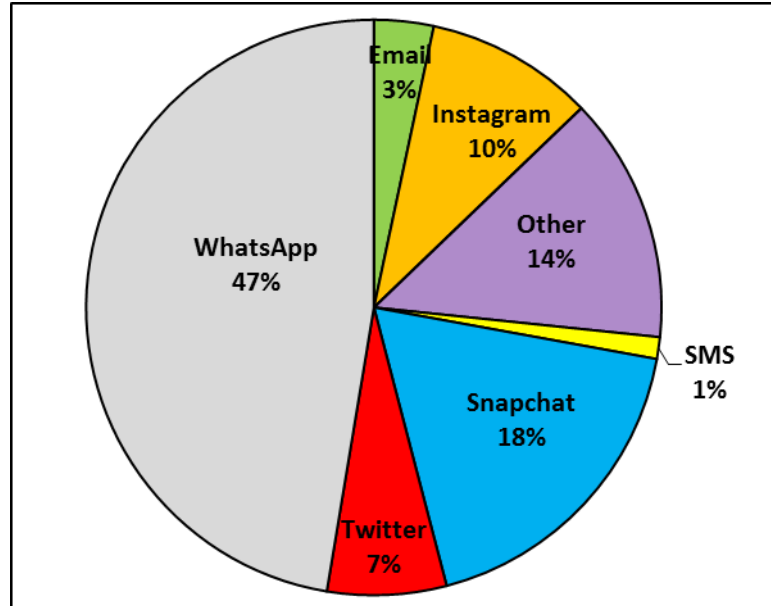
Figure 5.9 Overall Activity

The second type of results presents the number of participants per platform (number of participants accessed a platform with no account for multiple times of access per individual). The chart below (*Figure 5.10*) illustrates the number of participants using different social media who were monitored during the 4-day period. The data reveals that WhatsApp was used by all participants (100%), and both Instagram and Snapchat were second in popularity.
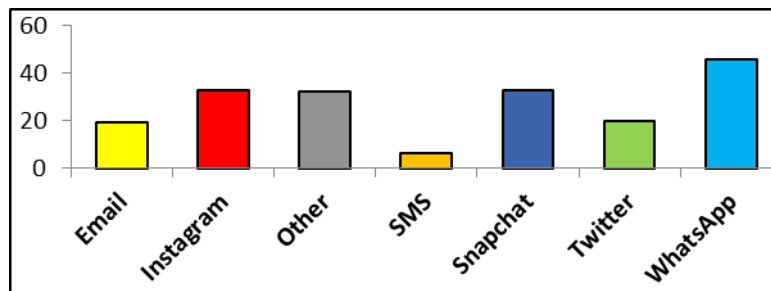
Figure 5.10 Number of Participants per Social Media

5.3.2 Recipients: family, friends and teachers

In the Electronic Literacy Log, participants were asked to log the type of recipient they were interacting with. Similar to what has been found from the questionnaire, the participants reported that the different platforms were used to communicate mostly with friends and family rather than teachers (**Error! Reference source not found.**). Because the participants interact with different types of recipients at the same time, percentages represent responses from the users of a specific application.

Table 5.3 Recipients in social media

Friends	Email	Instagram	Other	SMS	Snapchat	Twitter	WhatsApp
average number per 4 days for users	1.4	2.4	4.2	1.0	6.2	2.5	11.0
average number per 4 days for all 46	0.2	1.3	2.3	0.0	4.1	0.7	10.5
number of users	7	25	25	2	30	13	44
% of users	15%	54%	54%	4%	65%	28%	96%
Family	Email	Instagram	Other	SMS	Snapchat	Twitter	WhatsApp
average number per 4 days for users	1.0	3.0	1.4	1.3	1.9	5.0	6.0
average number per 4 days for all 46	0.0	0.1	0.2	0.1	0.7	4.3	5.4
number of users	1	1	7	3	16	39	42
% of users	2%	2%	15%	7%	35%	85%	91%
Teacher	Email	Instagram	Other	SMS	Snapchat	Twitter	WhatsApp
average number per 4 days for users	1.5	0.0	0.0	3.0	0.0	1.0	2.4
average number per 4 days for all 46	0.2	0.0	0.0	0.1	0.0	0.1	0.7
number of users	6	0	0	1	0	3	14
% of users	13%	0%	0%	2%	0%	7%	30%

As shown in the above table, WhatsApp was predominantly used when communicating with friends, family and instructors. However, participants preferred different social platforms when communicating with different recipients. Almost all forms of social network sites, such as WhatsApp, Instagram, Email and Snapchat, were used to communicate with friends. It was only in the case of SMS and Twitter where 'Family' came in the first place; otherwise, family members were communicated with less than friends. When communicating with teachers, participants used WhatsApp, Emails, SMS and Twitter, which were generally used for text-based interactions, but never Snapchat, Instagram or other listed apps such as vine and Skype (*Figure 5.11*).
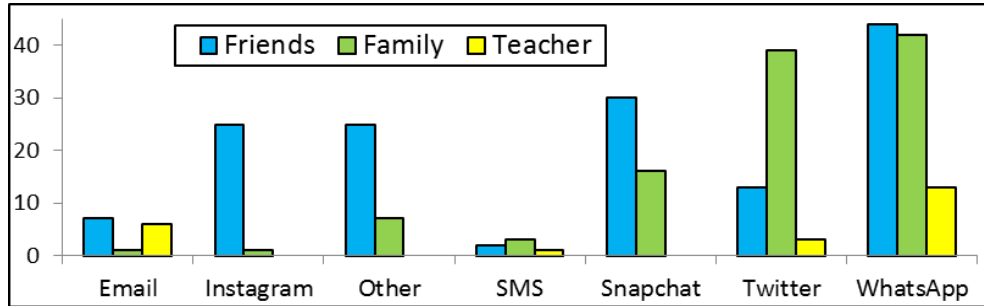
Figure 5.11 Friends, family and teachers

5.3.3 Language used

According to the Electronic Literacy Log data, four language varieties were used by participants:

> 1. Arabic,
> 2. English,
> 3. Arabicized English (English with Arabic letters, such as سي يو, i.e. see you), and
> 4. Arabish (Arabic with Roman letters and numerals, such as keef 7alik, i.e. how are you?).

As reported by the Electronic Literacy Log, Arabic was the dominant language used in most (62%) of the participants' communication. When the participants code-mixed, the proportion of Arabic was greater, indicating that Arabic was more likely to be the matrix language. In addition to communicating using English (27%), participants also reportedly used Arabicized English (10%). It was easier for the participants to continue using Arabic letters for English language communication, as this did not require them to switch the keyboard to English. Arabish was used in only 1% of all interactions (*Figure 5.12*).
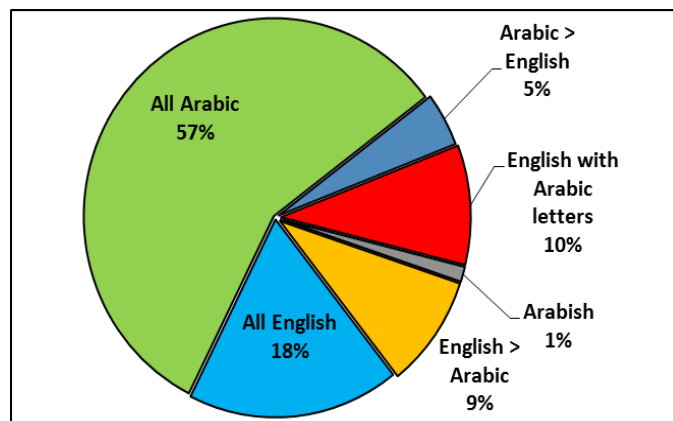
Figure 5.12 Languages used by participants

Results also indicate that different languages were used on different platforms. For example, when using SMS, only Arabic was used in almost all instances. On Instagram, participants reported an equivalent usage of Arabic (49.6%) and English (50.4%). When participants used WhatsApp, Snapchat, and Twitter, Arabic was used more frequently than English (Table 5.4). The data further demonstrates that participants used different languages with different recipients. Participants used Arabic almost invariably with their families, but tended to code switch with their friends. Arabish and Arabicized English were used often with friends but very rarely with family and never with teachers.

Table 5.4 Languages usage by social media

	Email	Instagram	Other	SMS	Snapchat	Twitter	WhatsApp
Arabic more than English	2.9%	33.6%	23.8%	0%	22.7%	22.2%	13.3%
English with Arabic letters	0%	0%	0%	0%	0.8%	0%	1.8%
Arabish	0%	0.8%	0%	0%	0.4%	0%	0.3%
English more than Arabic	2.9%	31.1%	9.3%	0%	5.6%	22.2%	4.2%
All English	85.3%	18.5%	33.1%	10%	16.3%	22.2%	8.4%
All Arabic	8.8%	16.0%	33.8%	90%	54.2%	33.3%	71.9%

5.3.4 Modes used

The type of modes used in interactions is shown below (*Figure 5.13*). The participants indicated in the Electronic Literacy Log whether their communication included text, image, video or combination of them. Most of the reported communication was text-based representing a total of 42.6% of all participants' social media interaction. The participants also reported the use of various combinations of text, audio, video and image.

Analysis of the relationship between communication mode and platform showed a tendency among participants to vary modes of communication according to the platform being used. This result is linked directly to the affordances and constraints of different platforms. For example, Snapchat was the most popular platform for sharing videos and images, followed by Instagram, as these two platforms are designed mainly for the exchange of these modes and have constraints only over the use of text. On the other hand, WhatsApp was reported to be used mainly for text, as the application is designed for chats between two or more users; nevertheless, although WhatsApp has

the affordances for exchanging images and videos, these modes were used less frequently by the participants than text.

In relation to the recipient type, it was observed that text, images, and videos were exchanged with friends and family, while very few images or videos were exchanged with teachers. This implies that the nature of the relationship with a recipient affects the mode of communication. Generally speaking, participants appeared unlikely to use social media platforms to interact with teachers and, in the few interactions mentioned, they used platforms reported to be used primarily for textual interaction.
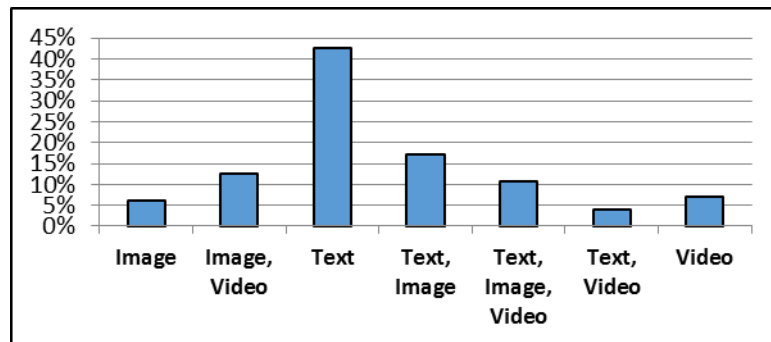
Figure 5.13 Types of modes

5.3.5 Types of literacy

The Electronic Literacy Log shows that participants interact online using various literacies; these include reading, writing, 'watching/looking at', 'liking' and a combination of these. The mostly practised types of literacy were reading and writing in one interaction, such as in reading a text and responding to it, at 33% of participants' overall actions (*Figure 5.14*).
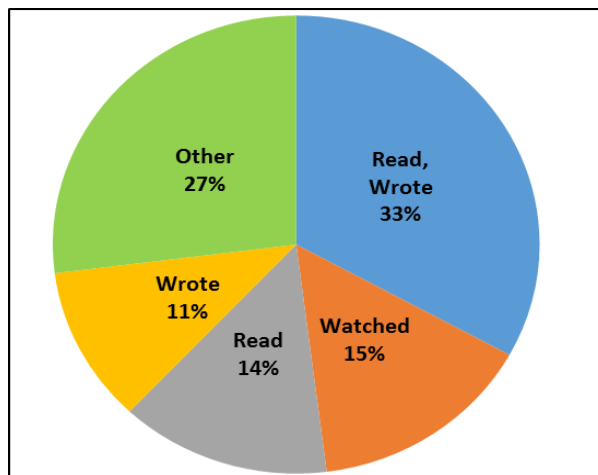
Figure 5.14 Type of activity

The results obtained from the Electronic Literacy Log with regard to the type of literacy used online can be explained in relation to the affordances and constraints of different platforms. Different literacies were also used in different online sites. For example, in Instagram there is more reading, 'watching/looking at' and 'liking' than writing, whereas in Snapchat 'watching/looking at' is the literacy type most used. These findings can be related to the different affordances and constraints each application has; in Instagram, one can comment using text, read comments, look at images and 'like' posts whereas in Snapchat, users can 'watch/look at' but cannot 'like' a snap. Another relevant result indicates that the participants reported that they used different literacy types with different recipients. For example, with family, the dominant literacies were reading, writing and 'watching/looking at' but not much 'liking' was reported. However, with friends, 'liking' alongside reading, writing and 'watching/looking at' occurred. These results are related to the type of platforms used with particular recipients and the type of literacy afforded by them. For example, 'liking' was used more with friends because the participants used Instagram more with friends.

5.3.6 Purposes for using social media

The results from the Electronic Literacy Log indicate that participants used social media for various purposes. These purposes were elicited from the participants themselves in the pilot study conducted prior to commencing the Electronic Literacy Log. Most participants (43%) indicated that their use of social media was mainly for entertainment and 27% of them used online platforms to keep in touch with others (*Figure 5.15*).
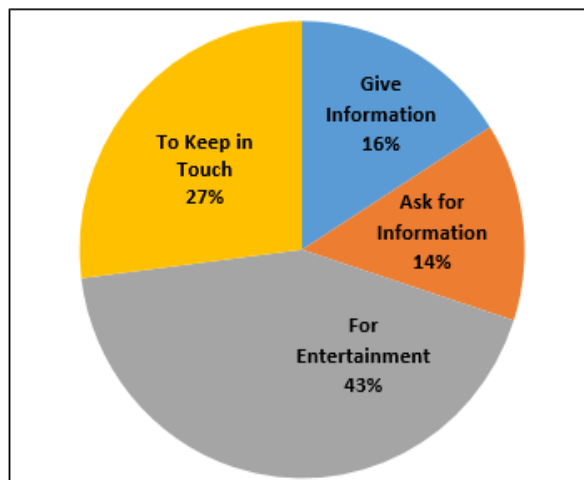
Figure 5.15 Purposes for using social media

The data also shows that different platforms were used for different purposes. For example, Instagram (82.9%), Twitter (69.3%) and Snapchat (80.2%) were mainly used for entertainment and WhatsApp was used mostly to keep in touch with others (36.7%). What seems dominant in WhatsApp and less used in the other platforms is text; so participants used text to keep in touch and experiment with multimodal forms to have fun.

Table 5.5 Purposes for using different social media platforms

	Email	Instagram	Other	SMS	Snapchat	Twitter	WhatsApp
Entertainment	0%	82.9%	65.3%	0%	80.2%	69.3%	18.2%
Ask for information	43.8%	0.8%	6.0%	45.5%	1.9%	10.7%	20.6%
Give information	37.5%	2.4%	7.2%	45.5%	3.8%	6.7%	24.5%
Keep in touch	18.8%	13.8%	21.6%	9.1%	14.1%	13.3%	36.7%
	100%	100%	100%	100%	100%	100%	100%

The Electronic Literacy Log data, also, shows that there are different purposes for communication with different recipients. Participants communicated with family mostly to keep in touch, with friends for entertainment and with teachers to ask for information. Not only the participants had different purposes with different recipients but also used different languages for different purposes. For example, they reported the use of Arabic mostly for entertainment and to keep in touch with others whereas English was used for entertainment more than keeping in touch with others. An interesting finding shows that Arabish was never used to ask for information.

5.3.7 Time on social media

Participants logged in the time they spent on each platform visited. The reported data indicates that the majority of the visits took between 1-15 minutes per single visit. The following pie chart (*Figure 5.16*) represents the distribution of time spent in single visits:
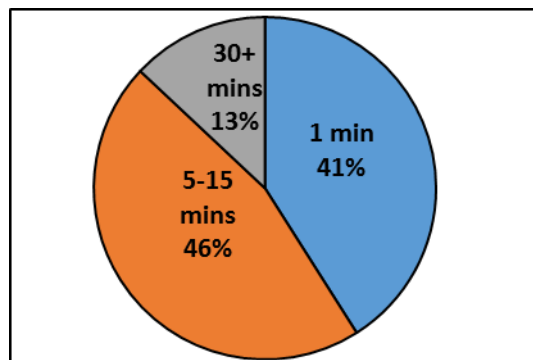
Figure 5.16 Time per visit

On average, it was reported that participants spent most of their social media time on WhatsApp (53.1%), followed by Snapchat (22.7%). This result, indicating the frequent use of WhatsApp and Snapchat, was one of the reasons which directed this study to focus on WhatsApp and Snapchat (*Figure 5.17*):
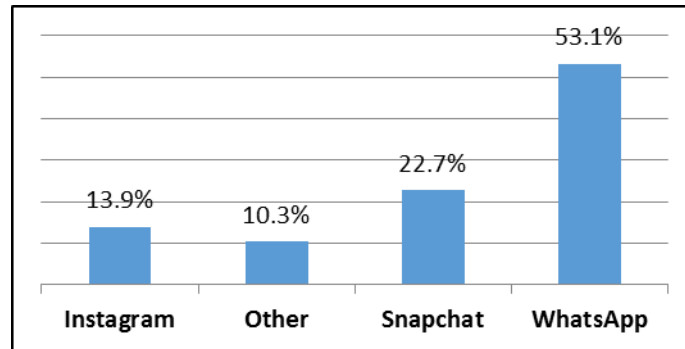
Figure 5.17 Time on Social Media

5.3.8 Concluding comments on data from electronic literacy logs

The reported data from the Electronic Literacy Log shows that the participants used different platforms with different types of recipients. These interactions mostly took place on WhatsApp and Snapchat. However, the participants rarely interacted with teachers and preferred particular platforms for this interaction such as emails or WhatsApp. The reported data shows that the participants' interaction can be characterized as interactive, multimodal and multilingual. The participants were mostly using social media platforms to interact with others as indicated by the most literacy types used, i.e. reading and responding in writing to others. The participants used a variety of codes and modes for different purposes, such as entertainment and keeping in touch with others. Among the codes used, Arabic was the most used language whereas Arabish was the least used.

One conclusion that can be inferred is that the affordance of the platform affected the participants' interaction. There is an empirical correlation between type of social media platforms, mode, literacy type and purpose of interaction. However, this should not indicate technological determinism, i.e. control of technology over interaction. The Electronic Literacy Log provides some data that shows that affordances and constraints of technology are not the only deterministic features of an interaction. Type of

recipient and purpose of interaction may also affect language choices including code and mode.

Although the Electronic Literacy Log succeeded in tracking some aspects of the participants' online interaction, it failed to provide an understanding of participants' actual interaction and language use within different topics. A good understanding of correlation between language use, platforms, recipients and topic was obtained by coding authentic samples from the participants as discussed in the following sections in this chapter.

5.4 Descriptive results from the participants' online communication: WhatsApp

In this section, the results from the coding stage are reported. Adopting a grounded theory approach, I coded 220 WhatsApp chats for topic, language, mode, type of recipient and number of recipients, using MAXQDA, a qualitative analysis software which allows for the retrieval of overlapping codes and contributes to an understanding of the relationship between them. The coding involved a grounded theory approach. Rather than being determined in advance, topics emerged from data. The data were allowed to speak for themselves, thus presenting a more realistic view of the participants' online practices. This approach differed from the questionnaire and the electronic literacy logs in which predetermined categories were given to participants. The results demonstrated an analytical correlation between different features, such as code choice, topic, and audience.

5.4.1 Topics in WhatsApp

The coding of all WhatsApp chats according to topic using MAXQDA paved the way for an investigation of the participants' actions and practices. Table 5.6 (below) presents a list of all topics found in the WhatsApp data, as well as their occurrence, thereby indicating the aims and actions that the participants were trying to accomplish.

5. DESCRIPTIVE RESULTS

Table 5.6 List of all topics and their occurrence in WhatsApp

Topic	Number
1. School matters	367
2. Social media	152
3. Getting together	98
4. Technology	44
5. Photography	43
6. Extracurricular activity	37
7. Movies/films	35
8. Shopping	33
9. Cooking and food	32
10. Beauty	31
11. Health issues (self or other)	28
12. Location	22
13. Contact someone	20
14. Academic topics	19
15. Children (related)	18
16. Jokes	17
17. Marriage	15
18. A friend	15
19. Playing games	15
20. Greeting	14
21. Travelling	12
22. Graduation	11
23. Condolences (death, funeral)	11
24. Language (meaning of words…)	10
25. Money matters	10
26. Workshops and courses	10
27. Prayers and Quran	9
28. Teachers	8
29. Appointments (medical, official)	8
30. Transportation	8
31. Houses	7
32. Family	6
33. Women's rights	6
34. Sleeping	5
35. Work and jobs	5
36. Pets and insects	5
37. Friendship	4
38. Drawing	4
39. Misunderstandings	3
40. Terrorisms/world news	2

The above list is arranged according to the popularity of the topics coded from the WhatsApp data, with *School matters* appearing at the top of the list. This topic was discussed in one-to-one chats and in WhatsApp groups and it included talk about

lectures, exams, assignments, times, venues, dates, etc. The second most popular topic was *Social media* and this was derived from conversations about people sharing videos, images and multimedia content on various social media platforms. The third item on the list is *Getting together,* which included plans, arrangements or invitations to meet up in university, at home, or in restaurants and other public places.

The participants' discussion of these topics on WhatsApp not only gave an idea of what they were accomplishing via WhatsApp, but also situated them in different discourse systems (Scollon et al., 2012). In general, the topics centred upon university, social and everyday matters. In this way, they also exchanged notes, handouts and questions, or else kept abreast of social media activity by sharing links, images and videos from various social media platforms. WhatsApp was moreover used to communicate about day-to-day issues, such as arrangements to meet, locating friends, instructions on how to solve problems with laptops or other mobile devices, and even recipes. In general, WhatsApp kept the participants in touch with each other; enabling them to send greetings to each other, ask after each other's health, send condolences and receive news about friends and relatives.

