



The Pedagogical Affordances of a Social Networking Site in Higher Education

Submitted by

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Abstract

In recent times, higher educational institutions have faced a challenge from the radical demands of their students. With the spread of students' use of Web 2.0 applications, educational institutions also need to move with this trend and adopt Web 2.0 applications in education. As a contribution to the field of innovation in higher education, this study explores the pedagogical affordances of a social networking site (SNS) in higher education in Saudi Arabia. A case study methodology informed by Design-Based Research DBR approach was used. This approach was characterized by iterations of design and evaluation. The study was applied in two phases: Phase One was applied in the University of Exeter to evaluate a previously designed course, "***The ICT Future***", with the innovation of a social networking site. The result of this phase was a framework which was applied in Phase Two, in King Saud University, which contributed to the design of an innovative course using social networking site, on "***Web design***".

The data were collected by mixed methods: using stimulated recall interviews, reflexive report, and observation of the interaction on the social networking site. The findings of the study were used to help revise the framework for the design of a course which utilised the social networking site. The framework developed in this study was based on the findings of the pedagogical affordances of the SNS.

The study concludes that the pedagogical affordances of the social networking sites are: reflection, stimulation, content-creation, collaboration, and online discussion. These affordances support students in higher education. Some important challenges in implementing the social networking site in higher education were highlighted. The

study presents the need to change pedagogical practices in universities, and discusses various ways in which these changes could be implemented.

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

Prophet Mohammed (Peace be upon him) said: *“He will not be thankful to Allah, he who would not be thankful to people”* (Corrected-Reported by Tirmethee).

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Definitions

Elgg	A leading open source social networking platform (Elgg.org). It provides the necessary functionality to allow the person to run his/her own social networking site.
ICDL	International Computer Driving License <i>"is an integrated digital literacy program recognised worldwide. The program empowers individuals with the essential skills and knowledge of computers and the practical use of common desktop applications. The program is based on a recognised global standard acknowledged through testing and proves that the certificate holder has fundamental skills in IT, using the computer and managing files, word processing, spreadsheet, database, presentation, and information and communication (Internet and e-mail). ICDL is endorsed by education ministries, universities and government organisations and it is accredited by more than 168 countries and is available in more than 40 languages."</i> (ICDL Saudi Arabia, 2008)
Jusur	Learning management system software created and owned by the National Centre for e-learning and distance learning.
NVivo	Software tool to analyse qualitatively.
SNS	Social network site; an application of Web 2.0; e.g. Facebook.
The Hive	A social network site created by Elgg.
Web 2.0	A platform for sharing content by groups of users using social software.

Web 2010 The group name in the Hive where Phase Two study was applied.

Abbreviations

DBRM	Design Based Research Methodology.
F2F	Face to Face.
ICDL	International Computer Driving License.
ICT	Information and Communications Technology.
KSU	King Saud University.
KAU	King Abdullah University.
KFU	King Fahad University.
KAU	King Abdulaziz University.
KSA	Kingdom of Saudi Arabia.
LMS	Learning Management system e.g. Web CT.
MoHE	Ministry of Higher Education.
NCel	The National Centre for e-learning and Distant learning.
SNSs	Social Networking Sites.

Chapter 1 : Introduction

1.1 Overview

Every day witnesses the importance of Web 2.0 applications and Social Networking Sites, (SNSs) particularly. These technologies have been used extensively in recent daily life for different purposes, economical, political and educational. We have also witnessed the power of Web 2.0 technologies, e.g. Facebook and Twitter, to change our way of interaction. A good example in the political arena is the Obama election campaign of 2008 where he used Facebook to support his election (Sharpe, Beetham, & Freitas, 2010; Shen & Khalifa, 2009). Another example is the Egyptian revolution of January 2011, in which Twitter and Facebook played a major part. Social network sites have been successfully used in the political arena; the users interact by sharing their political beliefs and supporting candidates (Vitak et al., 2011). In addition, in marketing many companies use Facebook as another advertising tool, e.g. Dell. In education, researchers and educators are seeking to use technology to improve pedagogy. In this regard, many educational institutions are making innovative use of social networking sites in pedagogy. Many universities use social networking with their students, such as the University of Exeter which, with careful consideration, implemented a social networking site called “The Hive” for MSc students at the beginning of 2008. This has subsequently been integrated into teaching undergraduate students. It has even been extended for use with high school students (e.g. St James’ School, Exeter, UK).

Many educational institutions have incorporated new technologies into pedagogical practice. As a result of the increased number of students, more and more institutions of higher learning are turning to distance education as a solution to their funding

problems. As this technology is enabling distance provision of higher education, much higher education funding is currently being directed towards the application of ICT. In recent years university spending on computer infrastructure has increased rapidly. Also many universities blend ICT applications with face-to-face pedagogy and students' independent study (Alebaikan, 2010). There are many successful examples of universities implementing Web 2.0 technologies in their teaching, which I will illustrate in Chapter 3. Consequently, in developed and developing countries alike, Web 2.0 technologies have become an important 21st century higher education provision (Selwyn, 2007). There is a pressure in higher education institutions to support modern economic needs with mass numbers of students and within limited budgets (Somekh, 2007). Similarly, this is the case in Saudi Arabia where there is an increasing demand for using ICT in higher education resulting from the growth of students' numbers, shortages of qualitative instructors, and high financial costs (coordinating certified programs, instructional methodologies, and production of learning materials...etc.) (NCeL, 2009). In addition, there has been a massive increase of social networking use in the Kingdom of Saudi Arabia, where 2.5 million Facebook users are younger Saudi as of August 2010, with a 10% penetration rate (Miniwatts Marketing Group, 2000).

While it is true that the new generation of students possessed a wide range of information and communication technology (ICT) skills at the start of their courses, much of their experience has been gained during their undergraduate studies or at home (Cuckle, Clarke, & Jenkins, 2000). Furthermore, most students have grown up surrounded with new technologies: having modern computers with advanced games (Wijekumar, Meyer, Wagoner, & Ferguson, 2006). Nearly every student in Saudi Arabia has a laptop or desktop computer from which they have acquired competence

in internet use (Internet Al Saudia, 2007). In this context, many institutions and practitioners have introduced Web 2.0 technology into higher education and it is strongly hoped that this will improve teaching and learning quality. Furthermore, ICT innovation in higher education has been a challenge to existing pedagogical practice. Somekh (2007) pointed out that some decisions would have to be made in order to use new technologies in higher education.