5.4.1.1 Topics and Recipients

The notion that the participants participated in different discourse systems, according to the topics discussed in their WhatsApp chats, raised questions about who they shared these systems with. This section therefore reports the results from the code matrix relation between topics and recipients. Table 5.9 (below) summarizes the number of occurrences of each topic shared with family members, friends and instructors. For example, the MAXQDA code relation results for the topics, *School matters* and *Family* resulted in 27 occurrences, as shown in the following Table (Table 5.7).

Table 5.7 Topics and types of recipient in WhatsApp

Topic	Family	Friends	Teachers	Total
1. School matters	27	325	0	364
2. Social media	105	47	1	153
3. Getting together	48	39	11	98
4. Technology	21	21	2	44
5. Photography	24	18	1	43
6. Extracurricular activity	1	33	3	37

7. Films/TV/music	11	24	0	35
8. Shopping	23	9	1	33
9. Cooking and food	22	10	0	32
10. Beauty	18	13	0	31
11. Health issues (self or other)	19	9	0	28
12. Location	10	12	0	22
13. Contact someone	11	9	0	20
14. Academic topics	0	19	0	19
15. Children (related)	16	2	0	18
16. Marriage	9	6	0	15
17. A friend	1	14	0	15
18. Greeting	7	7	0	14
19. Graduation	2	8	1	11
20. Language (meaning of words…)	1	6	4	10
21. Money matters	5	3	2	10
22. Workshops and courses	1	9	0	10
23. Prayers and Quran	7	2	0	9
24. Teachers	0	8	0	8
25. Appointments (doctor or government)	4	4	0	8
26. Transportation	8	0	0	8
27. Travelling	7	3	0	10
28. Houses	7	0	0	7
29. Playing a game	11	4	0	15
30. Work and jobs	4	1	0	5
31. Pets and insects	1	4	0	5
32. Jokes	14	3	0	17
33. Condolences	6	5	0	11
34. Family	5	1	0	6
35. Women rights	3	3	0	6
36. Sleeping	3	2	0	5
37. Friendship	1	3	0	4
38. Drawing	0	3	1	4
39. Misunderstandings	1	2	1	3
40. Terrorists	0	2	0	2

The data show that the participants exchanged information on certain topics and actions with specific individuals. The code matrix relations between the topics and recipients on WhatsApp showed that the topics discussed differed according to the recipients involved. For example, there were topics that were commonly discussed with friends, but rarely shared with family members. These included *School matters*, *Academic topics*, *Movies* and *Teachers*. *Movies* and *Music*, for example, were less frequently discussed with family members and then only with siblings and cousins, but never parents. Other topics that were more commonly exchanged with family members than with friends included *Social media* (sharing), *Children*, *Houses*, *Health Issues*,

Prayers and *Shopping*. However, the topics occurring with almost equal frequency in exchanges with family members and friends included *Women's rights*, *Appointments*, *Greetings*, *Location* and *Technology*. Conversely, WhatsApp was rarely used to communicate with instructors or in their online presence, but when it was, the topics shared included *Getting together*, *Language* and *Graduation*. These few instances of WhatsApp communication with instructors identified in the data showed that WhatsApp was only used for logistical matters, but not to keep in touch or for academic purposes. One example consisted of an instructor in a large group organizing an extracurricular activity, while another involved liaising with a personal tutor to arrange meetings. There was a further occurrence of communication with an instructor to organize a home corner for an extracurricular activity and plans to purchase items for this purpose. This result aligned with data reported from the Electronic Literacy Log, which indicated that the participants used WhatsApp to communicate with different recipients for different reasons.

5.4.1.2 Topic and Number

In this section, the relationship between the topic discussed and the number of recipients involved in the respective interaction is illustrated. 'Number' therefore refers to the type of chat room used for WhatsApp interactions, such as a one-to-one encounter or a group chat. In the WhatsApp data, there were a total number of 225 chats; 148 of these were dyadic (involving two participants) and 77 were identified as group chats. A code matrix relation between the topic discussed and the number of recipients involved resulted in the following Table (Table 5.8).

Table 5.8 Topic and number of recipients in WhatsApp

Topics in WhatsApp	Dyadic chat	Group chat	Total number of occurrences
1. School matters	197	170	367
2. Social media	35	117	152
3. Getting together	45	53	98
4. Technology	23	21	44
5. Photography	14	29	43
6. Extracurricular activity	7	30	37
7. Movies	10	25	35
8. Shopping	23	10	33
9. Cooking and food	9	23	32

10. Beauty	20	11	31
11. Health issues (self or other)	10	18	28
12. Location	16	16	22
13. Contact someone	16	4	20
14. Academic topics	8	11	19
15. Kids (related)	2	16	18
16. Marriage	7	8	15
17. Travelling	5	7	12
18. A friend	13	2	15
19. Greeting	12	2	14
20. Graduation	5	6	11
21. Language(meaning of words…)	7	3	10
22. Jokes	3	14	17
23. Condolence	2	9	11
24. Pets and insects	2	3	5
25. Money matters	5	5	10
26. Workshops and courses	3	7	10
27. Playing a game	0	15	15
28. Prayers and Quran	1	8	9
29. Teachers	5	3	8
30. Appointments (doctor or government)	7	1	8
31. Transportation	8	0	8
32. Houses	0	7	7
33. Work and jobs	0	5	5
34. Family	1	5	6
35. Women rights	0	6	6
36. Sleeping	4	1	5
37. Friendship	4	0	4
38. Drawing	2	2	4
39. Misunderstandings	3	0	3
40. Terrorists	0	2	2

As shown in Table 5.10, above, some topics tended to be discussed in group chats, while others were more common in dyadic chats. The topics that were generally discussed in groups were more likely to be of a social nature, i.e. topics about the group and to groups. These included *Social media*, *Getting together*, *Movies, Extracurricular activity*, *Family*, *Women's rights*, *Houses* and *Prayers.* On the other hand, topics about specific individuals were usually discussed in dyadic chats; for example, *Teachers, A friend*, *Misunderstandings*, *Greetings, Doctor or government appointments*, *Transportation* and *Contact someone.*

This section reveals a link between topic and number, i.e. whether the topic was discussed in a group or in a one-to-one interaction. The following section concerns

'language codes', i.e. the language used and whether the topic or type of recipient affected the choice of code.

5.4.2 WhatsApp and codes

As identified in the Electronic Literacy Log data, the participants used a number of languages and types of language online (language codes). The grounded theory coding of the WhatsApp chats also confirmed their multilingual nature. On the surface, these would seem to support the widespread claims of language being 'ruined' by social media. However, as in the results derived from the link between topic and recipients, just as certain topics were found to be associated with specific people, the languages used by the participants varied according to the people they were communicating with and the topics discussed. The following is a list of the language codes identified and their occurrence:

Table 5.9 Language codes used in WhatsApp and their occurrence

Language	Number of occurrence
Arabic	11104
English	1891
Arabicized English	1542
Arabish	47

In the WhatsApp data collected, the participants used different language codes to communicate with friends and family members via WhatsApp: Arabic, English, Arabicized English and Arabish. Contrary to claims of Arabish dominating online interaction, Arabic was found to predominate here, followed by English. The use of Arabicized English, i.e. English written in Arabic script, and Arabish, i.e. Arabic written in Roman script (Romanised Arabic) was less common. These language codes were consequently examined by investigating code switching patterns and links to different topics, and type and number of recipients.

5.4.2.1 Code switching in WhatsApp

This section describes the code switching pattern between the languages found in the WhatsApp data. The term 'switching' is used when describing the shift from one language to another in WhatsApp to emphasize the sequential shift whereas 'mixing' is

used when describing the shift in Snapchat to emphasize the simultaneous presentation of modes and codes.

First, code switching in WhatsApp is examined within an utterance, i.e. the co-occurrence of different varieties of languages in one turn. For example, participants code switch from English to Arabish within the same utterance as in "No dema shd3wa" (the Arabish word "shd3wa" translates into 'don't worry'), from Arabic to Arabicized English such as "و بكره عندي ميد واحد بالصباح ذين ام فري بيبيبي" (which translates into 'tomorrow I have one **mid then I'm free baby**'. The bold text was in Arabicized English), and from Arabicized English to English as in " الاء طلع السوسيو اللين Language maintainance" (which translates into "Ala, the socio (exam) is until 'Language maintainance'"). The following table shows the results of code relations between different language varieties that co-occur within the same turn. The table shows the number of times the participants switch between different languages, e.g. from Arabic to English, in the same utterance:

Table 5.10 Code switching in WhatsApp within the same utterance

	Arabic	English	Arabicized English	Arabish
Arabic				
English	141			
Arabicized English	1216	27		
Arabish	0	28	0	

The results indicate that the matrix language in the data is either Arabic or English. Arabicized English and Arabish are never used as the matrix language and are used for a quick switch mostly using the same script. The table shows that participants tend to code switch mostly from Arabic to Arabicized English. This is because Arabic is the most used language and to code switch to English, participants use the same Arabic scripts to communicate in English conforming to the principle of least effort. To confirm this conclusion, which shows that participants tend to use the same script when interacting in different languages, the participants did not code switch from Arabish, which uses English script, to Arabicized English, which uses Arabic script, or from Arabic to Arabish within the same utterance in WhatsApp.

Second, code switching is examined in neighbouring utterances (near occurrence), i.e. before or after a WhatsApp turn. The sequential code switching can be by the same participant as in the following example (translation is provided between brackets):

R.A.A✡: كذا نكسه   [That's a failure]

R.A.A✡: Alhamdillah   [Thank you God]

Or between different participants as in the following extract:

Mona: Its ok shahy

Shahy☕: مراح تستفيدين شي مها اذا عرفتي سو سكروا السالفه [You won't get anything from knowing what happened so let's change the subject]

The following table shows the results of code relations between different language varieties that occur between neighbouring turns, i.e. before or after an utterance. Each number represents the number of times the participants code switch between different languages before or after an utterance:

Table 5.11 Code switching in WhatsApp between utterances

	Arabic	English	Arabicized English	Arabish
Arabic				
English	703			
Arabicized English	3623	166		
Arabish	4	108	0	

The results of code switching between near turns are similar to the results found in code switching within the same turn. Most code switching found in the WhatsApp data occurs from Arabic to Arabicized English. Not only did the participants not code switch between Arabish and Arabicized English in one turn, but they also did not switch between these varieties in near occurrences, i.e. the turn before or after.

What this descriptive analysis of code switching in WhatsApp reveals is that Arabic or English are used as the matrix languages and when participants code switch, they tend to switch to a different language using the same script, i.e. from Arabic to Arabicized English, probably motivated by the principle of least effort.

5.4.2.2 Language Codes and Topics

The data show that the participants favored specific languages when talking about certain topics. Table 5.12 lists the topics found and the languages used to discuss them.

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Table 5.12 Code matrix relations between topics and language codes in WhatsApp

Topic	Arabic	English	Arabicized English	Arabish
1. School matters	5017	708	906	24
2. Social media	518	222	40	6
3. Getting together	776	27	86	0
4. Technology	401	67	64	6
5. Photography	177	33	17	5
6. Extracurricular activity	608	39	121	3
7. Films	329	63	34	0
8. Shopping	233	75	16	1
9. Beauty	199	68	16	1
10. Health issues (self or other)	275	14	0	1
11. Party	194	86	10	8
12. Jokes	50	66	0	2
13. Feeling	97	81	12	7
14. Food and cooking	164	12	18	3
15. Location	84	18	7	3
16. Contact someone	80	12	9	2
17. Travelling	82	5	3	0
18. Academic topics	92	136	28	2
19. Children (related)	77	1	3	0
20. Marriage	283	40	9	3
21. A friend	119	64	7	6
22. Greeting	60	32	3	3
23. Graduation	143	1	11	1
24. Language (meaning of words)	86	16	17	0
25. Money matters	58	0	5	0
26. Workshops and courses	171	11	33	2
27. Prayers and Quran	74	0	2	0
28. Teachers	92	18	20	4
29. Appointments (doctor or government)	96	3	7	2
30. Condolence	50	1	1	0
31. Transportation	66	4	4	0
32. Houses	44	0	0	0
33. Work and jobs	21	0	1	0
34. Weather	17	4	0	0

35. Pets and insects	17	9	0	0
36. Playing a game	40	2	2	0
37. Family	30	4	0	0
38. Women rights	26	2	0	2
39. Sleeping	64	0	4	0
40. Friendship	20	38	5	3
41. Drawing	29	0	4	0
42. Misunderstandings	83	0	5	0
43. Terrorists	7	0	0	0

The participants used Arabic for topics that were usually discussed with family members and English for those that were normally discussed with friends. Another interesting finding was that Arabic was used across all topics, unlike English, which was not used for topics such as *Houses*, *Money matters* and *Prayers.* Arabicized English and Arabish were less common, but appeared in discussions about *School matters* with friends, for example. Interestingly, there is almost no use of Arabicized English and Arabish in the discussion of the topics *Children, Money matters* or *Prayers,* which were mainly discussed with family members. The results of the relationship between topic and language code showed that there were also links to the type of recipient involved, which the following section reveals.

5.4.2.3 Language Codes and Recipients

It is clear from the previous section that the participants' choice of language was linked to the topics being discussed and both language codes and topics were linked to the respective types of recipient. This section confirms this finding with the code matrix relationship between language code and recipient. Here, it was found that different types of recipient were contacted using specific language codes. For example, messages to family members were generally in Arabic and rarely Arabish, whereas communication with friends, who were mainly of a similar age and linguistic background, took place across all four language codes (see Table 5.13, below).

Table 5.13 Code matrix relations between language codes and recipients

Code System Recipient	Arabish	English	Arabicized English	Arabic
Family	2	423	192	2902
Friend/s	41	1427	1282	7811
Teacher	4	41	56	351

5.4.2.4 Language Codes and Number of Recipients

It was revealed in this study that it was not only the type, but also the number of recipients, i.e. two participants in a one-to-one interaction or several in a group chat, involved in an interaction would influence language choices. Table 5.14 (below) shows that Arabish and Arabicized English were less common in group chats than they were in dyadic communication:

Table 5.14 Code matrix relations between language code and number

Code System	Arabish	English	Arabicized English	Arabic
Number\Group	7	378	532	3884
Number\Dyadic	39	1503	1003	7182

5.4.3 WhatsApp and mode

Coding the participants' WhatsApp chats confirmed the multimodal nature of their interaction already indicated by the results of the Electronic Literacy Log. The participants not only interacted in various languages, but also via a range of modes, such as images, voice notes and videos. The following table shows the different types of modes used in WhatsApp in addition to text and the number of occurrences.

Table 5.15 Modes in WhatsApp

Mode	Number of occurrence
Image	636
Audio	470
Video	79

The most mode used in WhatsApp is text. The table above shows that text mode is followed by image, audio and video respectively. The following sections describe the relationship between modes, topics, recipient and number.

5.4.3.1 Mode switching

Modes in WhatsApp operate under the logic of time. In other words, the affordance of shifting form one mode to another, i.e. from text to image or from audio to video, takes place sequentially. WhatsApp does not allow for mode mixing as in Snapchat in which texts and images or videos are posted simultaneously under the logic of space. This section describes the general pattern in mode switching that is found in the participants' WhatsApp interactions.

Table 5.16 Mode shifting in WhatsApp

Mode	Image	Video	Audio
Image			
Video	17		
Audio	19	4	

Interaction in WhatsApp is mostly textual. However, participants sometimes tend to shift from text to image, video or audio. The least type of shift between modes is between videos and audios. However, in all shifts between two or more images, videos and audios, the shift is done by the same participant as illustrated in the following example:

> Munira: <video omitted>
> Munira: <audio omitted>
> Munira: <audio omitted>

5.4.3.2 Mode and Topic

The influence of the topic discussed on the mode used was investigated in the WhatsApp interactions and the following Table (Table 5.17) that lists all topics occurring in relation to the respective modes. It is important to note that these topics were identified by examining the surrounding text, not the multimodal content itself.

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Table 5.17 Code matrix relations between topics and modes

Code System	Audio	Video	Image	SUM
Topic				
Prayers/Quran	1	0	0	1
Terrorists	0	0	0	0
Teachers	4	0	2	10
Family	0	0	0	0
A friend	2	0	7	14
Pets/insects	0	5	1	6
Unidentified topic (Audio or images exchanges)	15	9	5	29
Self-introduction	0	0	0	0
Party	8	0	15	26
Language (meaning of words in English, Word order)	1	0	7	8
Money matters (transaction/collection/salary)	0	0	5	5
Workshops and courses	21	1	9	33
Contact someone	5	0	0	7
Weather	1	0	0	1
Misunderstandings	2	0	1	3
Greeting	2	0	1	4
Doctor/local authorities appointment	2	0	4	6
Health issues (asking about someone's health)	9	0	3	13
Films	8	1	17	26
Transportation	0	0	0	0
Location	1	0	1	4
Feelings	7	1	3	16
Sleeping	0	0	2	2
Friendship	4	1	2	8
Drawing	0	0	2	2
Condolence messages/ Funeral/ death	0	0	0	0
Getting together	24	2	6	32
Marriage	0	0	5	5
Children (related)	4	0	4	8
Travelling	0	0	4	4
Lost and found	0	0	3	3
Graduation	2	0	0	3

Houses	0	0	12	12
Extracurricular activities	21	7	38	69
Women rights	12	2	2	18
Playing a game	0	0	6	6
Humour	1	0	3	4
Work/jobs	0	0	0	0
Social media	31	28	49	112
Photography/ photos	1	1	54	61
Cooking/Food	15	1	11	30
Make up/beauty	22	0	30	53
Shopping	14	0	33	48
Academic topics	23	1	14	41
School matters	168	19	257	457
Technology	31	1	22	58
Total	462	80	640	2432

Although the participants' WhatsApp interactions were mainly textual, various topics tended to be discussed using specific modes. Overall, the participants used images more frequently than videos and audio-material. However, exceptions to this were *Academic topics*, *Cooking, Women's rights* and *Getting together*, where audio-material was more common than images or videos. It would seem that topics provoking explanation or argument were expressed via audio-voice notes. Therefore, the question arises of whether it was sufficient to identify links between topics and modes to conclude that topics were the only factor affecting the choice of mode. This deterministic view was easily rejected, as other factors were examined, such as the effect of different types and numbers of recipients.

5.4.3.3 Mode and Recipient

The modes used varied in relation to the types of recipient involved, in addition to the topic discussed, as highlighted in the previous section. The current section reports the results of the code matrix relation between recipients and modes. The following Table (Table 5.18) shows how the modes used varied according to the type of recipient involved in the respective interactions:

Table 5.18 Code matrix relations between modes and recipients

Code System	Family	Friend/s	Teacher
Mode choice\Audio	182	288	2
Mode choice\Video	31	48	0
Mode choice\Image	230	387	31
Total	443	728	37

The above Table shows that images were the second most popular mode of interaction after text and these were used with family members, friends and teachers. Audio-material was also used with family members and friends, but rarely with teachers. In contrast, videos were the least popular mode used overall, but they were sometimes used with family members and friends, although not with teachers.

5.4.3.4 Mode and Number

This section reports on the relationship between the modes used in one-to-one interactions, as opposed to group chats. The following Table gives the number of occurrences of different modes in dyadic and group chats (Table 5.19).

Table 5.19 Code matrix relations between modes and numbers

Code System	Audio	Video	Image	SUM
Group	191	48	278	517
Dyadic	279	31	358	668

The above Table shows that images and audio-material were more popular in dyadic interaction, whereas videos were more common in group interaction. The links identified in these types of relationship revealed that it was more common for videos to be shared in group chats between family members while discussing *Social media*. This conclusion infers a 'sharing' practice associated with videos in WhatsApp groups, as a way of keeping in touch with fellow group members and encouraging further group participation.

5.4.4 Conclusion

Unlike the results reported for the Electronic Literacy Log, this section has presented findings based on coding the participants' authentic WhatsApp interactions. A grounded theory approach was adopted for the coding process. The relationships between different codes, such as topic, language code, mode, type of recipient, and number of recipients were taken into consideration. The main findings of this section confirm that the participants' WhatsApp interaction was multimodal and multilingual, with Arabic being the most frequently used language, followed by English. Arabish was used the least, despite the claims of its widespread use that are made in the media. Interaction on WhatsApp was found to be mainly textual, but other modes are common, such as images and audio- and video material. A complex relationship was subsequently revealed between topics, types of recipient, languages and modes, which requires a more detailed analysis of selected interactions to investigate what the participants are *actually doing* with these resources.

5.5 Descriptive results from the participants' online communication: Snapchat

In addition to coding the participants' WhatsApp chats, 109 snaps from the participants' Snapchat posts were coded for topic, code and mode following a grounded theory approach. This section presents the descriptive results from the MAXQDA coding of Snapchat interaction in relation to topics, codes, links between code and topic, and modes in Snapchat.

5.5.1 Topics in Snapchat

An interesting finding from the coding of snaps for topic is that topics in Snapchat differed from those found in WhatsApp in number and type. The topics found in the Snapchat data reflect the essence of Snapchat in which capturing the moment, *My Story,* on the spot is essential. Topics included the participant's current state, food, beauty, parties, and music. Interestingly, topics that were found in abundance in WhatsApp, such as teachers, contacting someone, health issues and academic topics were rarely or never found in Snapchat. These findings can be explained by understanding the affordances and constraints of the two platforms. WhatsApp is designed mainly for textual interaction between two or more people whereas Snapchat

is designed to display photos and videos taken by the participants themselves. In addition, Snapchat, allows for few words to be displayed on top of the snapped image or video which makes the discussion of academic topics very difficult. The following table (Table 5.20) lists all the topics found in the Snapchat data and the number of occurrences:

Table 5.20 Topics in the Snapchat data and number of occurrence

Topic	Occurrence
Topic\Thoughts	0
Topic\Automated text	0
Topic\Prayers/Quran	3
Topic\Terrorists	0
Topic\Teachers	0
Topic\Family	1
Topic\A friend	6
Topic\Current state	29
Topic\Pets/insects	3
Topic\Unidentified topic (Audio or images exchanges)	0
Topic\Self introduction	0
Topic\Party	11
Topic\Language (meaningof words in Eng, Word order)	0
Topic\Money matters (transaction/collection/salary)	0
Topic\Workshops and courses	0
Topic\Contact someone	0
Topic\Weather	4
Topic\Misunderstandings	0
Topic\Greeting	0
Topic\Doctor/local authorities appointment	0
Topic\Health issues (asking about health)	2
Topic\Movies	11
Topic\Transportation	0
Topic\Location	4
Topic\Feelings	1
Topic\Sleeping	0
Topic\Friendship	0

Topic\Drawing	1
Topic\Condolence messages/ Funeral/ death	1
Topic\Getting together	5
Topic\Marriage	0
Topic\Kids (related)	8
Topic\Travelling	0
Topic\Lost and found	0
Topic\Graduation	3
Topic\Houses	0
Topic\Extracurricular activities	0
Topic\Women rights	0
Topic\Playing a game	0
Topic\Joke	0
Topic\Work/jobs	0
Topic\Social media	1
Topic\Photography/ photos	0
Topic\Cooking/Food	18
Topic\Make up/beauty	10
Topic\Shopping	0
Topic\Academic topics	0
Topic\School matters	14
Topic\Technology	2
TOTAL	138

5.5.2 Codes in Snapchat

Of the 109 snaps that were coded, the general tendency was for participants to use either Arabic or English, not Arabish unlike WhatsApp; 45 of the snaps were coded for using Arabic and 41 of them were coded for using English. The data also shows that in the 5 snaps that were coded for using Arabicized English, 3 of the coded segments co-occur with segments that were coded Arabic (Table 5.21); this indicates that the participants shift between languages but did not change the writing script, i.e. Arabic letters. It suggests that participants were aware of the limited space they had in Snapchat and thus wanted their text to look and be read easily by avoiding the confusion that usually occurs when mixing Arabic and English writing systems. Even in the one snap that contained English and Arabic, the English text was typed in the text box, whereas the Arabic text is drawn using the drawing feature in Snapchat as

explained below under code-mixing. As explained before, the term 'code mixing' is used when referring to shifts between languages in Snapchat to emphasize the logic of meaning making which is based on simultaneous presentation of different codes and modes within a situated experience in the material space. This meaning making logic is different in WhatsApp which is based mainly on time and sequence of turns. In the following section, focus is given to code mixing in Snapchat and the types of codemixing that appeared from the collected data. It is important to note that some snaps have no text.

Table 5.21 Codes found in Snapchat

Code choice	Arabish	English	Arabicized English	Arabic
Number of Snaps	1	48	5	51

As mentioned above, there was a general tendency in the Snapchat data not to code mix: out of the 109 snaps collected only 4 occurrences of code mixing are found. However, the participants displayed creativity by using affordances that contributed to minimizing confusion, maintaining speed and making the text reader friendly. There are three types of code mixing found in the Snapchat data; they are:

5.5.2.1 Code- mixing in Snapchat 1 (English +Arabic)

In the data, only one snap contains English and Arabic. In the snap below, the participant shows awareness of the affordances of Snapchat in which typed text, emoticons and sketch features were used.

Figure 5.18 Example of code mixing (type 1)

In this snap, the participant describes her current state in English with the words "Bad mood" and the sad face emoticon "☹". She then sketched the Arabic words that states that she is "tired and wants to graduate" followed by a drawn sad face emoticon. Because the two languages operate differently in relation to characters used and direction of writing, the participant's decision to incorporate the two languages using different affordances is an attempt to make the snap more reader-friendly.

5.5.2.2 Code- mixing Snapchat 2 (Arabic +Arabicized English with English as the matrix language)

This is the only case in the Snapchat data where Arabic and Arabicized English were used in an English syntax/matrix (*Figure 5.19*):

Figure 5.19 Example of code mixing (type 2)

In the above snap, the participants used the Arabic words "Khaltu Mervet corner" which translates "Auntie Mervet's corner" mixing Arabic words "Khaltu Mervet" with Arabicized English "corner" in an English matrix. Although the participant uses the English syntax, she did not use the English possessive form ('s) for the proper name; the participant did not use the possessive form maybe because it is unusual in Arabic to add the sound /s/ to names and would be difficult to represent in Arabic. In Arabic, there are no bound morphemes to be added to the proper noun to indicate a possessive form. However, the participant chose to use the English word order (Auntie Mervet corner) not the Arabic one (corner Auntie Mervet).

5.5.2.3 Code- mixing Snapchat 3 (Arabic+ Arabicized English +Arabic morphology to English words)

Two snaps fall under this category. The text in this case is written in Arabic with few words in Arabicized English, i.e. English with Arabic letters. The following is one of the two snaps that exemplify this type of code-mixing (*Figure 5.20*):
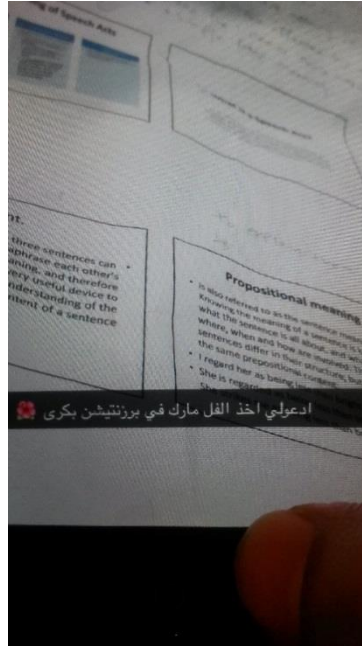
Figure 5.20 Example of code mixing (type 3)

Arabic:　ادعو لي اخذ الفل مارك في برزينتيشن بكرا

　[Ed'u li aakhed elfull mark fi presentation bukraa]

　Ar　　Ar morpho+Arabicized Eng　Ar Arabicized Eng　Ar

Translation:　pray I get the full mark in tomorrow's presentation

In this snap, the participant is asking her followers to wish her good luck in tomorrow's presentation: "pray I get the full mark in tomorrow's presentation". She expressed that in Arabic and included some words in English, "full mark" and "presentation", written in Arabic. With the English presentation Power Point slides on the background, the participant is drawing a particular image of herself at this moment as she chooses to transliterate the words "full mark" and "presentation"; the participant wanted to show that she is an English department student doing an English presentation. Because this snap is in the participant's *My Story*, her intention was for this message to reach her Arabic speaking family members as well as her English department fellow students who also speak Arabic.

5.5.3 The relationship between code and topic in Snapchat

This section presents the results from the code relation between topics and language choice in the Snapchat data. As mentioned earlier, the texts in the majority of snaps are in Arabic or English; there are only a few cases in which code mixing occurred.

Table 5.22 Code relation between topics and language in the Snapchat data

Topic	Arabic	English	Arabicized English	Arabish
Friend	3	3	0	0
Current state	13	14	1	0
Prayers	3	0	0	0
Condolences	1	0	0	0
Family	1	0	0	0
Pets	2	1	0	0
Party	1	4	0	0
Birthdays	0	2	0	0
Gifts	2	2	0	0
Weather	2	0	0	0
Health	1	1	0	0
Location	2	0	1	0
Movies	0	1	0	0
TV	3	1	1	0
Music	0	2	0	0
Drawing	0	1	0	0
Getting together	2	1	0	0
Dining out	1	1	0	0
Children	6	1	0	0
Graduation	3	1	0	0
Food	8	9	0	1
Beauty	4	6	0	0
Social media	1	0	1	0
School matters	4	9	2	0
Technology	0	2	0	0

The table shows that there are topics that were conducted using English and Arabic, but there were some topics that favored one over the other. For example, Arabic, not English, was used in the topics about *prayers and condolences*. On the other hand, English was used more than Arabic in some topics such as *school matters, technology, beauty, music* and *party*. In general, it can be inferred from this comparison that the wider the community circle these topics address, the more Arabic was used and the smaller the community circle, including young girls of the same generation, the more English was used. Even in the snaps where participants code mix, the topics were about *graduation* and *school logistics* which most probably were aimed at their

classmates. This relation between topic and language in different snaps shows that not only is language important: other modes such as images play an important role too. The following section discusses modes in Snapchat.

5.5.4 Modes in Snapchat

In addition to different codes used in the Snapchat data, participants used various modal affordances in their snaps; these included text, emoticons, images, filters and sketches. The coding of 109 snaps using a grounded theory approach shows that there are 11 patterns of use from the various multimodal affordances allowed by Snapchat. Table 5.23 below lists these patterns and the number of occurrences of each.

Table 5.23 Modes in Snapchat data and number of occurrences

Mode/Resources	No. Snaps
1. Filter+ text+ emoji	1
2. Image +sketch	1
3. Text + sketch	1
4. Text	2
5. Image+ text+ emoji+ sketch	5
6. Image+ text +sketch	1
7. Text+ sketch+ emoticon	1
8. Text + emoticon	8
9. Image + emoticon	10
10. Image + text	14
11. Image + text+ emoji	65
Total	109

The table shows that a snap containing an image, text and an emoji is the most popular type of snaps. The following sections explain all types found in the data.

5.5.4.1 Image + text+ emoji

This is the most common category in the participants' snaps. There are 65 snaps under this category. The snaps contain images, text and emoticons. Images in these snaps are explained by the text and also framed, i.e. perception of meaning and what the participant is actually doing with the snap. The following snap is an example of snaps in this category:

Figure 5.21 A Snapchat post with an image, text and emoticon

5.5.4.2 Image + text

There are 14 snaps under this category that include an image and a text with no emoticons or sketch. The text in these snaps provides explanation relevant to the image taken. Snaps under this category are similar to the one in *Figure 5.21* A Snapchat post with an image, text and emoticon above but without the emoticon.

5.5.4.3 Image + emoticon

This category includes snaps with images and emoticons only with no text. There are 10 snaps under this category. All snaps have a clear image and frame their feeling about that situation with the help of emojis and emoticons; for example, in the following snap, the participant took a photo of the graduation sign and university logo and added two emoticons, a loving smile and a graduation hat:

Figure 5.22 A Snapchat post with an image and emoticons

5.5.4.4 Text + emoticon

This category includes 8 snaps with no images. The snaps contain texts and emoticons. Seven out of 8 snaps have a black background and one has a white one. In cases where there is no image, speech act and mood have an essential part as explained before. In the one snap that has a white background the participant was wishing someone a happy birthday.

5.5.4.5 Filter+ text+ emoji

There is only one snap that uses a Snapchat filter, text, emojis and an emoticon (*Figure 5.23*). The participant here chose to display no image in this snap, possibly because of the time and place when the snap was taken: in the middle of the night when it is dark and from her bedroom.
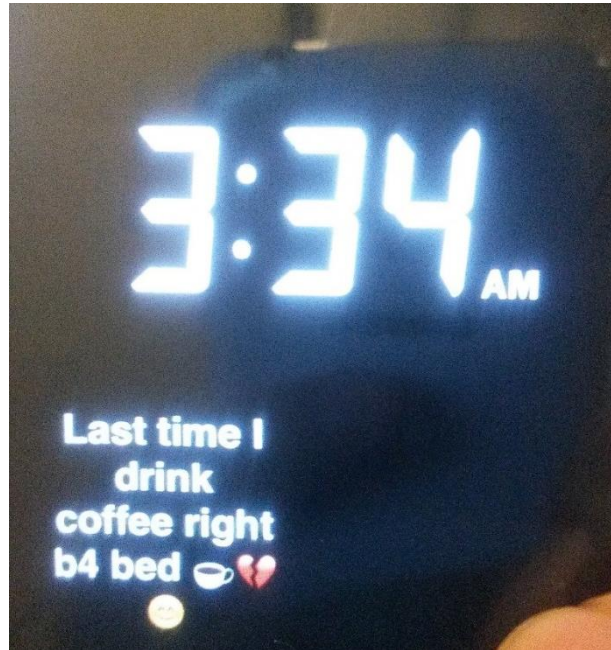
Figure 5.23 A Snapchat post with a filter, text and emoticons

In the above snap, the participant is showing that she could not sleep because she had coffee. Several layers of meta-discourse are employed here:

- Using the feature of time display as part of the affordances provided by Snapchat;
- Typing a text to communicate the cause of the problem i.e. "*drink coffee right b4 bed*";
- Evoking the presupposition that coffee keeps us awake;
- Translation of the entire situation by using the emoji of a coffee and a broken heart: and at the end
- Commenting on the entire situation using a smiley.

All these modes interact to communicate the participant's intended meaning/s.

5.5.4.6 Image + sketch

Under this category, images and a sketch feature provided by Snapchat are used. There is only one snap under this category (*Figure 5.24*).

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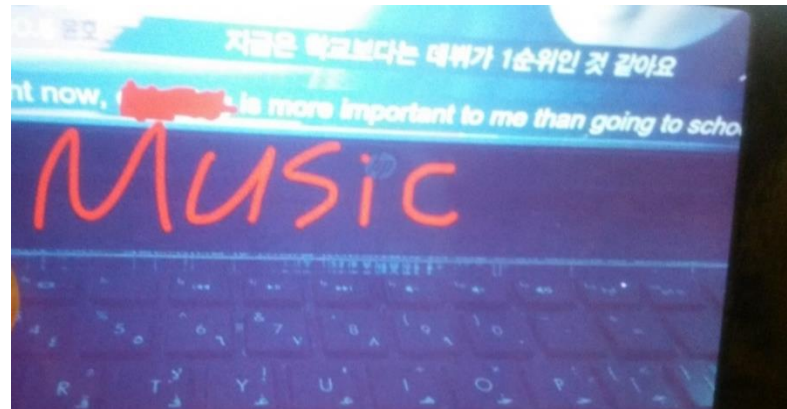
Figure 5.24 A Snapchat post with an image and sketch

In the above image, the participant cleverly manipulated the affordances at hand to communicate a new idea. The participant scribbled over a word that is displayed in the subtitles of the show she was watching and hand-wrote the word "*music*" to save the time and effort of rewriting the whole sentence. The participant by doing this is shifting ownership as will be explained in the following chapters.

5.5.4.7 Other

Other categories include snaps with text and sketch. This category includes snaps that use typed text and sketch features of Snapchat without displaying an image or using emojis. There is only one snap under this category:
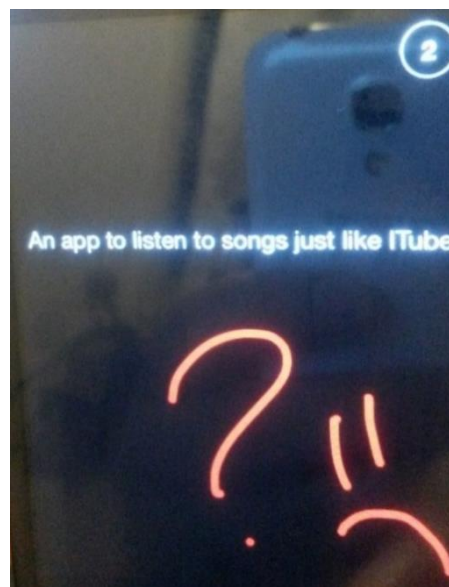
Figure 5.25 A Snapchat post with text and sketch

In the above snap, what seems to contribute to the choice of modes is the purpose of the communication: what the participant is *doing* with this snap gives emphasis to text over image. The participant was requesting information on a particular application and, hence, the snap became more of a textual interactive medium. The participant, then, drew a big question mark to emphasize a request for an answer from her Snapchat friends. There also might be a technical reason behind drawing the question mark; Snapchat has constraints on the number of characters (in this 2015 version) which may indicate that the participant cannot include the question mark in the typed bar because she has run out of space. The sad smiley drawn was also significant in many ways. It acted as a contextualization cue which reflected the participant's current mood.

Another category includes snaps which contain only text with no emoticons, emojis, or drawings. There are two snaps under this category. Both snaps have a black background and include a request. Similar to the snaps that have no image but include a text and a drawing, what participants are doing with the communication seems to be more important than an image. The participants were not sharing a moment but rather requesting a reply from their Snapchat friends. What these snaps also have in common are the black background and feelings that reflect sadness or depression. The black background was used to highlight the text as central and to reflect a despondent mood.

There are also five snaps that include images, texts, emojis and sketches. The sketch feature has two functions: in 4 snaps it was used to point at a specific part in the images, and in one snap, a sketch was used for technical reasons. The data also shows that there is only one snap that contains an image, a typed text and a sketch. The sketch in this snap was text drawn for technical reasons; this reflects Snapchat constraints over text limit. What is special about the sketch is that it is, according to Peirce, an icon and a symbol: it means *You Tube* but also drawn in a way to resemble the *You Tube* icon (*Figure 5.26*).
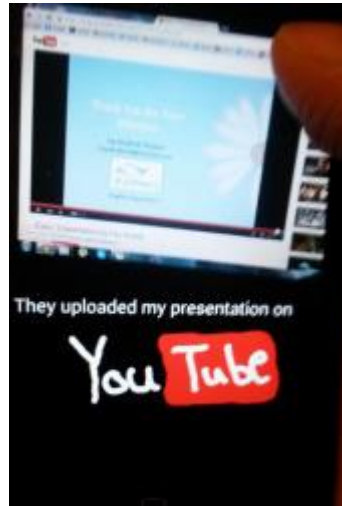
Figure 5.26 Iconic and symbolic use of the sketch feature in Snapchat

The final category which includes only one snap includes snaps with a text, a hand-written text and an emoticon with no image:

Figure 5.27 Use of image, typed and hand-written and emoticons in Snapchat

In this snap, the use of hand-written text adds a new function for the use of the sketch feature. Besides technical and locational motivations, linguistic motivations arise from this snap. The participant used two different modes to code switch from English to Arabic. Because English and Arabic operate on different directions, it would be difficult to write them both in one line in Snapchat. Therefore, the participant code switched in

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this snap – which is unusual in this data, as discussed in the code-switching section - yet represented a reader-friendly snap.

Although there was no request in this snap, the participant may have used the black background to reflect on her dark thoughts. She was in a "bad mood" because her friends were graduating that year unlike her – this information was obtained from other snaps by other participants and in WhatsApp as well.

5.5.5 Concluding remarks on Snapchat

The coding of snaps demonstrates that participants used Snapchat in a multimodal and multilingual way. Unlike WhatsApp in which participants mode-switch, modes were mixed in a snap. However, when participants use codes, they used Arabic and English in similar amounts and there was little code switching or mixing. Similar to WhatsApp, topics had some effect on the choice of language.

5.6 Final conclusions

This study employed different data collection tools providing different kinds of input to investigate the participants' digital practices. Questionnaires provide data on what the participants think they do whereas electronic literacy logs tracked the activity of the participants for a period of time and provide reported data. These two data sets provide a general impression about the participants' online activities but are not sufficient to make conclusions based on real online interaction. A collection of samples from WhatsApp and Snapchat provide actual data on what their interaction looks like. Coding the data using grounded theory allowed for representative codes to emerge from the data.

Because the descriptive results come from four different data sets, it is important to compare and contrast all findings. There are some instances where the tools converge to emphasize existing practices and others in which they diverge. All four data sets confirm the multilingual and multimodal aspects of the participants' interaction. Participants used a variety of languages: Arabic, English, Arabish and Arabicized English. Arabic was used in most interactions. Participants used social media to interact with family and friends but not with teachers. WhatsApp and Snapchat were the most commonly used apps for daily interaction. Conclusions from all tools show that participants interacted for a number of reasons: mostly to organize their academic life, to keep in touch socially and for entertainment. What the reported tools fail to convey is

an authentic representation of how language use, including code and mode, varies according to different topics, recipients and platforms. The coding of the WhatsApp and Snapchat data revealed differences in language use which may be linked to affordances of technology: participants' *mode-switch* in WhatsApp but *mode-mix* in Snapchat and abbreviations and code mixing are found more in WhatsApp.

What this chapter particularly reveals is a link between language use, topics and type of recipient. What it could *not* demonstrate is *why* a particular mode or code is used in that particular topic with that particular person on that particular platform. It also fails to show how affordances and constraints were taken up and appropriated within actual interactions. This requires a closer investigation of interactions in order to examine how participants overcome technological constraints in particular situations.

In the following chapters, selected examples from WhatsApp and Snapchat are analyzed in detail following a mediated discourse analysis approach. These examples are chosen to demonstrate the results from this chapter and at the same time show that a descriptive analysis alone is not enough to explain language use. The analysis of these examples will help to explain what the participants are doing, who they are '*being*' and how they are relating are highlighted in relation to their effect on language use. Focus is given to the social actions performed and how the affordances or constraints of these platforms are manipulated, and how the participants as social actors contribute to the accomplishment of actions.

Chapter 6
Analysis of WhatsApp Examples

6.1 Introduction

In the previous chapter, some basic facts about the participants' digital practices are established by means of descriptive data. This chapter builds on the previous descriptive chapter, seeking to uncover aspects of these practices that the descriptive chapter failed to reveal. It uses a mediated discourse analysis framework, which focuses on these interactions as taking place at a *nexus of practice* (Scollon, 2001). Within this nexus of practice, the actions performed, the affordances and constraints of these platforms, and the participants as social actors are examined.

As seen in the previous chapter, results from the questionnaire and the literacy logs indicate that WhatsApp is the platform participants use most frequently on a daily basis for communicating with friends and family members. The analysis of their actual interactions indicates their communication using this application tends to be highly *translingual*, i.e. multilingual and multimodal (García & Leiva, 2014; Wei & Zhu, 2013). The data of WhatsApp interactions contain a wide variety of codes including English, Arabic, Arabish and Arabicized English. In addition, participants make use of the affordance of WhatsApp to send not just written texts, but also texts enhanced with graphic images (such as emoticons), photos, hyperlinks, voice messages, and short videos. The data also shows, however, that participants' choice of code and mode is not random, and that the types of language used vary according to who participants are interacting with and what they are talking about. For example, participants use Arabic more than any other code, and most uses of Arabic occur with family members. Other codes, such as English and Arabish, occur in interactions with friends. The results also show that some codes tend to occur in interactions about particular topics. For example, English is often used for academic topics whereas Arabic is used when expressing condolences and talking about work and jobs. In addition to the use of various codes, different modes are used by participants in different contexts. The use of mode also varies according to different types of recipients within different interaction orders (Goffman, 1983). For example, audio messages are sent in one-to one interactions more

than in group chats. The results also reveal that certain modes tend to occur in chats about certain topics: for example, when discussing academic topics, the audio mode is used more than videos or images. It is important to reiterate that the actual audio messages, videos and images within the WhatsApp interaction were not collected for ethical and technical reasons, as explained in the methodology chapter. Although this is acknowledged as a limitation in the data, the data collected is, nonetheless, considered rich in terms of indicating where the multimodal turns occurred and the type of modes used. One attempt to compensate for this limitation in the analysis is by examining the surrounding text in order to make sense of what the missing media was used for.