In Saudi Arabia, the Ministry of Higher Education has established a national plan for the utilisation of information technology (IT). The plan recommends establishing e-learning and distance learning in higher education. Moreover, a National Centre has been established to improve the educational process by means of applying technology, which will be used in administration as well as education (NCeL, 2009).

1.2 Background and Rationale

1.2.1 Digital Native students

During the recent decades, higher educational institutions have been faced with “digital natives”, whom Prensky (2001) defined as *"a generation that has grown up with digital technology, operating at “twitch speed”, and performing multiple activities simultaneously"* (Guo, Steven, Li, 2013. p.2). Prensky classifies digital natives, or the Net Generation, by their ability to deal with huge amounts of information with multimodal sources of information which are linked with hyperlinked. Digital natives are also described as multi-tasking users who can process information rapidly and simultaneously, for example listening and reading from the internet while writing notes (Brown, 2002 cited in Jaffer, 2010). Also the multi-tasking students have the ability to communicate equally well in person and online (Oblinger and Hawkins, 2005 cited in Bajt, 2011).

In contrast, many researchers and commentators challenge these claims, where they are not based on empirical and theoretical foundations (e.g. Kennedy, Judd, Churchward, Gray, & Krause, 2008). Bennett and her colleagues (Bennett, Maton, & Kervin, 2008) argue that the relationship between young students and technology is more complex than the digital native characterization suggests. They claim that *"Education may be under challenge to change, but it is not clear that it is being rejected"* (p.783). Additionally, it is found that young students' technology use and skills are varied and not uniform (White & Cornu, 2011; Selwyn, 2009b). However, there is no doubt that most young students gain new skills from using technology, which is varied and based on the kind of the technology and the time they spend on it, and which can justify calling them digital natives.

Some researchers claim that Web 2.0 has already been widely adopted by today's digital native learners. It is claimed that today's middle school students are digital natives. They are familiar with new technologies and use them easily (Jones & Fox, 2009 cited in Holcomb & Beal, 2010). They are expected to enter university as experienced multi-taskers; experts in text messaging, telephoning and e-mailing simultaneously with searching the Internet and watching television (Roberts, 2005 cited in Thompson, 2007). It is claimed that ninety percent of students will be regular users of a social networking site when they arrive at university (Hughes, 2009).

The Net Generation, as Oblinger (2003, cited in Woo & Reeves, 2007) calls them, have used technology in all aspects in their life; they have functioned in a digital environment for most of their lives and cannot imagine life without it. In education, for instance, digital natives search digital resources for information rather than physically searching a book in the library (Jones & Madden, 2002 cited in Bull, Hammond, & Ferster, 2008). These students create "the wisdom of crowds"

(Surowiecki, 2003 cited in McLoughlin & Lee, 2007) that use the collective intelligence of a global world of students. These rich and dynamic social environments change the way the students learn; learning is no longer something isolated and impersonally designed by instructors (McLoughlin & Lee, 2007). It is predicted that this new generation of students will enter university expecting transformative forms of education. In addition, digital students will expect faculty members to use technology extensively in the classroom (Thompson, 2007).

From the above, it is clear that new generations are surrounded with a ubiquitous information environment which changes their interaction, influences their view of the world and changes how they learn. We should be aware that today's students are act different; they think and learn differently. This changing nature of students entering higher education, the digital native students, should act as an impetus to move educational practices forward (ibid). There is a fundamental need for rapid changes in different directions. As educators, we should be adapting these new technologies to satisfy the new generation of students.

1.2.2 New Web 2.0 technology

Web 2.0 is influencing our life, changing how we learn, access information and communicate with one another (Livingstone & Brake, 2010; Virkus, 2008). Web 2.0 technologies such as blogs, wikis, and social networking sites (SNSs), as well as new smart phones, change the way students' access, interact with, create, and share data and information. Most students use these technologies to find information; the enormous range of resources available and the speed of access to them attract students to use the technologies (Hughes, 2009). It is claimed that the new technologies have the potential to significantly impact education (Teclehaimanot & Hickman, 2011).

Furthermore, it is argued that Web 2.0 tools are accessible, intuitive and quick to learn so they are easy to adopt and use, and cost free as they are open programs with no further cost once the institution has adopted them in its computer infrastructure. Also these technologies can enhance students' learning to be players on a global stage, if used properly (Buffington, 2008; Holcomb & Beal, 2010). These Web 2.0 features will encourage instructors to use these emerging technologies in their teaching. Delacruz (2004 cited in Buffington, 2008) identified barriers facing teachers' use of earlier technology, such as its cost, the lack of adequate training to use the technology, and the time necessary to learn to use it; none of which is the case with Web 2.0.

1.2.3 The new challenges for education

It is clear that education is faced with enormous challenges. Institutions should plan to adopt new pedagogic models to support the digital native students' entry into university bringing new demands, and to capitalize on the potential educational affordances of Web 2.0 technologies which open new opportunities for teaching and learning. This premise is supported by recent research which I will explain in greater detail in Chapter 3.

In previous sections, I presented the rapid expansion of Web 2.0 technologies in the everyday lives of students. Web 2.0 tools open a new way of learning, 'demand driven learning', as McLoughlin & Lee (2007, p.23) called it. New challenges facing educational institutions have been identified by researchers. It has been argued that many higher educational institutions have realised the need for rethinking of the modes of teaching and learning to adapt to the new learners needs. For example, McLoughlin and Lee (2007) advocate that education should support students'

personal life goals and needs through social and participatory learning. The demand is to expand the vision of pedagogy to enhance active students.

It is claimed that educational institutions have not taken advantage of the new generation of students. The education system should provide new learning opportunities for digital students to utilise the creativity and expertise, which is evident in their interaction on social networking sites, in informal learning (Schuck & Aubusson, 2010). Researchers advocate personalization of education to meet the needs, interests and potential of the new generation of learners (Green et al. 2005 cited in Redecker, 2009). New pedagogical methods should take into account the different characteristics of the new generation of learners (Prensky, 2001). Many educational systems have, however, realized the need to innovate in teaching and learning practices to support the digital natives (McLoughlin & Lee, 2007). I will explore some notable examples of Web 2.0 innovation in Chapter 3. It is suggested that digital literacy, collaboration, experiential learning, and both course design and delivery should be considered in the different ways of learning for students (Skiba and Barton, 2006 cited in Bajt, 2011). In addition, some risks in using Social Networking Sites have been identified: educational institutions must evaluate opportunities and risks. There are needs for digital literacy education, consideration of safety in the design and management of social networking sites, and developing evidence-based policy (Livingstone & Brake, 2010).