These results obtained from the coding of WhatsApp chats provide a general picture of the patterns of use of different codes and modes in this application. What it cannot tell us is what motivates these choices within particular interactions and how the action they are performing, the medium they are using, and the participants themselves come together to affect these choices. This overview, while revealing general tendencies, may mask the fact that participants' choices of codes and modes are not uniformly consistent with the factors of interlocutor and topic. Within interactions with particular interlocutors and about particular topics, there is often considerable variation in code and mode choice. In other words, while the analysis of the previous chapter establishes that participants' choice of codes and modes in their digitally mediated interaction is not random, it does not reveal the complexity of linguistic choices in specific interactions nor does it make the link between micro, i.e. linguistic, and macro, i.e. social, levels of analysis. Focusing on discourse alone does not allow for broad understanding of the social aspects of language use and the larger discourse systems (Scollon et al., 2012) within which it occurs. It is important to widen the circumference to take into account trajectories of discourse and action that circulate through the sites of engagement constituted by these interactions, trajectories, for example, related to personal histories or cultural norms that might influence what kind of code and mode were chosen in the production of particular social actions (Scollon, 2002).

6.2 Example 1: *Inshallah*

Consider the following interaction between Deema and Sarah, two classmates majoring in English:

1. 3/11/15, 12:04:47 AM: Deema: Cuz I didn study
2. 3/11/15, 12:04:52 AM: Deema: I kinda deserve that
3. 3/11/15, 12:05:05 AM: Sarah: You will do great in the mid im positive cuz u will study
4. 3/11/15, 12:05:11 AM: Sarah: Inshalllah   [Translation: *God willing*]
5. 3/11/15, 12:05:18 AM: Deema: Inshallah   [Translation: *God willing*]

Example 1: Arabish "Inshallah"

The conversation conforms to the patterns revealed in the quantitative analysis, in that participants are using English when talking about academic matters. At the same time, within this topic frame, they also switch to Arabish (Arabic expressed in Romanized characters) in order to engage in a typical conversational ritual among Saudi speakers, the interjection of the phrase *Inshallah* (God willing) in the context of discussions of future events with uncertain outcomes. And so, what has motivated this shift in code choice is not a shift in topic, or interlocutor, but the orientation of the topic towards future events, and the orientation of the speakers towards their shared cultural heritage. Deema's choice of Arabish in line 5 is motivated not just by the topic or culture, but also by conversational mechanics of this particular interaction ritual which demands that the expression *Inshallah* be answered with the same. At the same time, however, this Arabic expression is *not* expressed in Arabic (as it is in other conversations in the data). One explanation of this might be that participants are already conversing in English, and using Arabish involves the least effort in the context of this application (switching to Arabic would have involved changing keyboards within the interface of the app). Another explanation might be that Arabish allows the participants to maintain the same kinds of identities the use of English allows them to claim while still being able to participate in a traditional kind of exchange. In addition, Deema's use of the word *Inshallah* with this specific spelling can be seen as an accommodation strategy. Although there are different ways of spelling *Inshallah,* including "enshallah" and "inshalah", Deema chooses to reply using the same spelling to align with her friend.

What this brief analysis of this seemingly simple exchange shows is that what motivates participants' code choice is far from simple. It is, without a doubt, a matter of

the identities of the participants (friends) and the topics they are talking about (exam grades). But it also depends on cultural norms of communication, the identities and relationships that they wish to claim at particular points in the conversation, the affordances and constraints of the application, and the ongoing conversational contexts that they create. In other words, understanding code choice in this example requires that attention is paid not just to relationships and topics, but to how people manage interaction on a moment by moment basis, how these interactions take place within broader cultural contexts, and how participants use these interactions to engage in recognizable social practices and enact recognizable social identities.

The analysis above illustrates that in order to understand the above interaction, it is important to consider the intersection of several elements: social actors, interaction orders, and cultural tools. Social actors, in an interaction, reflect their own social and individual identities, their histories of using particular tools, and their abilities to form and maintain different kinds of relationships. Interaction orders (social relationships) enable and constrain social actors' ability to claim certain kinds of identities and to appropriate certain kinds of tools. And cultural tools, with their different affordances and constraints based both on their technological characteristics and the histories of their use, enable and constrain the kinds of actions social actors can perform, and thus the kinds of identities they can claim and the kinds of relationships they can form and maintain. The diagram below illustrates the interaction among these three factors.

Figure 6.1 The interaction model

In what follows, I will analyze several illustrative examples of WhatsApp interactions through this model with the aim of understanding why different codes and

modes are used and how participants mix together these codes and modes for strategic purposes.

6.3 Example 2: *Watching a vlog*

In the following example, two participants, Raggy and Norah, who are relatives and study in the same English department, are watching a vlog (video blog) on YouTube. The video is about two friends, Mike and his friend, who usually vlog about their daily life. In this video, Mike's friend is talking to Mike about how her shadow looks like and Mike is not showing any interest in the topic. Norah sends Raggy a link to that video after which several exchanges of comments through various codes and modes take place as seen in the following (translation is provided between brackets):

1. 3/27/15, 10:35:06 PM: Norah: http://youtu.be/zA0a5-4m0zc
2. 3/27/15, 10:35:53 PM: Norah: Mike is سلكing to her when she asked him to look at her shadow [سلكing: humoring]
3. 3/27/15, 10:42:39 PM: Norah: <audio omitted>
4. 3/27/15, 10:42:41 PM: Raggy: I am very honored to be here with all of you to congratulate Mike Tompkins on the best forehead breaking tasleek of this year 👏👏👏👏👏👏👏🎉🎉🎉🎉
5. 3/27/15, 10:43:10 PM: Raggy: This is my speech
6. 3/27/15, 10:43:22 PM: Norah: 😂😂😂😂😂😊
7. 3/27/15, 10:43:31 PM: Norah: <audio omitted>
8. 3/27/15, 10:43:53 PM: Norah: Thats how i read it
9. 3/27/15, 10:44:06 PM: Raggy: That i how i said it
10. 3/27/15, 10:44:13 PM: Norah: 😊
11. 3/27/15, 10:44:27 PM: Norah: He سلكed at the end as well [سلكed: humored]
12. 3/27/15, 10:44:35 PM: Norah: But it doesnt beat this one
13. 3/27/15, 10:44:43 PM: Raggy: What happened
14. 3/27/15, 10:44:48 PM: Norah: Wait
15. 3/27/15, 10:46:17 PM: Norah: At 5:30
16. 3/27/15, 10:46:19 PM: Norah: 😂😂😂😂
17. 3/27/15, 10:46:26 PM: Norah: Omg mike slow down
18. 3/27/15, 10:47:22 PM: Norah: هههههههههههههههههههههههههههههههههه [hahahahahah]
19. 3/27/15, 10:47:26 PM: Norah: I love him :(
20. 3/27/15, 10:47:51 PM: Raggy: Omg he is amazinggggg
21. 3/27/15, 10:48:02 PM: Raggy: I love it when he does that to herrrr
22. 3/27/15, 10:48:09 PM: Raggy: 👏👏👏😊

Example 2: Watching a vlog

What is going on here? These two young women, given the names Raggy and Norah, are physically in two different places trying to watch a clip on YouTube

together. They accomplish this action through several exchanges of utterances. It is clear that the translingual potential of WhatsApp is on display here. Among the tools used in this chat are Arabic, English and Arabish text in addition to two audio messages, emoticons and a hyperlink. Although the descriptive chapter indicates that English is used in chats with friends, it does not account for translanguaging, nor does it explain how different codes and modes are used to do identity and interpersonal work. As proposed by the model explained above, translanguaging is seen occurring within a nexus of practice and best understood by focusing on the ongoing construction of context, relationships and identity by social actors at this nexus.

It is clear from the WhatsApp chat examples given so far that the organization of interaction in WhatsApp is sequential. Tools and actions operate under the logic of time unlike Snapchat, which enables a simultaneous collage of visual and textual materials. In this example, it is not possible to watch the video and read the textual exchanges at the same time; the participant needs to follow the link to YouTube, and then go back to the WhatsApp application to text a response. As demonstrated in *Figure 6.2*, the participants stop their exchange of texts to record an audio or go back to watching the clip again and only after accomplishing the action of recording an audio and watching a clip, are they able to text and comment again.
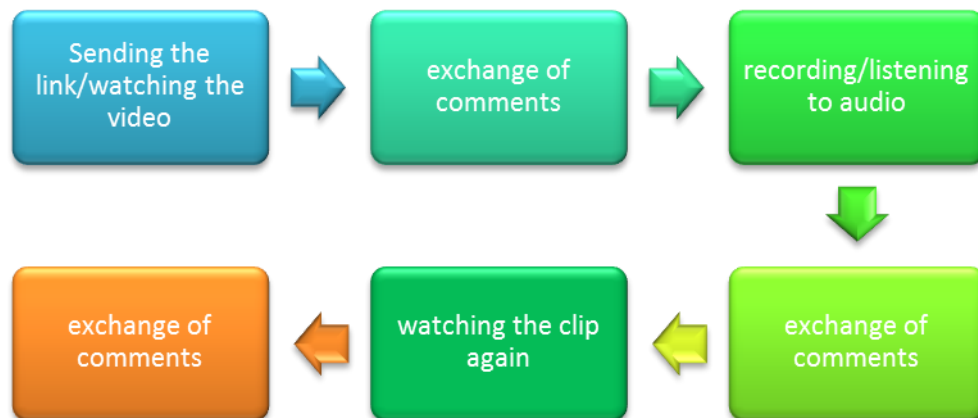
Figure 6.2 Sequential unfolding of events in Example 2

This sequential organization does not only affect the actions but also affects language choices. For example, the adjacency pair in line 8 and 9 demonstrates that they syntactically and lexically match only because Raggy's response, "That i how i said it", comes after reading Norah's input "Thats how i read it". However, sequentiality does always result in linguistic homogeneity. There are other instances

where a heteroglossic contrast might take place in consecutive lines as in lines 17 and 18 in which Norah comments in English and followed by a text in Arabic. One possible explanation for this code switching can be related to the time between the previous English text and the consecutive Arabic output; the shift to Arabic occurred a minute later after giving an English response whereas Norah usually replies within ten seconds in this interaction. This longer gap between responses might indicate that Norah was texting someone else in Arabic and continued using the Arabic keyboard when she returned to her chat with Raggy. Other examples of heteroglossic contrasts may occur in the same turn as in line 11, "He سلكed at the end as well". In this line, Norah uses a translingual form, combining an Arabic word written in Arabic script with an English bound inflectional morpheme written in English script. This mixing of linguistic tools reflects the tension between different affordances and meaning and illustrates how participants are creative in finding ways to solve dilemmas around this tension. When Norah uses the words "سلكing" and "سلكed", for example, the tension between English and Arabic as two different cultural tools becomes clear. Raggy and Norah are commenting on Mike's reactions to his friend in a vlog. The reactions are characterized by indifference in which Mike tries to pretend to be caring about what his friend is saying and is just humoring her. This description still fails to reflect what the Arabic word "tasleek" (pretending to care/humoring) indicates to Norah and Raggy as it is a common word used by Saudi youths to describe such a situation in a more precise way, at least to them. To solve this tension, the participants' draw on their plurilingual repertoire, using an Arabic word within an English matrix as seen in lines 2, 4 and 11. This translingual process involves appropriation (Jones, 2016; Jones & Hafner, 2012) and creativity (Wei, 2011) because Norah makes up a word that is neither Arabic nor English and turns it to her own original creation. Her creativity is seen not only in bringing two languages into one word but also in appropriation of morphology; both participants code switch while maintaining English as the matrix language. Norah uses the word "سلكing" by using the stem from "tasleek" and attaching "ing" to it to achieve a present continuous tense required by the structure/grammar of the sentence. The creativity of Norah can be seen not only in attaching an "ing" to an Arabic word, but also in extracting a verb that is not usually used in that form from the widely used noun. Creativity in Norah's appropriation is also seen in choice of script. Norah chooses to mix Arabic and English script in her word "سلكing" to show where each part originates

from. This creative presentation of the appropriated code makes it easier to read the new word and understand the meaning behind such choice. However, the participants' language use in this example is not only motivated by constraints of semiotic tools or motivated by the action but also by their previous experiences.

In order to understand these translingual practices, these instances of sequential use of code and mode cannot be decontextualized from their social, interpersonal and cultural contexts as proposed in the model above. During WhatsApp interactions such as this one, participants are enacting individual and cultural identities. Norah in this example, is representing a historical body which belongs to the Arabic, Saudi, English and digital worlds. These worlds are realized through the discourses that this interaction is linked to: there are links to social media, vlogging, YouTube and "Mike Tompkins". There is also the discourse of Oscars' stage speeches used in Raggy's line "I am very honored to be here with all of you to congratulate Mike Tompkins on the best forehead breaking tasleek of this year"; there is the discourse of young Saudis' informal everyday conversation; and there is the discourse of the Internet generation which circulates as participants use acronyms, such as "Omg" in line 20 and the Arabic laughter "ﻫﻬﻬﻬﻬﻬﻬﻬﻬﻬﻬﻬﻬﻬﻬﻬﻬﻬﻬﻬﻬﻬﻬﻬﻬﻬﻬﻫ" in line 18. In addition to enacting cultural identities, participants are also reflecting their individual historical bodies, such as Norah's mastery of syntax in both languages, English and Arabic, demonstrated by her creative use of "سلكing" and "سلكed". On the other hand, Raggy uses English script to write an Arabic word (Arabish) and manages to show the same level of mastery Norah displays. Her use of the noun "tasleek" fits into the sentence syntactically and requires no modification of the term. Therefore, her choice of Arabish as a tool seems to fit in with larger semiotic tool, i.e. English as well as the principle of least effort. The use and appropriation of this Arabic word does not only serve the accomplishment of the action and the projection of identity; when Norah first designs this translingual form, she is implying that this is a form that Raggy understands and accepts.

When participants try to resolve tension between affordances and meaning, they are also managing a relationship at the same time. Participants, in their interaction with others, try to define social actions in ways that are conceivable to others. When participants translanguage, they are showing awareness of the other interlocutor's semiotic repertoire arising from their previous offline and online relationship. For example, when Norah uses the word "سلكing", she is communicating her awareness of

Raggy's familiarity with these two languages and ability to understand this new translingual form. Raggy in return understands this word, accepts it and uses it in line 4. This mutual understanding indexes a pre-existing relationship indicated by talking about a past event involving other videos of Mike and this one as "the best forehead breaking tasleek of this year" and presupposition indicated by the use of pronouns referring to other people such as "her" and "she" in line 2. These linguistic and stylistic choices reflect the type of relationship they have indicated by their non-standardized, humorous, dramatic, and creative use of language. Other ways of reflecting an interpersonal relationship is by use of emoticons and repetition of each other's words as a positive *face* strategy. Norah in line 6 uses a series of laughing faces in response to Raggy's dramatic mockery of Mike's video. To show alignment to her friend, and Raggy responds to Norah's input by repeating almost the exact sentence as seen in lines 8 and 9, "Thats how i read it" and "Thats how i said it", using the same nonstandard lowercase "i". She also uses the words "Omg" and "love" in lines 20 and 21 that Norah used previously.

This example illustrates how the elements in the interaction model explained above intersect to accomplish the social action:

Action : Commenting on Mike's attitude.

Interaction order: There is neither hierarchical power difference nor distance between the two friends. Norah is using "سلكing" because Raggy, her friend, speaks both languages. Norah is using "سلكing" because she cares about Raggy's understanding of the new word.

Tools: Norah is using "سلكing" due to lack of an available English equivalent.

Historical body: Norah is using "سلكing" because she is a Saudi, English department student and an online social media user.

Another interesting example of language use reflecting a similar nexus of elements can be seen in line 15. Norah is replying to a previous question by saying "At 5:30". At first it might seem that Norah is telling the time. However, "At 5:30" in this case is not used to indicate time because it is used as a deictic feature to index that specific moment in the video which answers Raggy's question "What happened". The fact that Raggy understands what Norah means by "At 5:30" reflects their historical bodies which perceive this input as a cultural tool conveying meaning other than time and at the same time reflect their interpersonal relationship that incurs predispositions about

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what is understood and accepted between them; by this special use of language, Norah is asking Raggy to refer to what happened in the clip at this moment (5:30) as usually displayed at the bottom of the YouTube video clips. This appropriation of semiotic tools contributes to the accomplishment of action, i.e. watching a specific part of the clip, and also saves a lot of time and effort that would be spent if Norah chose to respond to Raggy's question by typing in what exactly happened. This example illustrates that the participants not only appropriate tools to accomplish actions but also to accomplish them efficiently.

This example reveals that choices of code are not only powerful tools to accomplish actions but are also ways in which people negotiate their individual and cultural identities. The following example illustrates that modes in addition to codes are tools the participants utilize in WhatsApp to achieve their interactional goals.

6.4 Example 3: *Buying shoes*

In the following example, Mona, an English department student, wants to buy a new pair of shoes but decides to ask her friend, Amal, a female classmate and a friend, for her opinion about some shoes to help her decide which pair to buy. In this example, Mona and Amal use a range of codes and modes to accomplish their social goals: the two friends are translanguaging using different codes such as Arabic and English, and different modes such as text, image and audio throughout this interaction for different reasons. An interaction like this raises questions such as: why do participants translanguage? Is mode of text alone insufficient for accomplishing the actions that they wish to accomplish? What other purposes might the shifting of code and mode accomplish?

1. 4/25/15, 10:16:43 AM: Mona: حلوه [Nice]
2. 4/25/15, 10:16:56 AM: Mona: <image omitted>
3. 4/25/15, 10:17:03 AM: Mona: ؟؟؟   [???]
4. 4/25/15, 10:23:00 AM: Mona: وهذي [and this one]
5. 4/25/15, 10:23:09 AM: Mona: <image omitted>
6. 4/25/15, 10:27:02 AM: Amal: كلهن حلوات 😂😂😂😂❤️☐ [all are nice]
7. 4/25/15, 10:27:28 AM: Amal: <audio omitted>
8. 4/25/15, 10:28:13 AM: Mona: Fanx
9. 4/25/15, 10:28:20 AM: Amal: Velcom

Example 3: Buying shoes

This interaction is a good example of how actions affect tools and tools affect actions. Tools affect actions because they vary in their functions and histories of use; for example, emojis have a history of use which indicates how and when different emojis are used to create different frames. In the collected WhatsApp data, the participants utilized several cultural tools including semiotic and technological ones, which enabled them to accomplish various actions. In the previous chapter, I noted that participants used a wide range of codes and modes, and that different codes and modes were associated with different circumstances. In many circumstances, however, participants combined a range of different codes and modes in what Kress and Van Leeuwen (2001) call "communicational ensembles". These ensembles are constructed in different ways based on the affordances and constraints of the technologies people have available to them. The ensembles of modes in this interaction, for example, are organized sequentially. The sequence of these modes including texts, images, and audio messages is determined partly by the affordances of WhatsApp (app) and partly by the actions participants are trying to achieve. These actions include soliciting an opinion and sending an image, actions which could not be lumped together in one turn due to constraints on how images could be sent with text in that WhatsApp version. Therefore, Mona sends the request first, then an image followed by question functions to provoke a reply. Mona then sends another image and asks Amal for her opinion. Amal then gives her opinion using two different modes, a text and an audio message.

Mona's request for an opinion, which involves shifting between modes, also shows how actions affect tools. Mona starts the interaction with the word "nice" and follows that with an image of shoes. She shifts from text to image because a text would fail to give real dimensions, exact color and overall impression of what the shoes really look like. The affordances of images in comparison to text is explained by Lemke (1999) and Jones and Hafner (2012) and in relation to differences between "topological" and "typological" meanings:

> Meaning in images are more 'topological', that is, images are capable of representing continuous phenomena, like the changing slope of a hill, or the various shades of colour in an object. In contrast, meanings in text are more 'typological'. Language describes things in terms of categorical choices: for example, we say the hill is 'steep', or the colour is 'blue'. (Jones & Hafner, 2012, p. 53)

These different affordances are utilized by the participant, Mona, because they accomplish different goals. The mode of image is used to represent "continuous phenomena" such as color and shape of the shoes whereas the mode of text, "nice", is used to categorize the shoes as "nice" or not nice. This example not only illustrates the different affordances of images and texts but also of text and speech. Mona follows the image with question marks because she realizes the constraints on text over intonation, as opposed to speech, and that using the word "nice" alone might be read as a statement not a question; therefore, she uses question marks in the third turn to indicate that "nice" is a question. What is interesting here is that the app provides the affordance of separating the intonation signaled by the use of the question mark, "?", from the word, that is, allowing the intonation and the word to be delivered into different turns separated by another turn, the image, which creates a certain ambiguity around the word 'nice'. It is almost like she is saying "I think these are nice, do you?".

Amal, then, participates in accomplishing this social action by replying to Mona's request and providing an opinion. Because the action requires giving an opinion (a face threatening act), it also requires managing the interpersonal relationship. Amal's reply includes the use of text, emojis and an audio. The text "all are nice 😭😭😭😭❤️□" not only provides a reply but also serves to avoid threatening Mona's face by offering an opinion that might be different from hers. The way Amal frames her reply with a heart next to crying faces creates a sense of that she is conscious of the unsatisfactoriness of her reply, which actually prepares for the next turn. Amal then mode switches to audio. Although the data does not include the actual speech, examining the surrounding text can provide several hints as to why she chose to switch modes. It can be surmised that the participant might want to offer a more detailed reply since "all are nice" is not a helpful opinion. In other words, it is likely that the mode switch was motivated by the principle of least effort: giving a detailed opinion about two different pairs of shoes in writing requires a lot of work. Therefore, other information and details are given using the voice function as a better choice. Another explanation for the mode shift to audio is that she might be walking while texting and switching might be more convenient. A third explanation sees this shift as a face strategy in which the speech recorded is face threatening, so needs to be said to sound less threatening. Offering a contrary opinion to Mona would likely require some mitigation that would more efficiently be accomplished through the mode of voice. The

interaction order, therefore, can also contribute to the mode choice here as well as the code choices at the end of this interaction.

The conversational ritual exchange of thanks and welcome, ("Fanx" and "Velcom") towards the end of this interaction appears as the normal way to end a conversation. In fact, what these participants are engaging in is more complicated than a simple adjacency pair. This final exchange bridges the gap between speech and text due to the interaction of several aspects in the model. The adjacency pair that ends this interaction (line 8 and 9) includes a common conversational closure including a "thanks" and its sequential reply, a "welcome", which is used not only to respond to the action of thanking but also reflects participants' linguistic repertoires, interpersonal relationships and historical bodies. The action of thanking occurs in a practice which indicates wrapping up an action and is creating an open slot for a sequential expected response. Mona chooses to say "Fanx" instead of "thanks" for interpersonal reasons. By using a non-standard form, she is indicating an informal relationship which allows her freedom of expression and to be humorous. It might also be a way of managing the switch from voice back to text by emphasizing the voice like quality of writing through the representation of nonstandard pronunciation. At the same time, Mona is indicating by the use of "Fanx" that this is a word that her friend would understand and accept. Amal, in response to "Fanx", says "Velcom" to fill in a conversational gap, give face and identify belonging to similar social worlds. The participants' habitus is brought into this interaction by these phonological choices that are motivated by previous encounters of real-world circumstances involving accented English. This final exchange can be explained in terms of *stylization* in interaction rituals. (Rampton, 2014b) explains stylization of thanks like the one in this example as follows:

> Indeed, Goffman's account of 'overlays' makes it clear that even within small-scale practices designed to move the participants past potentially vulnerable moments, there is scope for displaying unorthodox alignment, (re)keying the conventionally expectable ritual actions (cf 1971, p.10 8a,202 ff.). Certainly, in the affirmation of common ground for the resumption of synchronized, affiliative action in orthodox interaction ritual, people often draw on forms that are more elevated (or more intimate) than normal, but these showcase moments for indexical display of social allegiance can also be used more divergently. They are prime site of for all sorts of improvisation, and it is very common to hear people putting on different kinds of 'funny voice' in thanks, greetings and farewells. (Pp.286-7)

This example illustrates that in order to understand why participants use different modes and codes, it is important to examine the action, the affordances and constraints of tools and the participants as individuals, as historical bodies and as social actors. The analysis of this example shows that the choice of code or mode is affected not only by the type of actions to be accomplished, as found in the descriptive chapter, but also by the ongoing management of relationships and identities within the context of those actions. Participants code and mode switch because there is always a tension between what actions people want to accomplish and what mediational means allow them to do. In this example, the accomplishment of Mona's action, i.e. getting opinions on shoes depends partly on the affordances and constraints of WhatsApp which create a tension between tools and communicative goals. The use of different mediational means is not only affected by the action and the tools but also by the history of the participants themselves. Participants enact certain identities when choosing certain mediational means. Texting in Arabic, for example, is an enactment of and identity associated with the Arabic culture. The unorthodox spelling of the word thanks as 'Fanx' indexes a different kind of identity. Identities, then, operate both on a cultural level (English student, Arabic speaker) and an individual level (friend, classmate). In addition to culture, language use is affected by the kind of relationships participants are constructing. Mode and code shifting can be used as a *face* strategy as seen in this example. However, this is not always the case: code or mode shifting can also be motivated mainly by change in topic/action, but not relationships, as illustrated in the following example.

6.5 Example 4: *Changing the topic*

The results from the previous descriptive chapter indicate that there is an empirical correlation between topic and language; Arabic is dominantly used in some topics whereas English is used in others. This chapter focuses on actions and practices within a mediated discourse analysis framework in order to analyze what the participants are doing rather than what they are talking about. In the following example, two friends, Afaf and Fay, are performing two actions: preparing for a presentation and reporting the death of someone. The participants, in conducting these two different actions, bring along with them various tools and identities. The following is an extract of the WhatsApp chat that takes place between Afaf and Fay:

1. 27 Mar 6:03 PM - Afaf: Omg fay 😂😂
2. 27 Mar 6:04 PM - Afaf: I thought u said (for my presentation) as yours
3. 27 Mar 6:04 PM - Afaf: 😄
4. 27 Mar 6:06 PM - Afaf: If i was talking about girls power , then i ll use that picture, but im talking abt equality 😊😄
5. 27 Mar 6:11 PM - Afaf: ايوه صح في   [oh, by the way Fay]
6. 27 Mar 6:12 PM - Afaf: تذكرين نجوى الغامدي ؟   [do you remember Najwa?]
7. 27 Mar 6:12 PM - Afaf: امها توفت الله يرحمها❤😔▢
[Her mom passed away, may God have mercy on her]
8. 27 Mar 6:14 PM - Fay: نجوى؟   [Najwa?]

Example 4: Changing the topic

In line with the findings from the coding stage, participants in this example use English when discussing school matters and use Arabic to discuss the death of their friend's mother. What the previous chapter does not reveal is that this shift in code can act as a contextualization cue (Gumperz, 1999), signaling a shift in topic, or more precisely *social action,* and at the same time a shift in the *discourse systems* that circulate through this interaction.

It is important to understand translanguaging as a matter of discourses circulating through a nexus of practice rather than merely focusing on the contrast between languages. In lines 1-4, the participants here are preparing for a school assignment (action) working on a presentation on "girls power" and "equality". They use English not only because the topic is about school matters but also because English is the language they use in conducting their English presentations. However, Afaf uses non-standard forms such as "Omg", "u" and "i" that are not endorsed in their English medium teaching at the university but rather commonly used in digital interaction. When the sequence of interaction is interrupted by a different interaction goal involving the announcement of someone's death, Afaf shifts to Arabic which acts as a contextualization cue announcing a new topic. The shift in the use of cultural tools in this example is also accompanied by management of relationships within a different discourse system.

The identification of social actions in interactions is the first step towards examining how these actions are engaging in particular discourse systems (Scollon et al., 2012). What characterizes a discourse system is 1) an *ideology* that defines them as a group, 2) *face systems* between them or between the group and other outsiders, 3)

preferred *forms of discourse*, and 4) *socialization* through these preferred discourse forms (Scollon et al., 2012). When Afaf and Fay are preparing their school presentation, they are identifying themselves as members of a particular group, i.e. English department students. These participants have a preferred form of discourse to conduct these actions and topics which is academic English and are interacting online and offline using this preferred form. A different discourse system circulates through this interaction as the social action changes from preparing for a presentation to talking about the death of their friend's mother. The participants in line 5-8 are departing from their membership of the English department to be members of a different social world. This particular action involves an engagement in a Saudi conversational ritual that uses special Arabic traditional phrases such as an Arabic translation of "may God have mercy on her".

The chat between Fay and Afaf is one example that reveals how individuals bring along with them a number of identities which shift as practices shift. According to Norris, "Every action that is performed by an individual claims at least one of the individual's identity elements, so we find that individuals always construct several identity elements simultaneously" (Norris, 2005, p. 185). The question is how do we sense or trace different identities? These examples suggest that the historical bodies of individuals is put on display through mediational means such as their choice of mode and code (Norris, 2005). The practice of preparing for a school presentation in which Afaf and Fay are involved brings in their identity as university students and more specifically, English department students. These identities are projected through the use of English in lines 1-4 and the use of words such as "presentation" and "talking about girls power". The use of Netspeak acronyms such as "Omg", emojis and lower case "i" simultaneously project identities of young digital users of online platforms. The shift to Arabic allows the participants to engage in cultural rituals that are usually expressed in Arabic when mentioning the death of someone. The motivation of this code-switch is similar to the one which motivated the use of "inshallah" in example 1 but differs in the range of engagement with the different social worlds. The examples of "inshallah" and "tasleek" are just few words among many that the participants use to simultaneously participate in different discourse systems, maintaining the kind of identities that English allows them to claim while still being able to participate in traditional (Saudi or Arabic) kinds of exchanges. In these examples, the participants do not really move from one

world to another. They are able to bring practices from the traditional Saudi world into their online English practices in a way that they were able to maintain both identities at once.

Language use in this example reflects the kind of relationships managed between Fay and Afaf. It is clear that there is a pre-existing relationship. They are friends who meet at school, prepare for presentations together and talk about past events and other people whom they both know. Their relationship is also emphasized by Afaf calling Fay by her first name in English in line 1 and in Arabic in line 5. Calling someone by his/her first name is used not only as a contextualization cue indicating a move to a new topic as shown in this example and other instances in the data but also indicates an informal relationship and a linguistic strategy for involvement (Scollon et al., 2012). Moreover, the way the two actions are framed is also different. The use of the laughing face emoji in the first action is in line with "girl power" whereas a completely different frame is created by the use of a crying face emoji and a heart which are used to enact certain individual and cultural identities that the social action requires; Afaf shows her vulnerable and empathizing side by the use of these emojis, and gives a prayer for her friend's mother who passed away.

The analysis of this example explains not only the importance of actions as the unit of analysis but also as the starting point for analysis, because the shift in action implies the shift in the whole nexus of practice. This example reveals that actions affect the entire nexus because different discourse systems circulate through different actions. These local and global discourse systems create tension for individuals in choosing which appropriate system to use in an interaction (Norris, 2005). However, in this example, the shift functions as a contextualization cue announcing a change in action and topic unlike the switch in "inshallah" which takes place within the same action. The combination of a shift to new topic and engagement in a local cultural ritual motivated the change in not only language but also script, which is parallel to the complete shift in identities. It might be possible that this type of action brings along a local identity that is deeply rooted in the Saudi culture and by using Arabic language and script, the participants are respecting this special occasion by not participating in other global worlds. This example stresses the idea that all actions and cultural tools are affected by the historical body and their social worlds.

6.6 Example 5: *Saying Hello*

This final example is from a WhatsApp group chat of three sisters. The purpose of their interaction in the following excerpt is relational. The conversation aims at accomplishing nothing but saying hello and keeping in touch. This social action conforms to the conclusions found in the reported data of the participants' electronic literacy logs which indicate that participants use WhatsApp mostly to keep in touch with family and use Arabic in their interactions with family members. These conclusions are exemplified in the following excerpt:

1. Sister 1: اخباركم خواتي العزيزات ☺   [How are my precious sisters?]

2. Sister 2: هلا هلا   [Hello Hello]

3. Sister 2: الحمدلله كيفك انتي   [fine how are you?]

4. Sister 2: شفت وسن غشها مره 😂❤   [I saw Wasan. She is very pathetic]

5. Sister 2: الله يشفيها ☹   [may Allah heal her]

6. Sister 1: هلا فيك   [Hello]

7. Sister 1: ماعلينا ماشي الحال   [We are all ok]

8. Sister 1: ايه ي عمري تحززن☹   [Yes, poor thing my love]

9. Sister 3: غشها وربي   [So pathetic I swear]

10. Sister 3: مرا كثير   [too much]

11. Sister 3: اخاف يطول   [I fear it takes too long]

Example 5: Saying hello

The social action the participants try to accomplish revolves round keeping in touch and getting closer to each other as the initiative question, "How are my precious sisters?", and the loving face emoji indicate phatic communication. This action has an impact on the type of interpersonal relationship and face systems they are managing. The interaction becomes all about face giving. Sister 1 who states the initial question is given a positive face indicated by a warm welcome from Sister 2, "Hello Hello", followed by a sequence of a question, "fine how are you?", a statement about their little niece, "I saw Wasan. She is very pathetic" and a prayer. Sister 1 responds to Sister 2 by giving attention to her input; Sister 1 responds in three sequential turns (lines 6, 7 and

8) creating three spaced adjacency pairs to parallel her sister's input and degree of care. In line 8, Sister 1 seems to abandon the type of frame which she starts the conversation with to a frame of sadness in a face giving act. Sister 1 uses the same sad face that her sister used in line 5 to show involvement in the same kind of feelings. Then, Sister 3 joins the conversation with similar mood as she enters the chat with the words "So pathetic I swear" to acknowledge her identification with that person (Wasan). She also identifies with the same type of emotions her sisters have for Wasan by repeating the exact Arabic word which her sister uses in line 4. Sister 3 also uses three sequential turns to express her feelings towards their sick relative using words such as "swear", "too much" and "I fear" to fit in with the dominating atmosphere in this particular interaction. What is noticeable in all these turns is that they are all in Arabic.

The "heteroglossic potential" (Androutsopoulos, 2014, p. 13) of this application seems to be limited in this interaction. The analysis emphasizes "the interplay of fluidity and fixity" of multilingualism showing that "multilingual practice includes many monolingual moments, which result from their situated orientation to particular addressees or topics" (Androutsopoulos, 2015, p. 201). The constraints over use of specific semiotic systems are in this case a complex matter that could be realized through understanding the links between the aspects of the model. Language use in this example is not attributed to the social action to be accomplished in this encounter. There are other instances in the data where the participants want to just say hello and would use different styles and languages such as "Hiiii", "Ahleen" and "هلا" but in this interaction only Arabic and some emojis are used. It is actually the type of interaction order in which this interaction is taking place. This is a group of sisters who presumably are different in age and linguistic background (sister 3 is an English department student). The type of pre-existing relationship they have which includes a presupposition of other members' linguistic repertoire also affects their linguistic choices. However, there are some instances in the data where sisters and cousins in a dyadic chat use more semiotic varieties including English and Arabish. In situations like this one in which an interaction is taking place within a chat group of more than two family members, language use is curated to involve all members and avoid languages and styles that might isolate some members of the group from the interaction. An examination of this interaction and all other interactions in this chat group shows that they are conducted using Arabic and emojis only. There is not a single instance of

English, Arabish or Arabicized English used in this chat group. The participants in most interactions with family members act as monolinguals.

As a result of this language use, local identities are projected in this interaction. Unlike other examples presented in this chapter, the number of social worlds these participants are engaging in is very limited. A local Saudi family circle, more specifically a family of a western province origin, is embedded. The geographical origin of this Saudi family is revealed by the use of the western provincial dialect as exemplified by use of words such as "غشها" which translates to "pathetic". However, the same participant, Sister 3, who is using Arabic only in this interaction is found using other varieties with her English department friends and classmates, thus projecting various identities and engaging in several social worlds. The range of identities the participants enact can be seen in terms of a web of identities on a continuum ranging from local to global depending on the type of participant and interaction order found in particular sites of engagement.

6.7 Conclusion

This chapter analyzed some samples from WhatsApp chats from the data contributed by participants in this study. The analysis demonstrates the importance of interrogating specific examples in order to explain the complex nature of these interactions. Within a mediated discourse analysis framework, actions are used as the unit of analysis in order to reveal how both local discourse and broader discourse systems contribute to their accomplishment. The analysis shows that the affordances and constraints of mediational means affect interaction; however, participants demonstrate creativity in appropriating tools to serve their communicative goals. Participants also have a vital role in shaping interactions by reflecting the social worlds they belong to and managing relationships with others.

This chapter demonstrates how important it is to understand translanguaging through its situated context. Translanguaging might be affected by kind of topic and recipient but most importantly by the kinds of actions, relationships and identities brought into different interactions. In the data, and in these examples, the participants enact a range of identities ranging from local and traditional to global ones. The projection of these identities varies according to the type of relationship that participants have and the kind of topic. As shown in Figure 6.3, participants enact a

high degree of local identities in which local varieties of languages are used in the discourses they embrace in family group chats; on the other hand, participants project more global identities when they are comfortable with their close classmates.
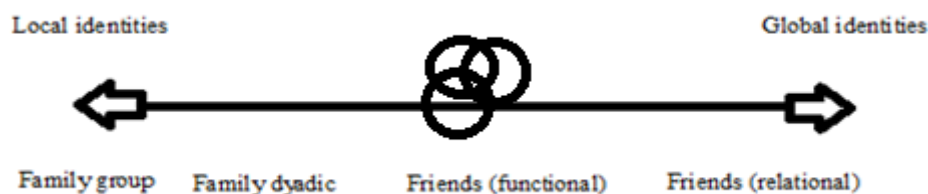
Figure 6.3 Range of identities enacted with family and friends

It becomes clear that the explanation of what motivates code and mode switching in the previous chapter is a simplistic one; the participants perform actions at the nexus explained in the model (Figure 6.1); these actions affect the choice of tools, tools reflect identities and relations, and the enactment of identities affects the choice of tools and accomplishment of actions. What the analysis of the WhatsApp examples in this chapter reveals is the importance of social and cultural factors in participants' interactions. As Scollon and Scollon (2003, p. 7) put it: "All semiotic systems operate as systems of social positioning and power relationships both at the level of interpersonal relationships and at the level of struggles for hegemony among social group in any society."

In conclusion, what the analysis of this example and other previous WhatsApp examples reveal is that what motivates language use is a complex matter. It is partly linked to the type of participants, family or friends, and the topic they are talking about, e.g. a sick relative or school presentations, but it is also linked to cultural norms of interaction, the relationships between participants, and the affordances and constraints of semiotic and technological resources. It is clear from the analysis of these examples that translanguaging requires that attention is paid to how these interactions take place within broader cultural contexts, and how participants use these interactions to engage in recognizable social practices and enact recognizable social identities. The following chapter adopts a similar kind of analysis of examples from Snapchat.

Chapter 7
Analysis of Snapchat Examples

7.1 Introduction

In the previous chapter, a close-up analysis of WhatsApp showed that the participants' choice of code and mode cannot be explained in a simple, linear way, but rather takes place at a complex nexus of tools, relations, identities and practices. In this chapter a similar close analysis of participants' interaction on Snapchat is undertaken. Although the same model, informed by mediated discourse analysis, is used in the analysis of WhatsApp and Snapchat data, there are major differences between how interactions are taking place through WhatsApp and Snapchat. These differences can be illustrated through the following example from Snapchat. In this snap (*Figure 7.1*), the participant is sharing her experience at a restaurant with her followers on Snapchat. She took a photo of the food she and others around the table are experiencing, labeled it with an English text, "Salmon heaven", and several heart emojis, and surrounded her plate with a hand-sketched heart. The semiotic aggregate in this snap not only communicates semantic content; it reenacts a particular set of social actions involving particular sets of social relationships and identities, and it enacts a new social action directed towards the recipients of the message which entails its own sets of relationships and identities.

Figure 7.1 Salmon Heaven

The first noticeable difference between Snapchat and WhatsApp illustrated in this example is that interaction via Snapchat mainly relies on images, with text usually playing a secondary role. Although WhatsApp and Snapchat both allow for taking pictures, typing texts and recording videos, the way these semiotic aggregates, i.e. codes and modes, are combined to form meaning is different. In Snapchat, these modes are presented *simultaneously* rather than sequentially. However, this simultaneity is not random: the different semiotic modes are carefully placed, or *emplaced*, on the screen in meaningful ways to portray a particular kind of dining experience: the participant's salmon dish is in the center of the screen, the text is placed just above the plate in what Kress and Van Leeuwen (1996) refer to as the 'ideal' segment of the image, and the heart is carefully sketched around the salmon. This use of screen space (layout) as a communicative resource is perhaps the most prominent feature of Snapchat.

The importance of space in Snapchat, however, is not limited to the screen. The main affordance of the app is that it allows users to communicate their experience of physical space both by taking a picture of the place they inhabit and communicating their particular perspective of that place through how they hold the camera and frame the image. In Snapchat, the sender is emplaced in the particular space where the snap is taken. Whether the sender chooses to be in the image, i.e. take a selfie, or shows others

in the snap, there is still an identifiable sender who is usually presumed to be holding the phone when the snap is taken. In the "Salmon heaven" example above, the participant is not only inviting the viewer to experience the physical space of that particular restaurant but also, by choosing a specific perspective of the camera, choosing what physical aspects and bodies to reveal and conceal.   In   this   snap reproduced above, the sender has chosen to present a close up image of the food that she is eating. This image however, does not just communicate the type of food but also emplaces the sender in a type of place. The kind of plates and food captured are linked to restaurants of luxury and fine dining that usually serve international dishes. To understand why the participant is using different codes, such as the English words "Salmon heaven" depends on being able to connect these words to the place where this picture was taken which indexes a certain socioeconomic class. Similarly, to understand why the participant drew a heart or took a picture of a plate or other people depends on the understanding of how objects and people are placed within the screen and how they are placed in the physical world. The choice of code and mode is not just a matter of the topic, the audience, and the affordances of the technology, but also the way codes and modes are emplaced both on and off the screen. In order to understand the effect of emplacement on how codes and modes are used, I will draw on principles from geosemiotics.

As I mentioned in Chapter 3, geosemiotics (Scollon & Scollon, 2003) is the study of how meaning depends on the way signs and objects are physically placed in the material world, i.e. *emplacement*. When it comes to complex multimodal communication of the kind illustrated in the example above, geosemiotics considers both *visual semiotics* (Kress & Van Leeuwen, 1996), the meaning potential of images and how they interact with other modes such as words, emojis and plates of salmon, as well as *place semiotics,* the way images, words and objects, like plates of salmon, are arranged in space, not just the space of the photograph, but also the physical spaces in which the photo was taken and later viewed. Whereas visual semiotics focuses on the semantic meaning of signs and their relationship to each other (syntax), place semiotics focuses on indexical meaning (Johnstone et al., 2006; Silverstein, 2003), the kind of meaning that is derived from the relationship between signs and the contexts in which they are used. Mobile apps like Snapchat, however, complicate our understanding of indexicality, since the physical contexts of signs constantly changes as users move

through the physical environment and as the pictures they take are circulated to friends in other locations. This dynamism, in fact, is a feature of indexicality whenever sign interpreters move through time and space; as Scollon and Scollon (2003, p. 41) put it:

> Here we have concentrated primarily on the indexicality of language and other signs in the worlds. At the same time, however, we want to emphasize that the interpreter of any sign is also in the world taking action in real time. Such indexicals as 'now' and 'that' are not just matters of the world outside the social actor, but are also indexical by the position and action and psychological states of the social actor. As social actors move through time, time itself sets limits on interpretality. 'Now' becomes 'a few minutes' ago rather quickly. 'Here' becomes 'there' as one moves through space.

The analysis of the "Salmon heaven" example shows that to understand Snapchat, it is necessary to go beyond traditional linguistic analysis that considers time and sequentiality in the organization of conversational gambits, which contributed to our understanding of interaction on WhatsApp in the previous chapter. Snapchat interaction takes place at a nexus of practices which also accounts for space as a communicative tool.