In this sense I would conclude that the greatest challenge in higher education is integrating Web 2.0 technologies effectively to enhance the learning experiences of these digital native students. In addition, there has been an increased awareness of the importance of embedding these technologies within education and within educational institutions. Furthermore, at this time, educationalists are being strongly

encouraged to increase their awareness and use of Web 2.0 in the classroom and to face the challenges of this new technology. Whether education (with its institutions, teachers, pedagogies, administrators, curriculum, parents, students, etc.) can 'easily' adopt the changes needed for applying this technology in educational setting, it is likely that the e-learning 2.0 will change the world as the world wide web has already done.

1.2.4 My personal rationale for the study

In Saudi Arabia, young adults use Web 2.0 tools extensively, especially Twitter and Facebook. In addition, smart phones and mobile technology are available in every home to all family members. Some children from two years of age use the computer for playing games. In 2005, 2.54 million Internet users in KSA by growing rate to, 1170 % (Internet Al Saudia, 2007). In this study I aim to utilise this technology for pedagogical practice. As the number of users of SNSs in Saudi Arabia has increased dramatically, a gap has opened up between students' use of the SNSs in formal and in informal learning. It is found that students "never or rarely" in King Khalid University (KKU) used their mobile for formal learning (Bangert and Almahfud, 2014).

Therefore, since Saudi Arabian students possess the capacity to use these resources, we should promote their use in education. The social networking sites give students space to interact with each other. How can we utilise and guide this interaction to help reach our pedagogical aims? What can SNS afford to higher education and how? The characteristics of social networking sites encouraged me to tap and explore their pedagogical affordances in higher education, such as its open software so that cost is not an issue for the user, its ease of use which obviates the need for training students or tutors, and the absence of further costs for the institution adopting it.

Moreover, in my personal experience, when I have tried to use Web 2.0 technologies e.g. blog, wiki, and Jusor (kind of LMS) with my students, I struggled to adopt good practice and I failed to find any examples of well-designed courses implementing Web 2.0 technologies. Also I have witnessed the extensive use of these technologies in informal learning with my children. For example, my six-year-old daughter surprised me with a very detailed drawing that she had learnt how to draw from YouTube.

Finally, the rapid development of Web 2.0 technologies is associated with changes in students' demands and changes in the characteristics needed for new forms of teaching and learning. Therefore, I conducted this study to explore the pedagogical affordances of a Social Network Site, 'The Hive', as perceived by Saudi undergraduate students and their tutors during a university course. In the following sections, I will present the significance of the research, the purpose of the research and the research questions. Finally, the organisation of this thesis will be presented.

1.3 Significance of the Research

This study is a contribution to the planned learning strategy in Higher Education in Saudi Arabia as it is the first study to explore the pedagogical affordances of social networking sites. In addition, the introduction of social networking sites in education is a new discipline with few studies about it in the education field; no studies to date, to my knowledge, explore the pedagogical affordances of social networking sites. Also, few institutions have embedded this technology in their practice; while this study is the first in Saudi Arabia I will try to investigate and explore the pedagogical affordances of social networking sites in relation to the Saudi context.

Furthermore this study is significant in the paradigm used in the research. Through a case study methodology informed by Design Based research approach, I have attempted to fill the gap between theory and practice. The iterative method and revised framework which I developed should help the practitioner and policy maker to implement this technology easily in a higher educational course. I believe that ICT has some affordances in pedagogy that should be shaped before being embedded in educational practice. The study also contributes to knowledge of social networking sites. A theoretical framework derived from the study provides guidance for the implementation of a course using a social networking site. Practically, the study puts forward strategies and principles and addresses the factors impeding the introduction of this technology in Saudi Arabia context.

1.4 Purpose of the Research

The purpose of my research is to investigate the pedagogical affordances of a Social Networking Site in higher education with specific reference to a course in Saudi Arabia.

The study will attempt to achieve the following objectives:

1. To establish a social networking site in higher education in Saudi Arabia.
2. To investigate the pedagogical affordances of the social networking site in enhancing learning in higher education in Saudi Arabia.
3. To explore the pedagogical affordances of the social networking site as perceived by the participants.
4. To introduce a taught course using applied social networking site for undergraduate students.

5. To explore how use of the social networking site in higher education supports students' learning.
6. To investigate the impact of using the social networking site in higher education learning in Saudi Arabia.

1.5 Research Questions

The main research question underpinning my study is: "What are the distinct pedagogical affordances of a social networking site in higher education in Saudi Arabia?" Furthermore, this core question is divided into sub-questions as follows:

What are the pedagogical affordances of a social networking site (specifically ELGG, a Facebook type environment), in higher education in Saudi Arabia?

1. What affordances for learning do the students perceive in a social networking site in higher education?
2. What are the pedagogical affordances of a social networking site as perceived by teachers?
3. What factors might impede the use of social networking sites in higher education in Saudi Arabia?
4. What is the added value, if any, of social networking sites for learning and teaching in higher education?

1.6 Organisation of the thesis

This thesis is composed of nine chapters and associated appendices with the following structure:

Chapter One presents a background to the study, the purpose of the study, the research questions, and the significance of the study.

Chapter Two provides a review of the context of the study, including the culture and the use of the Internet in Higher Education.

Chapter Three provides a literature review on the following concepts: the definition of Web 2.0; social constructivism and affordance learning theories and research related to Web 2.0 technologies; institutions' initiatives to implement Web 2.0 tools in education.

Chapter Four describes the theoretical framework, and the methodological approach.

Chapter Five explores the pedagogical affordances of the social networking site in an innovative course in Exeter University.

Chapter Six describes the sampling approach, the data collection procedure, and the ethical considerations.

Chapter Seven presents analyses of the research findings.

Chapter Eight presents discussions and interpretations of the themes that emerged from the data analysis. It also presents a theoretical contribution in the form of a suggested learning framework for implementing this approach to learning.

Chapter Nine discusses the implications and recommendations for implementing SNSs in Saudi Higher Education, and suggests areas for future research. It also presents its challenges and limitations.

Chapter 2 : Context of the Study

The aim of this chapter is to place the study in context in terms of its location in Saudi Arabia. Understanding and awareness of the social-political context of the research are important factors in the conduct of research and in developing methods and methodology for the researched situation, finding the most suitable approach given the purpose of the investigation. Another important issue is making sense of the situation of the research. It is important to understand my own research in the context of this government initiative and in the context of the difference between the desire for change and the reality of change.