Although the main affordance in Snapchat is simultaneity and emplacement, sequentiality and narrativity is also a part of this kind of communication which can be seen in some snaps that form stories, or 'small stories', (Georgakopoulou, 2006, 2016; Page, 2013) as will be illustrated later in this chapter. The 'Salmon heaven' snap can be considered as an 'update' which carries insight into what current events the participant is involved in as part of a conversation or a series of pictures. Although there were no pictures before or after this one in the participant's Snapchat story on that day, the 'Salmon heaven' snap may itself function as a 'small story' because it depends on a history of interactions that has built up among participants online and in face- to face encounters (Georgakopoulou, 2006, 2016; Page, 2013).

In what follows, more examples from Snapchat are analyzed to understand how participants accomplish actions, manage relationships and enact identities by creatively utilizing the affordances of the app.

7.2 Example 1: *Evening coffee*

In this example, the participant is sharing a picture of her cup of coffee with an Arabic text which can be translated as "evening coffee". The snap illustrates one of the most common multimodal patterns, i.e. image, text and emoji. The participant also uses a filter (*Figure 7.2*). These elements are strategically emplaced to index physical, interpersonal and social spaces.

Figure 7.2 Evening coffee

Objects and bodies in this snap are emplaced in time and space. The participant is emplaced in that physical space holding a cup in her hand that is showing in the screen. A text is emplaced in the middle of the screen to emphasize the importance of the text and at the same time gives meaning to the image. The text, "evening coffee", is emplaced in the center of the cup to indexically link the semantic meaning of "coffee" to the image of the cup indexing the kind of beverage the participant is having. The word "coffee" is also modified by the adjective "evening" to indicate the time of the day. This phrase is followed by an emoji of a musical note which may indicate relaxation and enjoyment of that experience. There is also what Kress and Van Leeuwen (1996) refer to as the representation of grammatical modality in which reality in this picture is affected by applying the black and white filter to alter the degree of realism in the image. The relationship between the real world and the image in this snap is not naturalistic; the black and white filter overlays the image with a particular 'mood'

or attitude towards what is depicted, one designed to, perhaps match the traditional setting of Arabic coffee.

The special emplacement of visual elements contributes to the management of social relationships. The perspective chosen by the participant and choices made about what to fit in the screen communicates interpersonal space. Showing the participant's hand in the image emphasizes an emplaced as well as embodied experience, and the choice of a vertical angle to capture the cup of coffee is an attempt to involve recipients by allowing them to share the same visual perspective as the author. There is actually no distance between the viewer and the cup nor the hand.

The choice of code and mode in this snap not only indexes physical and interpersonal spaces but also cultural spaces. The use of Arabic emplaces the snap in its cultural space just as the choice of English does in the *Salmon Heaven* example. The Arabic phrase 'evening coffee' is a common one in Arabic, similar to 'morning coffee' in English. It is 'evening coffee' time which is considered a good time for coffee in the Saudi culture. The choice of language in snaps about food is related to the kind of food, global or local, and the practice of eating at home or dining out. Evening coffee is a local drink which is usually found at home whereas salmon is a global dish that is usually eaten when dining out.

This example illustrates how different kinds of spaces are used to create meaning: there is the geographical space, such as the participant's house. There is the screen space in which participants make decisions about how to arrange different semiotic objects in relation to one another. There are also spaces associated with the interaction order, such as the perspectival space, which include the way the picture emplaces the viewer. And finally, there is the cultural space: home, country, region, university, which are all overlapping cultural spaces connected to the physical and the interpersonal worlds of the participants.

7.3 Example 2: "*Life is hard in Translation class*"

The descriptive chapter, (Chapter 5), shows that choice of language can be linked to the topic of an image. However, it does not account for how such factors as the 'historical bodies of users' (their past experiences) and the dynamic construction of interaction orders contribute to determining how modes and codes are used. The choice of English in the snap below is not only motivated by the topic of school. Different

interaction orders can also affect choices of code and mode. The participant in *Figure 7.3* was in a translation lecture when she posted this snap. She took a picture of her desk, notebook and file and wrote a text in English, *"Life is hard in Translation class"*, as shown in the following snap:
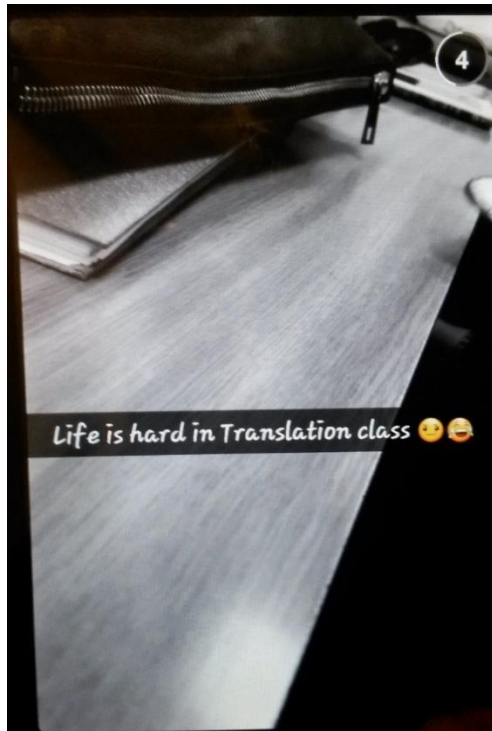
Figure 7.3 Life is hard in translation class

The image in *Figure 7.3* which shows a desk, a file a notebook, is explained by the English text emplaced on top of the image, "*Life is hard in Translation class*", to describe the setting of a translation class. Posting the image and the text together creates a different meaning than if they were presented separately: the meanings of the sentence in the image both reinforce and change each other. The emplacement of the words "Life is hard in Translation class" above that image, links the text to the materiality of the physical space. The fact that it is written in English in a translation class not only reflects the photographer's code preference which is linked to her identity as an English department student but also her emplaced historical body. Through indexicality, the participant is giving meaning to the picture and at the same time emplacing actions, people and tools in their physical as well as their historical worlds.

The perspective of the photographer in this snap is also used as a semiotic resource not only to inform the viewer about the physical place where the photograph

was taken, but also to construct an interaction order and to enact a particular identity. The physical setting of this snap not only affects the choice of code, but also constrains the use of the tool through which this message is being sent. The perspective of image shows that the participant is positioned behind a desk with a notebook and a file in front of her. In this situation, the participant is fulfilling the role of a student who is in a "translation class" which also indexes the existence of other bodies situated in the same physical place, including a teacher and other classmates. The participant is emplaced within a classroom in which the use of mobile phones is not allowed, and thus confronted with a tension between the physical space and other social spaces she wants to participate in. The participant is actually taking risks to share her feelings and involve her viewers in that particular moment. The objects that are shown on the screen indicate that the camera has been placed low in order to allow the participant to take a picture without being noticed. In this way, the constraint imposed by the interaction order of the classroom becomes an affordance for communicating with the recipients of the picture, allowing the photographer to claim a transgressive identity. The perspective created by the participant is not only used to position the participant in the material world but also to create a relationship with the viewers of this snap. Although the participant's feelings are communicated through the use of visual semiotics including the use of italics and emoticons, what actually dramatizes that emotional message is the participant's desperate attempt to share her experience communicated through the emplacement of the camera.

This snap reveals that in Snapchat multiple interaction orders typically occur at once. There is the interaction order of the situation in which the snap is taken, and the interaction order between the sender of the snap and the receiver of the snap. What is interesting in this picture is that the interaction order and power relationships between the teacher and the student influences how the snap is taken, and this interaction order is communicated within the more egalitarian interaction order between the senders and receivers. The receivers of the snap immediately recognize why it has been taken this way because of their own experiences in the interaction order of the classroom, and sharing this reinforces the solidarity between sender and receiver because it makes them co-conspirators in the taking of the picture.

7.4 Example 3: *half a selfie*

Similar to other social media platforms, Snapchat allows users a wide range of affordances to manipulate code and mode in the design of messages. What makes Snapchat different from other platforms is its utilization of senders' physical environments and their own bodies as the main communicative resources. The emplacement of people, actions and tools is essential in Snapchat. This affordance of Snapchat is one of many opportunities which technology provides to allow people to experience their bodies in new and different ways (Jones, 2011). As a result of these affordances, certain practices have become common in Snapchat, such as taking selfies. A selfie is a means to emplace the user's body, or face, in time and space. Embodiment, in Snapchat can also be seen to take place at a nexus of practice, because it occurs at the intersection among tools, interpersonal relationships and historical bodies. In *Figure 7.4*, one of the participants shares a selfie, or *half a selfie*, with her followers:
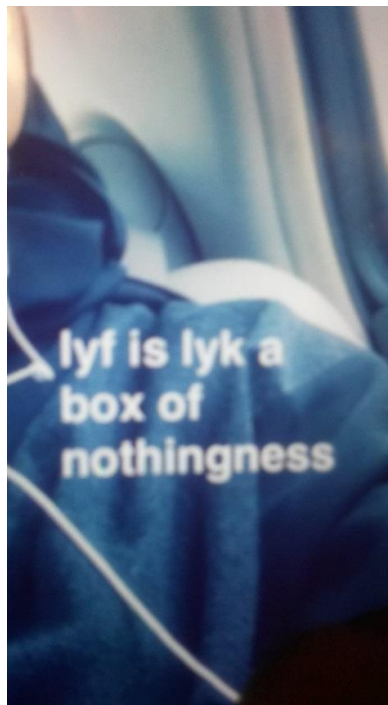
Figure 7.4 Half a selfie

In this snap, two prominent tools are used to create an embodied and emplaced moment. The first tool used is the body. It is used as a semantic tool to represent a particular woman, although the identity of that woman may not be apparent to people who do not know her. This body is also an indicator of a semantic demographic: the participant's outfit is linked to the Saudi norms of women's outdoor clothing. The body

is also used as an artistic tool, serving as a background to create a contrast with the white colored text emplaced on top of it. At the same time, the meaning of this body also comes from the skillful use of space as a communicative resource: from the way the photographer emplaces that body in the physical world and positions it on the screen.

Part of understanding this embodied and emplaced moment is the realization that this is a moment that is shared and viewed by others via Snapchat. Because images such as the 'half a selfie' take place through Snapchat, there is an established presupposition that what is displayed in the screen is the creation of their already known Snapchat friend whether that friend appears in snaps or not. In this snap, the physical body is doing the action of taking the selfie, texting and locating the text in the center. By emplacing the text on the body, the participant is claiming ownership of the text which communicates a thought about the world to her Snapchat followers. The perspective the participant provides for her viewers creates an interpersonal space. The space in this snap can be characterized as intimate or personal. This upper body selfie creates a view for the receiver which mimics the space of a personal interaction. The participant is sharing a selfie but at the same time not showing her whole face.

The complexity of this snap emerges from the way it brings together two different worlds in one body. This can be illustrated both through visual semiotics and place semiotics. The use of an English text with a marked spelling, "lyf" and "lyk", superimposed on a traditional Saudi female black gown allows the participant to claim the identities both as a 'hip' English-speaking young person, and as a Saudi female who conforms to 'traditional' apparel. At the same time the participant also engages simultaneously in global and local worlds by taking a picture of herself without revealing all of her face. By creatively using the affordances of the app which enable her to control what is visible in the physical environment she inhabits, she is able to participate in the historical practice of 'Snapchat selfies' and also to conform to the conservative norms of her local society. In the data, several snaps with selfies or other people are altered by appropriating tools from Snapchat which do not just allow people to take pictures, but also allow them to obscure the things they are taking pictures of through using particular camera angles or using the sketch mode to write or scribble over faces.

This example shows that the affordance of snapchat facilitates the utilization of the body in new ways. The body, in this example, can be seen as the *text* and at the same time as the *context* (Samuelson & Wohlwend, 2015) . The different ways of emplacing the body can contribute to the accomplishment of an action, management of a relationship and the enactment of cultural identities. The idea of embodiment "blurs binaries such as language and action or text and context" (Samuelson & Wohlwend, 2015, p. 565). This example reveals that not only can texts and objects be emplaced in interactions but also the integration of body and space results in semantic, social and identity work.

7.5 Example 4: *Muting space*

As illustrated in the examples above, *space* in Snapchat is used as the main communicative tool. The utilization of representations of the physical environments inhabited by the sender is the default option in Snapchat, which affects the way the sender can make meaning. However, participants in some snaps attempt to *mute* this affordance to eliminate associations with space and semiosis which affect their actions. The multimodal patterns that are coded for in the descriptive chapter indicate that there are 13 snaps that do not have an image, but have a blank background instead. Without links to space and the physical world, attention is shifted to the text. In the following snap, the participant intentionally mutes the affordance of taking pictures by, possibly, putting her finger against the camera or taking an image of a blank dark object in order to create a blank background:
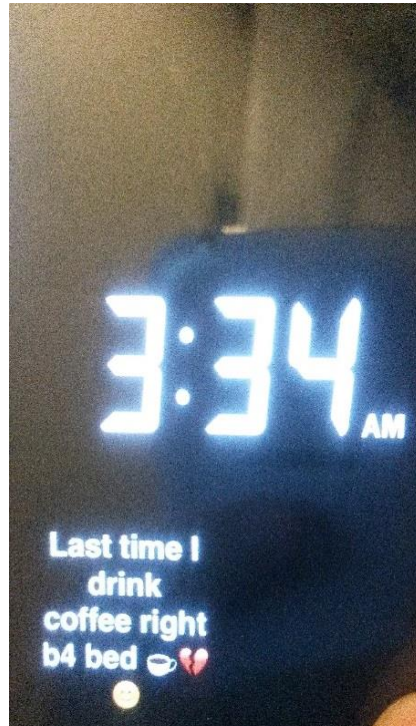
Figure 7.5 Muting space

This snap illustrates the tension between tools and what we can do with them, and at the same time shows how participants are creative in appropriating constraints which are also affordances. With all affordances, people have the choice of what to use and what not to use. In Snapchat, as well as WhatsApp, participants display a wide range of choices of code and mode. However, not taking a picture in Snapchat is different because the picture mode is the default option, and, as with any unmarked choice, its absence creates implicature. Because emplacement in this snap is concealed, other means of indexicality are used to create a different kind of emplacement and embodiment than the one usually maintained in Snapchat. In addition to indication of time, place is indicated by the black background which might actually index the darkness of the room and person is indexed by the use of the deictic pronoun "I" to refer to the participant who is presumably already known by the viewer of this snap.

Although the physical space is muted, other spaces contribute to the understanding of the meaning of this snap. First, there is the space of the screen. In Figure 7.5, semiotic tools are presented in different ways and parts on the screen. The participant's display of time is more inscribed and fixed on the screen. The participant has no control over font or place of time which adds a kind of authority to this part of the message. An add-on text is given below the time on the left hand corner using a smaller font. This

can be explained through Kress and van Leeuwen's (1996) principles of information structure in visual semiotics:
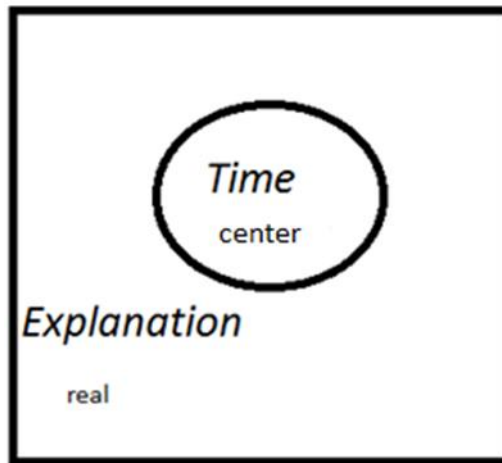
Figure 7.6 Information organization in the 'muting space' example

The snap in *Figure 7.6* places a time stamp in the focal part of the image. The explanation for this emplacement is given below using a smaller font. As explained above, the participant has no control over the time display feature provided by snapchat but can control the script, color, size and placement of her own text. The participant added emoticons, a cup of coffee and a broken heart, after the English text to create a linguistic as well as visual congruence which contribute to the upscaling and intensifying of the meaning. By posting these details in Snapchat, the participant is actually doing more than informing recipients about her insomnia. By sharing this specific moment with her Snapchat followers, she is also managing a kind of relationship with them. Sharing this type of information at this time is an indication of her closeness to the viewers of this snap. By posting this moment in Snapchat, the participant succeeds in capturing the moment and sharing it on "My Story" which participants can view within 24 hours. A previous relationship with her Snapchat viewers is established by presupposing their familiarity with the use of informal English including the word "b4" and emojis. By choosing English and forms common in online communication, the participant is identifying herself as part of these cultural worlds and at the same time assuming that these semiotic choices are conceivable to her viewers. The viewers are also identified as members of these cultural worlds because the participant is imputing these identities on them.

7.6 Example 5: *'Stories' in 'My Story'*

In most snaps in the data, participants communicated moments such as the ones described above within one post. However, there are some snaps in the Snapchat data in which participants represent a sequence of events linking them by their choices of code and mode. The following examples attempt to reveal the strategies the participants used in creating these 'stories' within the "My Story" function of the app.

Messages posted in "My Story" may not be considered stories in the traditional sense. Participants typically post several snaps throughout the day that are arranged chronologically but not necessarily connected in any kind of meaningful way. The majority of snaps are those that are posted as single statements and are not linked to other snaps that come before or after. However, there are some (25% of all snaps) that occur sequentially within a short period of time and meaningfully resemble narratives.

It might be argued that Snapchat is an exemplar of stories and narratives on social media (Amancio, 2017; Page, 2013) and single snaps such as selfies can be considered "small stories" (Georgakopoulou, 2006, 2016). "Small stories" are defined as recent slices of life that people feel the need to share with other friends (Georgakopoulou, 2006). These narratives usually report mundane everyday events and in most cases lack the conventional form of stories but signal a narrative *in process* (Georgakopoulou, 2016). Social media is used to document ongoing stories of personal experience from their private life. Acknowledging the different format of storytelling, stories in social media are told in real time. Narrativity in social media is characterized by sequential events, ordered within temporality and linked by causality (Page, 2013). Storytelling is a situated practice which involves the narrators in processes of making sense of themselves and the viewers. In the following examples, the narrative aspect of Snapchat stories is understood in terms of the model developed above, which focuses on how meaning is created through emplacement, and how this emplacement serves to position narrators within different (usually multiple) physical, interpersonal and cultural worlds.

In most narratives in Snapchat, the structure of narratives is realized through tools from visual semiotics. In the example below (*Figure 7.7*), sequentiality is not only indicated by the default chronological order of snaps in Snapchat but also by the logical sequence of the actions unfolding. In the first snap, the participant is taking a photo of a new packaged mascara emplaced on a notebook and a desk. The same physical space is

displayed in the second snap with an open mascara and brush with all the packaging removed, indexing actions that have taken place between the first picture and the second picture. Viewers understand the implied parts of the story which include their friend, who is telling the story, being involved in the opening of the mascara's package 'offstage':

Figure 7.7 Snaps about one object

In addition to visual semiotics, social relationships and historical bodies contribute to the understanding of this pair of images as a narrative. Snaps in *Figure 7.7* are not only about different types of mascara but are also about communicating an interpersonal experience. The participant is sharing an embodied experience as part of sharing a beauty tip with her Snapchat followers. Suggesting and rating products by applying them on physical bodies is highly appreciated in the world of beauty as it indicates a genuine experiment. The way the participant presents her "self" in that small story and this site of engagement does some identity work. A certain kind of self and narrative emerges which is familiar with make-up tutorials in digital media. The participant is not only indexing membership in cultures of femininity and digital culture but is also imputing these identities on her Snapchat followers.

Unlike the example in *Figure 7.7*, there are snaps that are not linked through visual semiotics. One technique the participants used to create a narrative in snaps with different images is through linguistic references to the same person or object. One example can be seen in *Figure 7.8*. The two snaps are about a participant who is waiting for her friend "YuRi". Although the two snaps informing about the same action display

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two different images with different perspectives and two different texts, they are understood meaningfully connected by means of referential indexicality. The two snaps are linked together by the use of the same name of the person whom the participant is waiting for.

Figure 7.8 Snaps about one person

This is a story told in two images, but they do not represent a temporal sequence so much as representing two different perspectives on the same moment in time. In the first snap, the participant uses the back camera to take a photo of a desk in front of her, and writes a text in English, "Waiting for YuRi be like…", while waiting for her friend. The participant does not appear in the image but is known to viewers to be holding the camera away from her to focus on someone else's absence, "YuRi", who is also not in the image. In the second snap, the flip of the camera creates a change in the perspective of the story. The second snap is a black and white selfie which dramatizes the long wait for "YuRi" and at the same time indicates that the focus is now on the participant who is telling YuRi that she is "dead". Emplacement, embodiment and the relationship between different bodies contribute to the understanding of each snap. In addition, as indicated above, repeating her friend's name by using two different codes, English in the first and Arabic in the second, is also one of the main indications that the second snap is narratively linked to the previous one.

Translanguaging in this story can be understood not only through the change in visual perspective but also in relation to the interaction order. The change in perspective

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is accompanied by a change in roles and ratification. In the first snap, the story is told in English by the participant, who is also the narrator, and is addressed to all her Snapchat followers. This is indicated by referring to her friend in "Waiting for Yuri" in the third person. By choosing an English text, the participant is casting her English department followers as story recipients which increases the requirement for showing alignment with the action and the participant's stance on this reported experience (Georgakopoulou, 2016). In the second snap, the narrative changes into a dialogue between the participant and "YuRi"; the participant in this case, uses the first person pronoun "I" in "Yuri, I'm dead". The other viewers of this snap are now considered bystanders. The shift from English to Arabic seems to indicate the change of the participant's different roles in the story as well as the kind of relationship managed between the participant and who is ratified in each snap.