This chapter provides brief information about Saudi Arabia and is organised into three main sections: in the first section, a general background of the country is presented with an overview of women's education and internet use in the country; in the second section, the higher education system in Saudi Arabia is reviewed, the ICT policy is outlined, and the students' background explored. Thirdly, a summary of the chapter is presented.

2.1 The country and the people

The Kingdom of Saudi Arabia, or the official name Al-Mamlaka al-Arabiya as-Saudiya, *"is located between Africa and mainland Asia, with long frontiers on the Red Sea and the Arabian Gulf and with the Suez Canal near to its north-west border. The Kingdom lies in a strategically important position and it occupies most of the Arabian Peninsula of area 2,250,000 square kilometres (868,730 square miles)"* (The Ministry of Culture & Information, nd) with a population of 27 million (2010) of whom Saudi citizens constitute just under 70%. The Central Department of Statistics and Information estimate the population until 2025 based on the Population Census in

2010. For example, by 2015 it was predicted the population would reach 31.52 million, of whom Saudi citizens would be 21.12 million (Central Department of Statistics & Information, 2010). Currently, it is estimated that almost half the Saudi population is under the age of 20 years (High Authority for Al Riyadh Development, 2012). Most of Saudi Arabia's land is made up of deserts, plateaux and mountains. The country is divided into thirteen administrative regions: Al-Baha, Al-Jouf, Asir, Eastern, Hail, Jizan, Madinah, Makkah, Najran, Northern Border, Qasim, Riyadh, and Tabouk. Figure 2.1 shows the distribution of the cities in the Kingdom. Riyadh city is the capital with population in 2010 of 6.8 million (The Ministry of Culture & Information, nd).

Figure 2.1: The regions and main cities in Saudi Arabia



Source: The Saudi Network (nd)

King Abdul Aziz established the Kingdom in 1932, so in many ways it is a young country. Islam permeates every aspect of the Saudi Arabian state, just as Islam permeates every aspect of a Muslim's life. Saudi Arabia is a monarchy whose

constitution is based on the Holy Book Quran (Koran) and Shariah Law. The Kingdom is headed by King Abdullah bin Abdul Aziz, Custodian of the Two Holy Mosques. Economically, Saudi Arabia has 25% of the world's proven oil reserves, which are likely to become even more important in the future. After the discovery of oil in 1938, the Kingdom developed rapidly in all aspects. Education was one of the main concerns. In fact, the development of education has been dramatic over recent years. The Kingdom of Saudi Arabia is an important country because it was the birthplace of Islam and is the location of Islam's two holiest cities, Makkah and Madinah. The official language is Arabic, although English is commonly used in some companies and schools (The Ministry of Culture & Information, nd).

2.1.1 Women's education

The uniqueness of Saudi women's situation is derived from Islamic culture and Saudi culture. The view that Saudi women have no rights in education and society, is widespread, but before Western women obtained their rights, the Holy Qur'an gave women economic and social rights. In Islam, *"women have been legally entitled to inherit and bequeath property, holding their wealth in their own names even after marriage, without obligation to contribute that wealth to their husband or their family"* (The Ministry of Culture & Information, nd). On the other hand, the man should protect and give financial support to his womenfolk. Based in Islamic Shari'a, women in Saudi Arabia have the same privileges as other Muslim women. Also they have the same opportunities as men but with special considerations; women have the special care and protection/supervision of her related man. When traveling she should be accompanied by a "Mahrram", an immediate family member (Hamdan, 2005, 2012).

Opportunities for women in both education and employment have increased with the economic development of the Kingdom. The women in Saudi Arabia are treated equally with men as long as this is consistent with Shari'a law (AlMunajjed, 2009). Studying the situation of Saudi women will help to clarify the findings in this research, as I will discuss in the findings and discussion chapters.

A national educational program for girls was introduced in 1960 by the Government of Saudi Arabia. By the mid-1970s, about half of all Saudi Arabian girls were attending school. By 1975, education was available to all Saudi girls (MoHE, 1996). One report from the Ministry of Higher Education indicated that in 2010 more than 56% of Saudi university students were women, as were more than 20% of those benefiting from the overseas scholarship program (Deputyship for Planning & Information, 2010). According to the 2009 Global Education Digest of UNESCO (cited in Deputyship for Planning & Information, 2010), there is no difference in the numbers of men and women who are in higher education but the number of women is increasing faster. It is predicted that the number of women graduates will exceed that of male students in the future.

2.1.2 The Internet in Saudi Arabia

The Internet was first introduced to the Kingdom of Saudi Arabia in 1994 but only academic and research institutions had access to it. In 1997, the Internet was officially made available in the Kingdom by a ministerial decision. In 1999, the Internet service became available at the King Abdul Aziz City for Science and Technology. In December 2000 there were 200 000 Internet users in Saudi Arabia.

Table 2.1 shows the number of users and the percentage of their growth in relation to the population. By 2005 the number of Internet users in the KSA had a growth rate

of 1170%. In 2013, there were more than 16 million Internet users in Saudi and it is claimed that this number was increasing rapidly (Internet World Stats, 2001a).

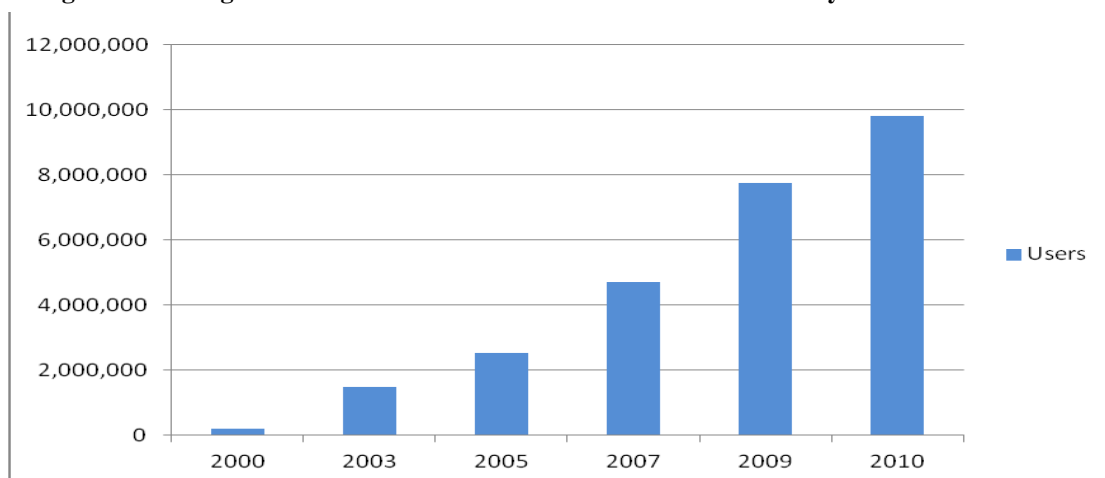
Table 2.1: Number of Internet users in Saudi Arabia in relation to population

YEAR	Users	Population	% Pop.
2000	200,000	21,624,422	0.9 %
2003	1,500,000	21,771,609	6.9 %
2005	2,540,000	23,595,634	10.8 %
2007	4,700,000	24,069,943	19.5 %
2009	7,761,800	28,686,633	27.1 %
2010	9,800,000	25,731,776	38.1 %
2012	13,000,000	26,534,504	49.0 %

Source: Internet World Stats (2001a)

In 2006, some major changes were made to the structure of the Internet in the KSA. These changes are likely to facilitate the further expansion of Internet usage in the KSA (Internet Al Saudia, 2007). The High Authority for Al-Riyadh Development (2012) reported in its Investment Climate 1433, in 2011 that the number of Internet users in Saudi Arabia had grown to 11.4 million. It is estimated that Internet usage will keep on growing rapidly in the KSA. Figure 2.2 shows the growth in numbers of Internet users in KSA between 2000 and 2010.

Figure 2.2: The growth in the number of Internet users as indicated by Internet World Stats



Source: Internet world Stats (2001a)

The rapid increase in the number of users may come from the fact that 60% of the Saudi population are the young who are quick to adopt new technologies (General Directorate for Planning and Statistics, 2010). Sait, Altawil, Shahid, and Hussain (2003) reported that 47% of the internet users in Saudi Arabia are of the young generation aged between 16 and 25, while the majority of students use the Internet for fun (Sait, Al-Tawil, Ali, & Khan, nd; Sait, Al-Tawil, Sanaullah, & Faheemuddin, 2007). The Saudi users of social networking sites also grew rapidly; by 2011 there were 4,534,760 Facebook users with a penetration of 17.4% (Internet Word Stats, 2001a).

As can be seen from the above, the main aim of educational institutions is to utilise of the students' heavy used of ICT in education, where this study counts as one attempt to do so.

2.2 Higher Education

From the era of King Abdul Aziz to the current era of King Abdullah bin Abdul Aziz, the Custodian of the Two Holy Mosques, education, at all levels, in general and in higher education specifically, has received special care. Saudi Arabia is considered the first Arab country and the eighth in the world for spending on education (General Directorate for Planning and Statistics, 2010). Higher education used to be under the Ministry of Education but in 1975 the Ministry of Higher Education (MoHE) was established, as the number of universities increased to seven. Table 2.2 shows the date of establishment each university, it was necessary to establish the MoHE.

Table 2.2: Establishment dates of the universities in Saudi Arabia. Source: Universities' websites

University	Establishment Date
King Saud University	1957
Islamic University	1961
King Fahd University for Petroleum and Minerals	1963
King Abdul-Aziz University.	1967
Um Al-Qura University	1967
Imam Muhammad Bin Saud Islamic University	1974
King Faisal University	1975

The Ministry of Higher Education in Saudi Arabia, the Kingdom's higher education system, funds the Kingdom's universities and colleges, provides the necessary technical and administrative support, and offers scholarships and financial support for Saudi students studying overseas (MoHE, 1996). The Saudi government has prioritized the provision of free education to all citizens without any discrimination, even for higher education. In 1957 the first university in the Kingdom was established, King Saud University; King Saud University had been named Riyadh University but was renamed King Saud University in 1982 (King Saud University, 2012). There were only two public universities located in Riyadh, the capital of Saudi Arabia, King Saud University (KSU) and Al-Imam Muhammad Ibn Saud Islamic University, until 2004 when the first female university was established by amalgamating female colleges. There are, now, 23 high-capacity universities, geographically distributed across the Kingdom's regions; Appendix 1 shows the Public University. All these universities are linked to the Ministry of Higher Education, but enjoy a high level of independence in both administrative and academic aspects. Most universities accept both men and women but the University of Petroleum and Minerals in Dhahran and the Islamic University in Al-Madinah admit men only, while Princess Noura bint Abdulrahman University in Riyadh admits female students only.

In the last decade higher education in Saudi Arabia has grown dramatically. The higher education system has expanded to more than 40 public and private

universities offering certificate/diploma, associate degree, bachelors', masters' and PhD programs. Table 2.3 shows the numbers of higher institutions in Saudi Arabia (MoHE, 1996).

Table 2.3: Institutions of Higher Education in Saudi Arabia

Type	Number
Government universities	23
Primary teachers' colleges for men	18
Primary teachers' colleges for women	80
Colleges and institutes of health	37
Technical colleges	12
Private universities and colleges	33

Amongst recent developments is the establishment of the King Abdullah University of Science and Technology (KAUST) at Jeddah, which opened in September 2009. This was conceived as a center of excellence in the sciences, specializing in such fields as micro-technology, nano-technology, water conservation, biotechnology and IT. These new and modern universities have attracted many international academics and students (Deputyship for Planning & Information, 2010).

In line with the Government's efforts to provide better higher educational opportunities and facilities for females, The Princess Noura bint Abdulrahman University for women is designed to become one of the largest centers of higher education for Saudi women worldwide, offering new educational subjects with 15 colleges opening up access to new jobs in the modern Kingdom with a capacity for 40,000 female students by 2010 (Al-Khalifa, 2009; Deputyship for Planning & Information, 2010; Princess Noura bint Abdul Rahman University, 2012; AlMunajjed, 2009).

In order to continue the development of the Saudi system of higher education, the Ministry has implemented a strategic plan called the 'Horizons Project' to improve

higher education over the coming twenty-five years. The plan is intended to improve higher educational opportunities for women, boost scientific research and tackle the country's shortage of scientists in critical fields (MoHE, 1996).

2.2.1 ICT and technologies policy

The Kingdom of Saudi Arabia is witnessing noticeable growth and development in all aspects of life. As a result, the Government has paid special attention to ICT, both in its periodically updated five-year development plans and in its long-term national comprehensive development plans. The Government's aim is to promote ICT throughout the education system. The use of computers in public schools began in the 1990s; indeed the Ministry of Education has launched many projects to enhance the use of ICT in schools. The Government has realised the importance of the Information and Communication Technology (ICT) sector in the country's development.