This understanding of narratives in Snapchat based on the kind of relationship the participants have and their historical bodies is also linked to the realization of different kinds of spaces. In the sequence of snaps in *Figure 7.9* below, there is *a story within a story* which is realized through different social and physical spaces. First, there is the sequence of snaps in which the participant is watching Korean drama and commenting on it. Second, there is the narrative of events in the Korean show itself.
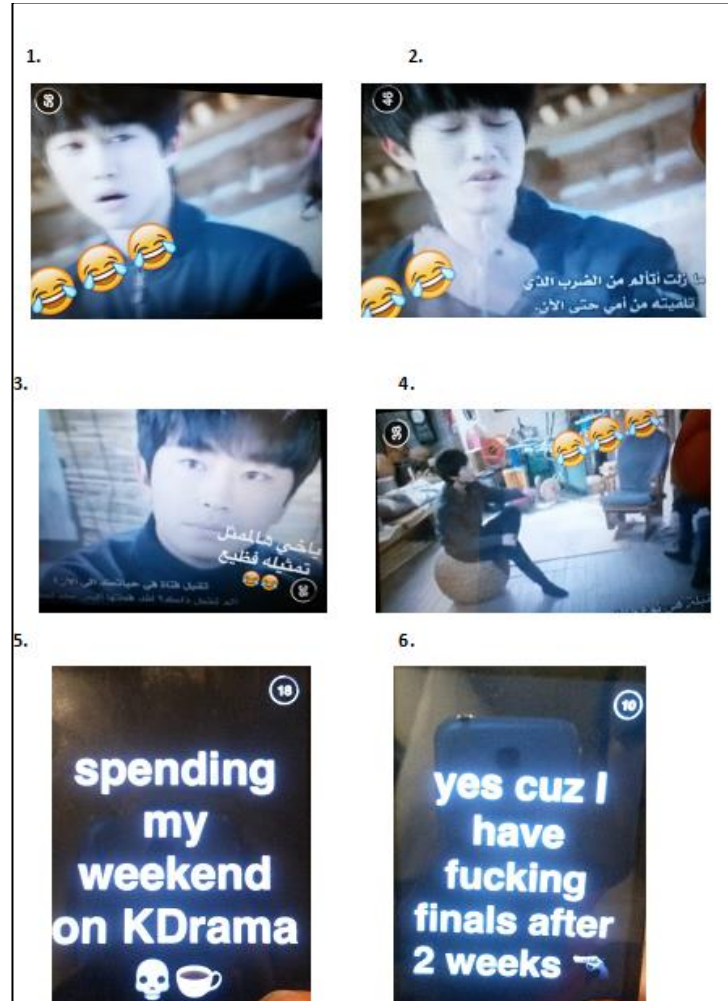
Figure 7.9 A story within a story

The sequence of these snaps is displayed in two different screens each has a different story. There is the screen of the lap top which displays the Korean show and has a narrative of its own, a genre that the participants' are familiar with. The second physical space is realized through the instrumentality of Snapchat which represents an emplaced and embodied experience within a limited time and space. These snaps are also emplaced in a third space, that is the sender's room, and viewers know that these snaps are posted by their friend who is located at her home in Saudi Arabia. The two narratives are not only emplaced in two different screens but also two different physical places and cultures. Posting clips of a Korean show is indicative of the interest in this genre as part of the participants' historical bodies and by sharing these moments the participant is indicating closeness to the viewer. All of these physical overlapping spaces are muted in the last two snaps.

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The participant ends both stories (the story the drama and the story about her watching the drama) with two sequential textual comments. Here, the photographic affordance of Snapchat is muted to emphasize the text. Links to previous snaps are made by describing what she is doing using a present continuous form, i.e. "spending" and describing the clips as "KDrama". The final snap is linked not only sequentially but also in relation to causality with the clause "cuz I have fucking finals". By mentioning "finals", the participant is also involving her viewers with a shared experience that is important to all of them. The experience of exams is framed in a way that is different from the way she frames KDrama: the shift from laughing faces to a skeleton, a cup of coffee and a gun is a frame that the participants identify with. The way this sequence of snaps ends is different from how it starts, yet all the snaps are linked in a way that is meaningful to the participant's Snapchat followers.

Participants in this study utilized several tools to create narrative links between snaps. The Snapchat data shows that the way the participants used *My Story* in general was not to create sequential narratives but simply to broadcast statements to a wider audience within several snaps that were not connected. However, sequentiality and narrativity were important resources in some snaps.

7.7 Conclusion

In this chapter, I argue that the key to understanding the way participants use different codes and modes in Snapchat is looking beyond the traditional analysis of sequential exchanges of language that is found in WhatsApp chats. The examination of Snapchat shows that different affordances of different applications provide different resources for meaning making and require different methods for understanding how meaning is made. Space and emplacement is central to the understanding of a snap within the nexus of practice. Analysis of Snapchat needs to consider how language and other signs are organized in a spatial way not only on the screen, as in the emplacement of heart emoticons in the *Salmon Heaven* example, but also in the physical space outside of the screen. In addition to emplacement of tools, emplacement of bodies is also important in the realization of meaning in Snapchat. The analysis of Snapchat also reveals that emplacement and embodiment not only creates interpersonal spaces but also cultural spaces as can be seen in the different positioning of space and self in the

half selfie snap and the KDrama example. Snapchat is all about *emplacement*: it aims at making people's places and spaces into a *story* to be told by providing tools that emplace people and signs.

The analysis also shows that there are tensions between meanings and tools. The participants adapt tools from Snapchat to participate in the new *global* practices associated with Snapchat and at the same time preserve the *local* practices of the culture in which they find themselves. It is clear from the data and the examples in this chapter how Snapchat has changed the Saudi culture and how this culture has adapted Snapchat. There are different practices and actions adopted with the help of this technology such as taking selfies and sharing food pictures. The impact of new affordances not only has affected actions but also social relationships. People are now sharing spaces that are not usually shared online. On the other hand, the local culture also has changed Snapchat. This can be seen in participants' adapting angles for selfies, or half selfies and creating black backgrounds to eliminate the impact of space. The stories told by the participants through their snaps are live representations of moments in the history of young Saudi females. The snaps also specify exactly what type of Saudis they are; the recurrent images of houses, food, university halls and books indicate that they are female university students. At the same time, they are part of the global world of technology and English.

These tensions between tools, meanings and cultures are best understood through the nexus of practices in which actions, tools, relationships and identities intersect when people interact online. Participants used different semiotic aggregates that emplace them in different spaces. The model used in the analysis shows how the use of semiotic aggregates affect, and are affected, by relationships, historical bodies and cultures of use.

Chapter 8
Discussion and Conclusion

8.1 Introduction

This study has examined the digital literacy practices of Saudi female students in order to contribute to the debate in Saudi Arabia, discussed in Chapter 1, on the effect of digital media use on language, social relationships, and identity. Previous studies on digital media use in Saudi Arabia have focused on the linguistic aspects of media use, such as the types of language used (Abu Elhija, 2014) and code-switching (Al-Qahtani, 2014); on social factors such as its effect on family and social relationships (Alolyan, 2015); and on identity construction and social capital (Alsaggaf, 2015). However, they have not looked at how the use of different codes and modes is linked to the participants 'doing, relating and being' at the level of concrete social actions. This study fills this gap, helping us to understand the relationships between linguistic, social, and cultural aspects of the issue. This study has adopted a sociocultural approach to digitally mediated communication which considers the social practices and actions in which language is embedded as the starting point of analysis. The focus on social action and practices in this study is achieved through a theoretical framework which integrates new literacy studies, multimodal discourse analysis and mediated discourse analysis – three approaches to discourse that share an orientation toward social actions. The data collection process combined questionnaires (to examine what the participants think they do), electronic literacy logs (to track their actual activity over a period of several days) and authentic samples of their online interactions (to investigate what they are actually doing online). A descriptive quantitative analysis was conducted first, followed by a coding of samples following a grounded theory approach to allow the data to speak, free from any predefined categories. This was then followed by an in-depth qualitative analysis of selected samples, in order to reveal the motivation, links, and relations between language use (including choice of code and mode), social identities and relationships using a model based on a nexus analysis (Scollon & Scollon, 2004). The model was designed to understand the links between social action and digital practices and broader concepts related to identity and culture. This chapter presents the main findings, contributions, recommendations and limitations of the current study.

8.2 Key Findings

The empirical findings of this study are based on the quantitative analysis of questionnaires, literacy logs and the coding of the participants' samples of online interaction and from the qualitative analysis of selected examples as explained in Chapters 5, 6 and 7. The following are the main findings:

1. The participants' interactions are *translingual,* in other words, they demonstrate flexibility in the use of different kinds of codes and modes.

2. The participants *adapt* different tools *creatively* to resolve *tensions* between the affordances of the tools and the kinds of meanings participants wish to convey and which are appropriate to the sociocultural setting. These tensions are created from the intersection of several factors.

3. There is *a nexus* of intentions, tools, relationships and culture that takes place when participants are involved in a social action. This nexus explains the participants' translingual practices and how the appropriation of different codes and modes is used to resolve tensions to cope with their simultaneous participation in different *discourse systems*.

8.3 Discussion

The following subheadings discuss the main findings which answer the research questions. The study set out to answer the following research questions:

1. What are the digital social literacy practices of young Saudi female students?

2. How do young female Saudis use different semiotic resources in WhatsApp and Snapchat to accomplish particular social actions, enact particular kinds of social identities, and form and maintain particular kinds of social relationships?

3. How can these actions, identities and relationships be understood in terms of the sociocultural context in which these young women find themselves?

The aims of the study were:

1. To explore young Saudi women's online practices;

2. To investigate how the participants use resources from languages and technology to accomplish various purposes and actions;

3. To explore how young Saudi women develop vernacular digital literacies; and

4. To examine how these literacies are used as tools for enacting situated and cultural identities.

In the following sections I elaborate on the main findings.

8.3.1 Translingual interactions

This section discusses how the question, '*What are the digital social literacy practices of young Saudi female students?*' was answered.

The digital practices of the participants can be characterized as *translingual* (Baker, 2011; García, 2011; Hafner et al., 2015). The analysis shows that the participants were not simply switching from one code to another or from one mode to another; rather, they were involved in fluid language practices embedded in social relationships (García & Leiva, 2014). The digital practices of the participants of this study can also be described as *heteroglossic* as opposed to multilingual. Multilingualism focuses on the separation and distinction between languages, whereas heteroglossia stresses the interrelation between languages (Bakhtin, 1981; Hafner et al., 2015; Piccardo, 2013). This practice-oriented perspective rejects the monolingual view of language. This understanding of language use, or language *in use,* in this study has grown from a realization that the tools based on pragmatics (Myers-Scotton, 1993b) and conversation analysis (Auer, 1999) used in the examination of code switching in offline contexts are not sufficient to explain the participants' language use in the context of mediated social actions that take place at the intersection of technologies, relationships and cultures.

In Chapter 5, the descriptive analysis of the questionnaire, literacy log, and the coding of the data provided a way of describing what participants were doing within the more conventional frameworks of multilingualism and code switching. This kind of analysis results in conclusions that conform to conventional expectations about situational code switching. Participants code switched between English, Arabish and Arabicized English as indicated in the collective results from all data sets including the questionnaire, electronic literacy logs and the qualitative analysis of their online interactions in Chapter 5. Arabic was found to be the most used variety whereas Arabish was the least used. The findings also indicate that participants not only mixed codes but also modes; the participants used a variety of modes including images, videos

and audio voice notes in their WhatsApp chats. In Snapchat, 11 different patterns of different combinations of modes were used, as illustrated in Table 5.21 in Chapter 5. These findings are in line with Androutsopoulos (2015), who also found that the students' networked multilingual practices on Facebook to be based on wide repertoires. These findings indicating the use of different languages by young Arabs online are not surprising. Other studies in the literature have also identified the use of different languages by Arabs in their online interactions. What this study adds to previous literature on Arabs' digital communication is the finding that there is *no single or unitary language variety* (or Arab 'Netspeak') used online by Arabs, nor are there universally predictable patterns of code mixing as argued in previous studies (Al-Khatib & Sabbah, 2008; Darwish, 2013; Palfreyman & Khalil, 2003; Warschauer et al., 2002). The current study shows that there is no single e.Arabic, Arabish or Arabizi used online by Saudis or Arabs in general (Daoudi, 2011; Darwish, 2013; Yaghan, 2008). In fact, Arabish was the *least used* variety in the participants' interactions. This finding is similar to other studies done in different contexts revealing that very few forms of 'Netspeak' are found in actual data (Baron, 2004; Tagliamonte & Denis, 2008). The findings of this study challenge the generalizability of findings in other studies indicating the prevalence of Arabish in their data (Bianchi, 2013b; Palfreyman & Khalil, 2003). The type of platform and the selection of data affected the data examined in these previous studies. In Palfreyman and Khalil (2003), for example, the data consisted of selected samples containing Arabish exchanged between friends in a synchronous chat platform and was collected at that particular time in history when Arabic keyboards had only recently been introduced. The current study also contradicts the belief that Arabish is widely used among particular social and age groups despite the availability of the Arabic keyboard (Allehaiby, 2013; Yaghan, 2008). While this may have been true in the past, the findings of this study suggest that the use of Arabish in online communication is decreasing. This phenomenon of a language variety going from being one that is widely used to one that is less used is in line with the observations of Hafner and his colleagues (Hafner et al., 2015) on multilingualism as a continuum. While the excessive use of Arabish in digitally mediated communication may have been common around 10 years ago in Saudi Arabia, when there was a technical constraint over the use of Arabic script, since the introduction of the Arabic keyboard, the use of Arabish has clearly decreased.

8. DISCUSSION AND CONCLUSIONS

The study also found that there is an empirical link between code, topic and type of recipient. As indicated in Chapter 5, certain languages were used with certain people such as Arabish and English being used mostly with friends; some topics were discussed using certain languages such as school matters in English and condolences in Arabic. Other studies have also found a link between language choice and social functions (Habbash & Troudi, 2015; Palfreyman & Khalil, 2003; Xie, 2008). Palfreyman and Khalil (2003) found that Arabic was used in traditional formulaic phrases whereas English was used in school matters, a finding that is similar to the finding in my study. Similarly, Habbash and Troudi (2015) found that Saudi students used English in academic subjects in order to interact globally with native speakers of English. However, the current study is incongruent with the conclusions from Habbash and Troudi (2015) indicating that Saudi participants used English only to interact with Americans, and that English was not used to serve their local interests. In the current study, English was used by the participants, all of whom are Saudis and speak Arabic as their first language. Studies in other contexts that are in line with this finding include Hafner et al. (2015), who found in their study of the online practices of Chinese in project-based learning that English was used to organize an out-of-class English project because it is the medium of instruction and Li (2011), who found that intra sentential code switching among young Chinese Internet users is an indication of the effect of English-medium teaching. In my study, participants, who were also studying largely in the medium of English, used mostly English in topics such as school matters, while their L1 was used when they were not discussing school matters. However, topic and recipient were not the only motivation for the language choice evident in the data. For example, participants often shifted codes and modes when interacting with the same interlocutor or discussing the same topic.

In order to understand why this occurred, a close analysis of selected interactions was conducted. The analysis found that choices were not only linked to situational constraints, such as the type of person with whom the participant was interacting and nor did code switching simply function as a contextualization cue (Blom & Gumperz, 2000; Gumperz, 1992). The variety of code choice could also not simply be explained in terms of the micro-context of conversational turns (Auer, 1999). In order to understand the way the participants used different semiotic resources, including different codes and modes, it is necessary to examine how they were able to use

technology in new ways in order to claim membership in cultural groups, enact social identities and manage social relationships. In particular, these conventional tools (Auer, 1999; Blom & Gumperz, 2000; Gumperz, 1992) do not account for *simultaneity* in code and mode use in Snapchat. In order to understand the whole sociocultural context, it is necessary to consider how participants' translingual practices constitute acts of creativity in which they are actually constructing the contexts, situations and cultures within which they are communicating. It is not only the tools and the cultures that make them available that create what and how people do things; people *create* cultures through the way they do things using different tools (García & Wei, 2014). These Saudi women are not only using tools to do particular actions, but also to create new forms of cultural identity. The participants show their creativity in opening up spaces not only to enact identities as Saudis or students or women but also to create a more complex cultural identity in which they are able to occupy multiple worlds simultaneously (Scollon & Scollon, 2004; Scollon et al., 2012).

By understanding language use through the lenses of translanguaging and mediated discourse analysis, the analysis accounts for the fluidity, creativity and complexity of that moment-by-moment construction of cultural identity. Translanguaging is not just a matter of mixing multilingualism and multimodality; it has to do with the availability of multiple resources within particular situations in a society. Translanguaging involves higher order techniques involving creativity in combining and modifying different systems (as seen in several instances of appropriation in the data such as the use of 'سلامك ing' in WhatsApp, and the use of the hand-sketch feature to code switch in Snapchat). It is in fact an indication of a kind of competence as explained by Coste et al. (2009, p. 12) as follows:

> This also means that the development of plurilingual and pluricultural competence promotes the emergence of linguistic awareness, and even of metacognitive strategies, which enable the social actor to become aware of and to control his own "spontaneous" ways of handling tasks and, in particular, their linguistic dimension. In addition, this experience of plurilingualism and pluriculturalism: - exploits pre-existing sociolinguistic and pragmatic components in communicative competence, but makes them more complex in return … -by its nature, [it] refines knowledge of how to learn, and the capacity to form relations with others and to deal with new situations.

The above quotation reveals the complexity of translanguaging by drawing links between translingual practices, and linguistic, social and cultural competence. Explaining language use in this study in terms of intersecting elements is in line with the conclusions of Androutsopoulos (2015) and Hafner et al. (2015), who concluded that the heteroglossic practices of their participants were utilized to achieve easy access to meaning, manage relationships, project identities and use context-specific code choice in different situations.

8.3.2 Resolving tensions

The second research question was:

'*How do young female Saudis use different semiotic resources in WhatsApp and Snapchat to accomplish particular social actions, enact particular kinds of social identities, and form and maintain particular kinds of social relationships*?'

The study found that participants used different semiotic tools to resolve *tensions* between what tools enable them to do and what meanings they want to communicate to *strategically* accomplish actions, manage relationships, and enact identities. This use of tools involves fluidity, appropriation and creativity, as seen in the examples in Chapters 6 and 7. One important finding in this study is that tools can change the way participants interact and that the participants can change tools through their interactions. Because tools have their own affordances and constraints that affect how participants interact, a kind of tension emerges between what the participants can do with tools and what they really want to do. Participants try to solve these tensions by creatively adapting tools to serve their interactional goals.

The original source of all types of tensions emerges from the idea that different tools, semiotic and technical, have different affordances and constraints. The first type is a kind of tension between tools and actions. In the 'buying shoes' example (6.3), Mona switched between a number of modes, i.e. images, texts and voice notes, to accomplish an action. The second type of tension that the use of hybrid and creative tools try to resolve is between tools and relationships. The data shows that participants used emojis and funny word like "velcom" to show solidarity, for example, and manage a kind of relationship by invoking particular frames and faces systems in an interaction. The third type of tension the data reveals is between tools and identity/culture. Participants sometimes use hybrid tools such as the word "inshallah" in Chapter 6 or the

'half-selfie' snap in Chapter 7 to participate in two different discourse systems at the same time. These three types of tensions are interrelated and should not be viewed separately.

The data shows that one way to resolve tensions between affordances of tools and the participants' interactional goals is through translanguaging. Fluidity and hybridity in the participants' use of tools can be seen in the strategic mixing and combining of tools so that the affordances of one tool counteract the constraints of another. Code and mode switching and mixing are used to supplement *typological* with *topological* meaning, to integrate different meaning potentials from different affordances as when an image was used with texts and auditory with the visual in the 'buying shoes' example in Chapter 6. The analysis emphasizes that code mixing occurred more in interactions with friends not family. This "interplay of fluidity and fixity" of multilingualism showing that "multilingual practice includes many monolingual moments, which result from their situated orientation to particular addressees or topics" is in line with the results of Androutsopoulos (2015, p. 201) who examined networked multilingualism on Facebook.

The participants were not only interacting with the affordances and constraints of tools but also the *organization* of these tools. The organization of tools includes how these tools are presented, and under what type of logic. In WhatsApp, the participants organized codes and modes sequentially whereas in Snapchat codes and modes were mixed simultaneously. Sequentiality and simultaneity can be seen as communicative tools in the participants' multimodal interactions. The contrast between the *temporal vs spatial* logic is emphasized in the contrast between how WhatsApp and Snapchat actually work and how participants make meaning through the logic of time and space, respectively. For example, the participants discussed school presentations (the same topic) in both WhatsApp and Snapchat, but the way modes and codes were organized and perceived was different. However, the controlling logic of time in WhatsApp and space in Snapchat should not be understood as a matter of technological determinism. There are instances in Snapchat for example where the participants attempted to twist the spatial logic to incorporate a temporal one and others where sequentiality and narrativity were exploited as communicative resources.

The participants also showed *creativity* in the way they used tools to overcome these tensions. The participants were creative in twisting, appropriating and adapting

tools to achieve communicative goals and solve this kind of tension created from the affordances and constraints of these tools and meaning. Affordances affect the way which actions are accomplished and how relationships are managed. The affordances of WhatsApp and Snapchat as seen in the data amplified some actions and constrained some. Examples of appropriation includes 'half selfies' to account for cultural norms, use of Arabish for less effort and engagement in several cultural worlds and 'muting space' in Snapchat to focus on text. The ways in which the participants used tools reveal that tools are influential, not deterministic of action, as claimed by Yates (1996) and Ko (1996), for example. This study supports the dynamic view of the relationship between tools and people. This finding supports the idea that tools shaped the participants' interactions and participants shaped the tools is in line with Barton and Lee (2013), Jones and Hafner (2012), Lee (2015) and Jones et al. (2015). These findings emphasize the complexity of interactions in which people, tools and cultures intersect.

8.3.3 The nexus

'*How can these actions, identities and relationships be understood in terms of the sociocultural context in which these young women find themselves?*'

The analysis of data shows that to address the third research question, '*how can these actions, identities and relationships be understood in terms of the sociocultural context in which these young women find themselves?*', - an examination of actions, identities and relationships needs to consider how these aspects intersect at particular moments of interaction in order to reflect participants' participation in different discourse systems. The implementation of the *nexus* model in the analysis of the participants' interactions contributes to a better understanding of the sociocultural context in which the participants find themselves. The nexus examines what cultural tools, relationships and histories are brought into situations to make particular social actions possible. These tools, relationships and histories are linked to broader social worlds. Seeing social interaction as taking place at a *nexus of practice* helps to explain translingual and multimodal practices and, at the same time, situate these practices within the participants' broader *discourse systems*.