As a result, a National Communications and Information Technology Plan (NCITP) was formulated. The tenth strategic foundation about information and its technologies presented the importance of providing scientific and technological information and implementing programs to make it accessible to all users based on the laws and objectives of education (MoCT, 2005). It will be seen that the fourth objective of the NCITP plan, "*the optimum utilization of ICT at all levels of education and training*", aims to ensure the best possible utilisation of ICT in education and training. The realization of this objective is stated through three specific objectives, seven implementation policies and eight projects; shown in Appendix 2.

As a result of the Government plans towards increased integration of ICT in education, two further steps have been taken. First, in general schools, ICT was

introduced as a compulsory subject in girls' schools and at the primary stage of education in the 2003 academic year. Second, a National Project (Tatweer) has recently been launched with the aim of focusing on the quality of education, to ensure that students in general education are prepared to be able to deal with the present era, with its economic and global aspects, in a positive way through their acquisition of twenty-first century skills, at the same time maintaining the values and principles of Saudi society, as explained in their website. There are six objectives of this Project:

- 1. To develop students' skills by exploiting and using information technology (IT) in education and thereby prepare students in an effective manner for the future.*
- 2. To improve teachers' potential by employing information technology in all educational activities.*
- 3. To provide an information-rich environment, scientific content, and direct educational sources for students and teachers.*
- 4. To improve the outcome of the educational process by graduating outstanding future generations of students who have mastered the use of information technology.*
- 5. To partake in the creation of a nucleus for an advanced information technology industry in the Kingdom.*
- 6. To create a comprehensive awareness of the benefits of employing information technology in education and disseminating knowledge of information technology throughout the society at large. (Tatweer, 2012)*

The Tatweer project is introducing improvements in all aspects of the education system. It aims to enhance the education process with ICT technology. The Tatweer project also enhances teacher education by providing training courses to teachers as

well as to students (Deputyship for Planning & Information, 2010). The new curricula aim to integrate ICT use in education and develop students' skills and encourage creativity and analytical thinking to fulfill the needs of all students (Tatweer, 2012). Sait et al. (2007) claim that this project extends education beyond the traditional school boundaries and increases students' use of technology.

Regarding higher education, its policies were established in 1970 and have not changed since. The objectives of Saudi higher education are as follows:

1 – To develop the doctrine of loyalty to God, by endeavoring to provide the student with Islamic culture to be able to recognize her/his responsibilities before God for the Nation of Islam; to have valuable scientific and practical abilities.

2 – To prepare highly-qualified citizens scientifically and intellectually able to perform their duty in the service of their country and the advancement of their nation, in the light of the right doctrine and principles of Islam.

3- To provide an opportunity for talented students in postgraduate studies of science disciplines.

4- To play a positive role in the field of scientific research, which contributes to the field of global progress in arts, science and inventions, and to find the right solutions appropriate to the requirements of life and the technological trends.

5- To promote the movement of authorship and scientific production, adapting sciences that serve the Islamic idea, and show leadership in building a civilization on valued principles, which leads humanity to righteousness and enlightenment, and avoid distortions of physical and atheistic beliefs.

6- To translate knowledge of science and useful arts to the language of the Quran [Arabic], and the development of the

wealth of the Arabic language (terminology), to meet the needs of Arabization, and make knowledge accessible to the largest number of citizens.

7- To implement training services and innovative studies to post-graduates who are in employment in order to introduce innovations to them. (Alebaikan, 2010, p. 17)

The Ministry of Education and Training's vision which will be fulfilled in the year 1434/2013 is as it is stated on the website as:

Engendering of a new generation of male and female youth who embody the Islamic values in their persons, both theoretical as well as practical, are equipped with necessary knowledge, skills, and endowed with the right orientations, capable of responding positively to, and interact with the latest developments, and deal with the latest technological innovations with ease and comfort. They should be able to face international competition both at the scientific as well as technological levels to be able to meaningfully participate in overall growth and development.

This is to be achieved through an effective and practical system of education which is capable of discovering the potentials and predispositions, and, create the spirit of action. All this, in an environment of education and training, charged with the spirit of instruction and edification. (MoHE, 1996)

From the policies and vision above, the MoHE seeks to provide students with the knowledge and skills needed in rich and creative environments. However, the education system is hitherto backward these objects. For example, a study analysing the MoHE's policy statements (Al-Mengash, 2006) indicated that not all of the statements of the policy were applied and offered some suggestions for improving

Saudi educational policy. For example, she complained that teaching was still based on memorizing with no encouragement for creative thinking or peer discussion, while statement 41 of the goals and objectives of education is the encouragement of scientific thinking and research. The same finding was reported in Al-Mannie's (2002 cited in Kandiliy, 2007) study, in which he claimed that at Higher Education Institutions the educational process focused on the faculty member and academic books, notes, tests, rules and regulations, with little focus on the student as the center of the educational process. Most of the teaching methods used were below the required level in terms of dependence on memorization and retrieval of information presented by a lecturer in the classroom, and lack of encouragement to students to search for their own information for their own growth in creativity and thinking skills.

Moreover, Alamri (2011) asserted that important elements were missing in higher education in Saudi Arabia, which had the result of reducing student motivation and lowering their achievement of the objectives of the programs offered. He noted, for instance, universities' very limited use of online education; their lack of research funds which prevented scholars from conducting research in Saudi Arabia; and the limited access to academic conferences and journals in most disciplines. Alamri went further, to recommend that educational pedagogy should be shifted from "faculty centered" to "student centered" to engage the students more intensely in the learning process. Alamri suggested using alternative teaching strategies to motivate students. In addition Al-Madani and Allafajjiy (2014) discussed the need for a professional development program for teachers to gain the skills needed for 21st century. They also highlighted the role of the government and recommended "*an exchange programme with foreign higher learning institutions that will boost Saudi teachers'*

competencies and capabilities" (p.454). Mohamed, Abuzaid & Benladen (2008 cited in Almalki & Williams, 2012) considered the cultural and technical as a constraints on teacher and students utilising ICT. Furthermore Al-Faki and Khamis (2014) recommended that "*teacher should be aware of digital learners' needs*" (p.153). However, in Saudi Arabia all education policies are subject to government control, with uniformity of curricula, syllabuses and textbooks throughout the country (Oyaid, 2009). Thus the lecture-based classroom has been the standard pedagogy in most Saudi universities (Alebaikan, 2010). As a result graduates lack skills like creativity and self-learning.

The National Centre for E-Learning and Distance Learning Project is one of the recent projects of the MoHE, to fulfill the 15th objective of the NCITP plan. The Centre works as a preparatory and support centre to facilitate the collaborative efforts of universities toward utilising current distance education and electronic learning applications. In addition, it helps higher education institutions to become optimum utilisers of new technology It also supports the development of courseware administration (MoHE, 1996).

2.2.2 ICT in higher education

Several universities and colleges in KSA are now adopting e-learning as a part of their curriculum. In addition, rapid population growth, lack of teachers and instructors in terms of both quality and quantity, and high financial costs have increased the demand for using ICT in higher education. Saudi Arabia e-learning industry has increased significantly in many private and government universities (RNCOS, Oct 2013).

In addition, with the rapid expansion of the use of technologies by Saudi students, it was found that both students and researchers utilised the Internet in many aspects of education, such as teaching, research and training, which are considered to be the main aspects of using these technologies in education (Al-Shawi & Al-Wabil, 2007; Aljodi, 2003; Qashqari & Qashqari, 2004; Sait, et al., 2003). It is also shown that only 10.9% of faculty members, from the four universities investigated, reported familiarity with Web 2.0 applications (Al-Shawi & Al-Wabil, 2007). Saudi Arabia has been slower than many nations to move into distance education. The Ministry of Higher Education in SA has started to notice the need for virtual learning and distance learning and is developing new strategies to adopt these new approaches in the higher education system.

As an initiative planning to utilise technology in higher education, many universities in Saudi Arabia have started to provide some courses online. Moreover, some universities have established a special deanship or center for providing online courses, King Abdulaziz University (KAU) being the first, in 2006; in 2010, King Faisal University (KFU) implemented a new Deanship of e-Learning and Distance Learning program at their university. For example, King Saud University (KSU) established the Electronic Learning and Distance Learning Deanship in 2007, to assist members of the faculty and students to improve the quality of the learning process through investing in e-learning methods, allowing the learner to choose the place and time to learn, and to help faculty members to activate education through the provision of scientific content in ways that depend on information technology and modern communication (King Saud University, 2009). To assist this goal the Dean processed and established more than a thousand smart classrooms in various campus buildings in Dir'iya, Malaz and Olaisha and a number of advanced

educational technologies, distributed across various colleges to facilitate access to information. Also the Deanship organised a training program on the effective use of smart classrooms in cooperation with the Deanship of the Development of Skills at the University. Currently, most Saudi universities have a center or deanship that specialises in providing distance and e-learning. Moreover, King Abdulaziz University introduced a mobile learning system. The system utilises smart devices, e.g. iPod, iPad, to connect students with the learning system (King Abdulaziz University, 2013).

Al-Khalifa (2009) illustrated three examples exemplifying Saudi Arabia's institutions applying ICT. The first was that King Abdul Aziz University introduced two systems (CENTRA and EMES). The lectures were published on CENTRA which is a virtual class room system. The students and their teachers can interact via EMES (E-Learning Management Electronic System). The first academic year in which the program was applied was 2007-2008, where the Faculty of Arts and Humanities and Faculty of Economics and Administration offered these programs. As a second example, Al-Imam Muhammad ibn Saud Islamic University at Riyadh, offered four years of distance courses leading to Bachelor's level degrees. The lectures were broadcast live and recorded on the distance learning website. Also there was a virtual classroom which facilitated interaction and communication. In 2008, 6000 students registered in this program. Distance education in the girls' colleges recently known as Princess Noura University is another example. VSAT technology was used for postgraduate students, it has provided 36 colleges within 300 students. The broadcasting center was in the capital city Riyadh and lectures were broadcast to Girls' Colleges all around the Kingdom. Al-Khalifa (2009) claimed that this project may improve higher education especially for female students, open new opportunities to them and facilitate their mobility. Al-Khalifa added there has been no

progress on the project since then. Moreover, it is predictable that distance learning in Saudi Arabia opens up doors to women that have long been closed (Aljabre, 2012).

Consequently, for the increased develop of education, King Abdullah has called for a national plan for the utilisation of information technology. To assist the development of education systems in Saudi Arabia, the Ministry of Higher Education has established the National Plan for Information Technology which encourages e-learning and distance learning in higher education. In 2006, a National Center for e-Learning and Distance Learning (NCeL) was established to provide technical support as well as the tools and means necessary for the development of e-learning content. The center supports the higher education process at administrative and pedagogical levels. As a result nine universities have started applying e-learning in their system such as: King Saud University, King Abdul Aziz University, Baha University, Taiba University, Qassim University and Madinah Islamic University (NCeL, 2009). The principal goals of the National Centre are:

- 1. To spread e-learning applications and solutions in all higher education institutions in accordance with the best quality standards.*
- 2. To facilitate capacity building for higher education institutions by using e-learning applications and solutions.*
- 3. To widen the technical awareness and e-learning knowledge this will help in building a knowledge society.*
- 4. To facilitate conducting and evaluating e-learning projects.*
- 5. To support research and studies in the field of e-learning and distance learning.*

6. To set standards for e-learning courseware production and publishing.

7. To provide consultancy in the field of e-learning and distance learning.

8. To build and distribute educational software applications that support the educational process on both public and private sectors.

9. To encourage best projects on e-learning and distance learning in higher education institutions.

10. To hold seminars, workshops and conferences that will add value to e-learning & distance learning.

11. To establish international bonds with the best leaders in the e-learning field. (NCeL, 2009)

NCeL provided and established many projects to support the Center's aims. One of the projects is JUSUR, an LMS designed for the National Center for e-Learning and Distance Learning to support the e-learning process in tertiary institutions with an Arabic alternative system. Saudi Digital Library, another project, provides digital books and resources for university students and faculty staff. The library contains approximately 90,000 titles of digital books. SANEED, the Saudi Center for Support and Counseling Project, provides support and guidance to the users of e-learning, whether students, faculty members or any other external customers for the NCeL. Project MAKNAZ (National Repository) is for building digital curricula with higher quality and less cost. This project will support and utilise the efforts of Saudi universities. Finally Training Programs aims to train faculty members and technical staff in the Saudi universities in the area of e-learning and its applications (NCeL, 2009).