Discourse systems are considered "toolkits" that consist of the forms of discourse and technological tools that are available to people in particular groups, the

kinds of face systems and strategies that they use, the ideologies they adhere to and the practices they have for socializing new members into the discourse systems (Scollon et al., 2012). The participants drew on these toolkits depending on the different situations which they were in. When discussing a school project with a friend, the participants appropriated different tools to manage the intersection between different discourse systems. In interactions with sisters, tools are used differently to manage their positioning in different discourse systems. The way the participants manage the intersection between discourse systems through translanguaging reveals a lot about the tensions found between tools, relationships and discourse systems. To better understand these tensions, the study aimed at analyzing language use as a heteroglossic unit. Participants' use of Arabish in the middle of English - as in "Inshallah" and "tasleek" or twisting the practice of taking selfies to create the local 'half selfies' are different ways to resolve the tension found between two different discourse systems.

In other words, what the participants are actually doing when translanguaging and mode shifting/mixing, then, is resolving tensions created not just between the resources provided to them and the actions that they want to accomplish with them, but also among the overlapping 'worlds' or *discourse systems* in which they want to participate. García (2011) shows that when participants are engaged in translanguaging, they are trying to make sense of 'bilingual worlds'. The 'bilingual worlds', such as Arabic and English or local and global, are expanded to become translingual spaces that encompass social as well as spatial aspects. These spaces are not static but rather overlapping, and the audience with which the participants are interacting with in these different worlds is different.

Using Arabic, for example, is a way of positioning the participants in the Arab world. The use of English facilitates the participation in a discourse system that the use of Arabic might constrain. Similarly, the use of particular apps like Snapchat positions users within particular technological or consumer cultures. When participants appropriate different codes and modes, they are identifying with the histories of these cultural tools and at the same time adapting these tools in different and sometimes creative ways to cope with their participation in different *discourse systems*. The use of Arabicized English in the middle of an Arabic sentence is a means not only to bring the English and the Arabic worlds together but also to position the participant in these worlds simultaneously. These discourse systems are brought together at a *site of*

engagement in which social spaces and physical ones intersect. In Snapchat, for example, space is used as a communicative tool to index different discourse systems. The example of 'half a selfie' locates the participant in her physical worlds and at the same time in two different social worlds. The use of one tool to participate in two different discourse systems resolves a tension that was created by appropriation of that tool. It is not only the affordances and constraints of tools that affect how actions are accomplished but also how participants adapt these tools to serve their goals. This relationship between tools and social practices requires an investigation of the historical body and interaction orders, and ideologies relevant to the use of these tools. The link between tools and discourse systems is made through histories of people and histories of tools.

Similarly, different discourse systems have different conventions for managing interpersonal relationships or 'face relationships' (Scollon et al., 2012), which can also contribute to explaining the ways in which the participants use different codes and modes. When participants are interacting with friends, for example, they used the kind of playful language and shared codes associated with egalitarian face systems, as in the use of "Fanx" and "Velcom". When another topic enters the interaction, such as death or family matters, local Saudi words and expressions more characteristic of negative face strategies were used. In many instances, the participants respond to each other by replying with the same special code or mode as can be seen in example 6.1 (Inshallah) and example 6.2 ("Thats how i read it" and "That i how i said it"). These examples show that the participants are not only using these codes to align with their interlocutors, but also to align with a particular discourse system.

By using mediational means to accomplish actions and manage relationships, the participants are showing membership in particular discourse systems and at the same time, are imputing membership on to those with whom they are communicating. One of the main functions of discourse systems is "to give a sense of identity to its participants" (Scollon et al., 2012, p. 268). The sense of belonging to a discourse system can be seen in the way the participants feel comfortable while communicating with other members of that discourse system, as seen when Sarah and Deema used the Arabish word "Inshallah". The findings that link language choice to identity are in line with other studies in the literature (Le Page & Tabouret-Keller, 1985; Norton, 2013). Among the studies that examine Arabs' online interaction is Bianchi (2013b); this study

acknowledged the use of three different languages, Arabic, English and Arabish, and explained their use in relation to portrayals of ideology and identity. Interactions are far from simple, and cannot be explained merely in terms of topic or recipient, because they involve individual experiences on dealing with other people and different tools and decisions to be made on where to locate the self and the other in different social spaces.

What this study found is that translingual interactions are not only situated in social spaces, but also in *physical spaces*. Implementing a mediated discourse analysis approach in the examination of translanguaging expands the idea of translingual social spaces to include translingual physical spaces. The analysis shows that participants used space as a communicative tool in Snapchat. Translingual practices in the "Salmon Heaven" example, for instance, cannot be understood without considering the overlapping physical spaces involved, including the tables, plates, chairs, and their arrangement in the physical space of the restaurant, as well as the screen space of the author's smart phone, and the physical spaces into which this image is transmitted and the author's relationships with the social actors inhabiting those spaces.

The way the participants display a range of translingual practices indicates that social and cultural features of people are not fixed in time or space (Blommaert, 2016). The findings of this study support the idea of *mobility* and *crossing* in sociolinguistics which rejects the horizontal distribution of languages over time and space (Blommaert, 2016; Blommaert & Dong, 2007; Rampton, 2014). The analysis shows that people and places are not fixed but rather that there are multiple audiences and multiple places with which the participants are interacting. Several tensions arise as a result of interacting with multiple audiences and participating in different worlds.

The analysis shows that language use is affected by the number of social worlds in which the participants are engaging and by how similar or different they are. Scollon et al. (2012) explained this kind of complexity in interaction as an issue of intercultural communication. The current study can also be viewed as an intercultural one; although it might seem that the participants all belong to one culture, the analysis shows that there are several discourse systems interacting here. There are the discourse systems of Saudis, women, university students, English department and institutional discourse systems, and discourse systems associated with digital media and globalization. This conclusion is in line with Scollon et al. (2012, p. 2) who indicated that:

> There is nothing at all unusual about this situation. In fact, all situations involve communication between people who, rather than belonging to only one culture, belong to a whole lot of different cultures at the same time. Some of these cultures they share with the people they are talking to, and some of them they do not. And some of these cultural differences and similarities will affect the way they communicate, and some of them will be totally irrelevant… All communication is to some degree intercultural.

8.3.4 Social worlds: a macro view

To really understand what the participants are actually doing when they interact online, it is essential to examine how language use indexes the participants' *being* as female Saudi students. To situate an interaction in its cultural frame, an understanding of the integration of the three factors discussed above within the larger cultural framework is necessary. Looking at the data on a macro level raises the following question: how do the participants locate themselves in their various worlds? When participants mode and code switch in interactions, they are not only changing how meaning is made but also inviting each other into their different and overlapping worlds which include the female, Saudi, university, digital and global worlds.

Participants locate themselves in the *world of females* by the kind of topics discussed (shopping, children, cooking, women's rights), the extensive use of emojis (Baron, 2004; Witmer & Katzman, 1997; Wolf, 2000), the online groups they belong to (aunties, sisters, beauties). However, there is another culture-specific exclusive world of females unique to Saudi culture; this is a 'female only' world that results from the segregation of genders in schools, universities and most work arenas. Another local world the participants locate themselves within is *Saudi culture* more generally. Arabic is the dominant language used in the participants' interactions. Using Arabic almost all the time with family members and relatives and with topics of religion, life and death locates the participants in their local and physical worlds. This physical place is indexed not only through language choices but also through the selection of audience. The fact that in all the dyadic and group chats, there is no interaction with males except for first-degree relatives such as fathers, brothers and uncles specifically locates the participants in a gender-segregated culture. Because WhatsApp is a private platform, male-female private interaction is not culturally acceptable unlike interactions on other public platforms such as Twitter. Another prominent feature in the data is the occurrence of many groups of relatives with a lot of phatic interaction: keeping in touch with relatives

(uncles, aunties, cousins) on a regular basis is culturally and religiously encouraged, hence the creation of these groups that allow for gatherings and keeps members in touch.

The participants not only locate themselves in the worlds of femininity and Arabs but also in the *university world*. Almost all participants belong to one or more groups of different academic interests, such as project groups and specific course groups, in which members meet for functional, not relational, purposes. Belonging to the English department is another important community, which allows for connections to other global worlds and cultures. Forming several communities of practice, the participants display identities belonging to Western culture. As participants interact using a variety of languages, such as Arabic, English and Arabish, and discuss local as well as international topics, they are negotiating different identities in addition to the accomplishment of their academic goals.

The participants in this study also belong to the global worlds of English, the Internet and social media. The participants are English department students who use English daily offline as well as online. The use of English on social media is just one cultural tool that links the participants to other global worlds, including digital media worlds. The participants' use of different platforms on a daily basis to achieve important and necessary social actions conforms to the way these platforms are used globally. Because the participants in this study have been engaged in digital practices in Saudi Arabia, the way they use language, including codes and modes, manage relationships and accomplish action is affected partly by global as well as local worlds. These worlds have different norms and cultural values that might not be congruent with the norms and values of other worlds. Part of managing these different worlds can be seen in the participants' translingual practices. The participants' choice of codes and modes strategically positions them in multiple worlds and at the same time resolve tensions emerging from participating in these worlds.

8.4 Contributions, limitations and recommendations for future studies

This study contributes to the debate in Saudi Arabia on the effect of social media on young Saudis' use of language, social relationships and cultural identities. It is important to note that claims in Saudi Arabia about the negative impact of digitally

mediated communication on language, identity and relationships come from the media whereas the ones that highlight a positive effect, such as the current study, are empirical academic studies as illustrated in the Introduction. This study concluded that there is no single variety or e.Arabic used online and that the 'feared' and 'harmful' Arabish is the variety least used by the participants who used different linguistic varieties when they interact online. The participants are not giving up their Arabic or Saudi identity but accumulating a new set of identities that stand beside their Arabic one. As seen in the data, when the action becomes one related to their traditional culture, Arabic was used. The participants used different social media platforms to accomplish different types of everyday actions using discourses of everyday practices and discourses of digital practices which are different from those relevant to classrooms or academic contexts.

The findings of this study are the result of triangulation and the use of a variety of tools for data collection and analysis: questionnaires were used to examine what the participants *think* they do online, the electronic literacy logs were used to *track* each participant's activity for a period of time and the collection of authentic samples of WhatsApp and Snapchat was used to qualitatively *analyze* their language use. The analysis of data collected moves from a descriptive analysis to a more in-depth qualitative one to parallel the departure from traditional investigation of language to more recent theories that examine language in use. The use of Electronic Literacy Log and the use of tutorial videos to give instructions are particular innovations of this study. Although the use of diaries is not new, the use of an electronic form that fed into a database is original. The data of this study is considered authentic and rich. These types of data are not only hard to get but are situated in a special culture that practices gender segregation and at the same time ranks high in social media use. This special context provides starting points for sociolinguists who are interested in gendered discourse. Although this type of data makes it difficult to make generalizations about digital practices and language use on social media, the theoretical model designed to analyze this data can be applied in other contexts.

The study develops a model that is holistic and flexible. It is holistic because it combines theoretical frameworks that bring together social and linguistic aspects in order to understand people's interaction within a nexus of practices. This rejection of the monolingual view of language can be seen in the embrace of theories from mediated discourse analysis and translanguaging. The model is also considered flexible because

although the study examines language use in a specific context, it demonstrates how translanguaging can be examined through tools from mediated discourse analysis which can be applied in other studies. The model is also flexible because new affordances can be incorporated and examined through semiotic and non-semiotic analysis. This flexibility allowed for the analysis of space as a new communicative resource. This spatial aspect is examined with the help of theories from geosemiotics which is usually used to examine discourse in place but which is incorporated in this study to examine *mediated space* in social media. The examination of data from Snapchat in this study provides sociolinguists with insights into Snapchat as a new platform. This is the first study that examines Snapchat samples within a sociocultural framework. However, the study faced several challenges in relation to the collection and analysis of Snapchat and WhatsApp.

This study has the limitation of many small qualitative studies that examine interaction on social media. Because the study aimed for the collection of naturalistic data that include everyday interactions that do not involve the presence of the researcher, the data was selected by the participants. The private nature of the two apps, WhatsApp and Snapchat, added constraints over access. The decisions made on how and what to collect were subjective. The participants selected the WhatsApp chats that were sent to the researcher and the researcher had access to snaps from Snapchat stories but not the private one-to one snaps. Even the collection of Snapchat data from 'My Story' was a challenge; due to Snapchat's self-destructive nature, snaps disappear after 24 hours which required the researcher to collect snaps as soon as they were posted. Another limitation acknowledged in the WhatsApp collected samples is that they did not include the actual audio, videos and images. This limitation can be justified in relation to ethical and technical reasons, as explained in the methodology chapter. Although this is acknowledged as a limitation in the data, the data collected is, nonetheless, considered rich in itself. In fact, the collected chats, as explained in Chapter 4, indicate where the multimodal turn occurred and the type of mode used. When analyzing examples with missing multimedia, one attempt to compensate for this limitation was to examine the surrounding text in order to make sense of what the missing media was used for. These limitations can be addressed in future studies.

On the bases of the limitations and contributions of this study, there are several suggestions for further research. Future studies can address these limitations related to

decisions to be made on data collection and analysis of samples from social media platforms. Due to the evolving nature of technology, it is important to investigate new affordances, and how they affect practices and, at the same time, how people appropriate these new affordances are, to conform to their social and cultural aims. There are new affordances in the recent updates of the two applications, Snapchat and WhatsApp: WhatsApp has added a new feature that is similar to the Snapchat story (not popular yet) while Snapchat allowed, in recent versions, the exchange of snaps from stories. These require some investigation of language use and migrating digital practices between different platforms. The study recommends further research on the affordance of space and how it is used in Snapchat or other applications as a communicative tool. Recent affordances in Snapchat including location features such as place filters and sharing snaps based on geographical locations, which are relevant to the investigation of geosemiotics. The theoretical framework can be applied to different cultural contexts. The study recommends the investigation of the use of space as a communicative tool in a cross-cultural study. Other recommendations include the examination of the digital practices of young Saudi *males* on WhatsApp and Snapchat in order to compare how they utilize semiotic and technological resources within the nexus of actions, identities and relationships with the findings of this study.

By looking at the data through the lens of mediated discourse analysis, I have also gained a new perspective on my own positioning as a researcher, as a Saudi woman, and as a teacher in a Saudi university. By examining the digital practices of my students, I have gained insights that can be applied to teaching as well as participating in social media. This study is a journey that started with a pedagogic concern about language use and ended with an appreciation of the nexus of worlds, relationships, histories, and cultures that unfolds in the day-to-day digital interactions among my students.

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Appendices

Appendix 1: Computer-mediated discourse—Survey By Michelle Drouin

Please answer the following questions ON THE FRONT AND BACK OF THIS SHEET as accurately as possible by filling in the blanks or circling the appropriate answer. Any additional comments or further explanation can be written in at the end of this survey.

General Information

1. Age:_____
2. Gender: M   F
3. Estimated GPA:_____

Computer Mediated Discourse Information

4. How often do you access Facebook?   OR   I do not have Facebook _____

1	2	3	4	5	6
Never	Very Rarely	Rarely	Occasionally	Frequently	Very frequently

5. How often do you send text SMS messages? OR   I do not have a cell phone_____
   (if you do not have a cell phone, please proceed to question 8).

1	2	3	4	5	6
Never	Very Rarely	Rarely	Occasionally	Frequently	Very frequently

6. How often do use your cell phone to make voice calls?

1	2	3	4	5	6
Never	Very Rarely	Rarely	Occasionally	Frequently	Very frequently

7. How often do you use abbreviated text, (e.g. "u" for "you") in place of standard English in SMS?

1	2	3	4	5	6
Never	Very Rarely	Rarely	Occasionally	Frequently	Very frequently

8. How often do you use abbreviated text (e.g. "u" for "you") in place of standard English in Facebook?

1	2	3	4	5	6

Never   Very Rarely   Rarely   Occasionally   Frequently   Very frequently

9. How often do you use abbreviated text (e.g. "u" for "you") in place of standard English in emails to friends?

| 1 | 2 | 3 | 4 | 5 | 6 |

Never   Very Rarely   Rarely   Occasionally   Frequently   Very frequently

10. How often do you use abbreviated text (e.g. "u" for "you") in place of standard English in emails to instructors?

| 1 | 2 | 3 | 4 | 5 | 6 |

Never   Very Rarely   Rarely   Occasionally   Frequently   Very frequently

Please indicate your agreement with the following sentences (from 0 = strongly disagree to 5 = strongly agree).

11. I use my cell phone more for voice calls than for texting (SMS).

12. I prefer SMS texting over making voice calls.

13. I use "text speak" (e.g. "u" for "you" or "2" for "to").

14. I think it is appropriate to use text speak in emails to instructors.

15. I think it is appropriate to use text speak in communication with friends.

16. I think that using text speak regularly makes it more difficult for me to remember how to spell in standard English, (e.g. it is more difficult to remember when it is appropriate to use "to" or "too" instead of "2").

17. I think that using text speak helps me to remember standard English spellings.

18. I find it difficult to switch back and forth between text speak and standard English.

19. I think that using text speak often may hinder my ability to remember how to spell in standard English.

20. I find it easy to switch back and forth between text speak and standard English.

N/A = not applicable or do not have an opinion

Appendix 2: DMC Questionnaire: literacy practices

الاسم: **الرقم الجامعي:**

> *By completing and returning this questionnaire I understand that I am giving consent for my responses to be used for the purposes of this research project.*
>
> بتعبئة واعادة هذا الاستبيان اكون قد وافقت على استخدام اجاباتي في هذا المشروع البحثي.

A Questionnaire on the Digital Practices of Saudi University Female Students and the Impact on their Writing

Dear participant,

Thank you for taking part in this questionnaire as part of a research project. This project aims at examining the digital practices of Saudi university students and instructors and the impact of their digital communication on writing in the university context.

Areej Albawardi

Please answer the following questions as accurately as possible by filling in the blanks, circling or ticking the answer.

1. Age: ◯ 18- 25   ◯ 26-30   ◯ 30+

2. Year study: ◯ 1   ◯ 2   ◯ 3   ◯ 4   ◯ 5

3. GPA: …………..

4. Nationality: ◯ Saudi   ◯ Other (please specify) ……………

5. First Language: ◯ Arabic   ◯ Other (please specify) ……………

6. How long have you owned a mobile phone (in years)? :
   ◯ 1-5   ◯ 6-10   ◯ 11-15   ◯ 16+

7. Do you use the predictive text feature when you text? This is when you type in the first letters of a word and your phone guesses what you want to say.
   ◯ Always   ◯ Sometimes   ◯ Never

8. Circle the apps/sites that you use:
   Email   - WhatsApp   - Instagram   - Snapchat   - Kik   - BBM

   Tumblr   -Skype   - Ask   - Keek   -Twitter   - Path   - Tango   - Other

(please list all):

………………………………………………………………………………………………

9. Why do you use each application/site. Tick the two most common reasons in the table below.

Why do you use….? (Tick 2 reasons)	For entertainment	For keeping in touch with people	To give information	To take information
WhatsApp				
Instagram				
Snapchat				
Twitter				
Facebook				
SMS				
Email				

Tick the answer that represents your practice in Arabic, English or both.

	1. Several times a day	2. Three to seven times a week	3. Once a week	4. Once a month	5. Never
10. How often do you use (read and write) Facebook?					
11. How often do you use (read and write) Twitter?					
12. How often do you use (read and write) WhatsApp?					
13. How often do you use (read and write) Instagram?					
14. How often do you send text SMS messages?					
15. How often do use your cell phone to make voice calls (normal every					

day calls)?					
16. How often do you share messages, texts or posts through social networks and apps with friends?					
17. How often do you share messages, texts or posts through social networks and apps with relatives?					
18. How often do you share messages, texts or posts through social networks and apps with instructors?					
19. In face-to-face gatherings outside your classroom, how often do you take part in English conversations?					
	1.Always	2.Often	3.Sometimes	4.Rarely	5.Never
20. How often do you use abbreviated text, (e.g. "u" for "you") in Facebook?					
21. How often do you use abbreviated text, (e.g. "u" for "you") in Twitter?					
22. How often do you use abbreviated text (e.g. "u" for "you") in WhatsApp?					
23. How often do you use abbreviated text (e.g. "u" for "you") in Instagram?					
24. How often do you use abbreviated text (e.g. "u" for "you") in SMS messages?					
25. How often do you use smilies/emoticons (e.g.☺) when you communicate					

online?					
26. How often do you use Arabic when you communicate online?					
27. How often do you use English when you communicate online?					
28. How often do you use Romanized Arabic (kaif 7alik) when you communicate online?					
29. How often do you use English with Arabic letters (سي يو) when you communicate online?					
30. How often do you use informal Arabic (بكرا, وشلون) when you communicate online?					
31. How often do you use colloquial Arabic when you communicate online? (لهجتك, مثال: عليج, حقي/مالي,اخوتس,شنطتش)					
32. How often do you use abbreviated text (e.g. "u" for "you") when you communicate online with friends?					
33. How often do you use abbreviated text (e.g. "u" for "you") when you communicate online with instructors?					

Thank you

Appendix 3: Pre-piloting question

The following question was sent via WhatsApp on 28-11-2014:

"What social networks and applications do you use and in what language?"

Partici pant	Language		Networks and Applications											
	Arab ic	Engli sh	Whats App	Insta gram	Snap chat	Kik	BB M	Tum blr	Skyp e	ask	Keek	Tw itte r	Pat h	Ta ng o
1	yes	-	yes	yes	Yes	yes								
2	yes	yes	yes	yes	Yes	yes	yes	yes	yes	yes	yes			
3	yes	yes	yes											
4	yes	-		yes						yes		yes		
5	yes	yes	"all what you can think of"											
6	?	?	yes	yes	Yes	?			yes		?	yes	yes	yes
7	yes		yes			?	yes				?			
8	yes		yes		Yes		yes							
9	yes		yes	yes			yes			yes				
10	yes		yes											
11	yes		yes		Yes		yes							
12	?	?	yes	yes	Yes									
13	yes		yes	yes	Yes		yes							
14	yes	yes		yes	Yes								yes	
15	yes	yes	yes											
16	yes	yes						yes				yes	yes	
17	NM	NM		yes								yes		
18	yes		yes	yes										
19	yes		yes	yes			yes					yes		
20	yes			yes								yes	yes	
21	yes			yes	Yes								yes	
Tot al	18	6	15	13	9	2	7	2	2	3	1	6	5	1

NM: not mentioned

? : Not sure what the participant meant. For example, the spelling of "Kik" and "Keek", in Arabic is the same.