As cited above, higher education institutions are encouraged by the MoHE to make use of the new technology in pedagogy. The educational institutions have developed in the past year, yet there are challenges for growth in the use of technology in learning (Aljabre, 2012). Until now the Web 2.0 technologies have not been applied in higher educational institutions, though some cases have been reported of their use in the classroom, which I will explore in Chapter 3. Until this study is conducted, to the best of my knowledge, there is no use of social networking sites in education in Saudi Arabia. In the next section, I will clarify the attempts in higher education to encourage the skills required in the new age of knowledge.

2.2.3 New knowledge age skills in Saudi Arabia

In this section, I will present the ways in which students are introduced to the skills of the new age of knowledge in the Saudi context. Also, I will illustrate how the policy in higher education prompts and prepares the student to acquire these knowledge age skills. As indicated in the second report of the Arab Thought Foundation on December 2009, Saudi Arabia was ranked first place in the Arab world and seventh in the whole world in creativity and innovation, according to certain indicators of abilities (General Directorate for Planning and Statistics, 2010).

King Abdul Aziz Centre for National Dialogue

In accord with the development of all aspects in the Kingdom, the Custodian of the Two Holy Mosques, King Fahad Bin Abdul Aziz - may he rest in peace-issued a Royal Decree to establish King Abdul Aziz Center for National Dialogue on 1424/2003. The main aim of the King Abdul Aziz National Dialogue Center is “to *create a new environment which will facilitate dialogue among various sections of the*

society with the aim of promoting public interest and consolidating national unity based on the Islamic faith” (King Abdulaziz Center, 2011).

One of the activities of the Center is to establish a Youth Committee. One main aim is to involve youth from both genders of ages 16 to 25 years who are eager to contribute in achieving the Center’s goals among young people. The Center trains young people to use dialogue channels as a method of solving problems in their life. Also the centre seeks to involve a large number of young people in the dialogue and to work in collaboration with the relevant establishments. Unfortunately, this training is voluntary and not obligatory for all students; also it does not focus on classroom dialogue or encourage teachers to apply this dialogue in their practice. It is noteworthy for the establishment of eDialogueC- dialogue center. The Center was created by young Saudi people to find a suitable platform for direct dialogue and free debate over the Internet (eDialogue, 2011). From my point of view, I think it should start from primary school and train the students and their teachers to dialogue, which would facilitate their use of the dialogue channel in all aspects of their lives.

Preparation year for undergraduate students

With the improvement introduced by the Ministry of Higher Education plan and its new vision, the preparatory year for university entrance was adopted in 2008-2009 in all major universities of the Kingdom, to improve the level of knowledge amongst students planning to specialize at university. In addition, this foundation year prompts students to acquire the skills of the new knowledge age and supports the Government's goal to build a knowledge-based society. The foundation year was designed to cover many subjects: English, mathematics, computer sciences and communication, in addition to courses in health awareness, civic education, and self-

learning. Furthermore, the Information and Communication Driving Licence (ICDL) program has already been implemented in the preparatory year in King Saud University, Princess Nora bint Abdulrahman University, Taibah University and University of Tabuk. This program is offered to provide students with basic computer and internet skills to enhance their learning (ICDL Saudi Arabia, 2008).

It is worth noting that the preparation year supports the skills needed in higher education; nevertheless, these skills are not followed up or applied in the following years of study. Moreover, the training courses the universities offer for tutors focus on using technologies in teaching without any focus on promoting the students' skills.

2.3 Students' background

Most Saudi students have several information and communications technology (ICT) skills, these skills were acquired during their study, especially in their undergraduate years (ICDL Saudi Arabia, 2008; Tatweer, 2012) or at home. Furthermore, most students in undergraduate settings have grown up with computers with advanced capabilities in gaming and entertainment. Most students in Saudi Arabia have a laptop or desktop computer, and they have acquired excellent knowledge of using the internet. Children from nine years old have smart phones, Saudi Arabia being the first country to have the largest number of smart device users in the world. It is reported that there are 180 smart devices for every 100 citizens in the Kingdom (Al-Sibai, 2012). Nowadays, these new technologies are provided for children to play with, without any educational aims (Sait, et al., nd).

In Saudi Arabia, students must finish 12 years of study in general education to be qualified to enroll at university. The children start primary education at age six. At the end of Grade 6 the students should pass a final exam to transfer to intermediate

schools (Almalki, & Williams, 2012). From 1991, ICT has been taught as part of the curriculum in all boys' secondary schools and later in girls' schools as a compulsory subject with two classes per week, lasting in total two hours (General Directorate for Planning, 2005). However, most private schools started to teach aspects of computer studies in 1995. Although in 2005 the Ministry of Education formally approved its use in all public primary and secondary schools, this has not yet been implemented (Hassana & Woodcock, 2006). Until now ICT has been not introduced at primary school. Almalki and his co-author (2012) presented some hindrances to applying ICT in primary school in Saudi Arabia. They categorise these hindrances as "*teacher factor, school/institution factor and extrinsic factor*" (p.47).

Curricula are unified throughout the Kingdom and there is a Curriculum Department in the Ministry of Education. The students are upgraded to the next grade based on their marks in each subject; they must pass exams in all subjects. 60% of the total mark is based on the final examination while the rest of the marks are based on their work during the semester. The examination questions are based on the textbooks and they are driven by the topics in the textbooks (Oyaid, 2009). It is argued that teachers in public schools use traditional methods which do not support students' study skills, so that students in general education do not acquire self-directed learning (Al-Saadat, 2006 cited in Alebaikan, 2010). It is recommended that teachers should encourage taking in-service training emphasising pedagogical skills for using ICT in classrooms (Mulhim, 2014). Thus the public education system does not provide students with the skills needed to be creative or critical thinkers.

Summary:

From the above brief description of the context of higher education in Saudi Arabia and the educational utilisation of ICT, it can be seen that increasing importance is being given to ICT in higher education in particular, and in the country as a whole. It is clear that the Government is seeking to improve and develop the current educational system to promote the skills needed in modern society and employment. Also, the phenomenon of digital native students was raised in this context, where most of the population of Saudi Arabia (60%) are youth who rapidly adopt the new technology, becoming the “Net generation”, though the majority of students just use the internet for fun. In addition, the population of Saudi Arabia and their adoption of the new technology have been increasing dramatically, as presented previously in this chapter. Consequently, it is not surprising that both the Ministry of Education and the Ministry of Higher Education consider this population growth rate to be a major challenge that must be taken into account when they plan for the future.

Therefore, considering the context discussed in this chapter, it is important to design this intervention study so that these resources can be utilised to promote student skills. This kind of research will explore how Web 2.0 can be integrated into higher education for young students. I think this study could potentially achieve the policy aims of higher education and encourage students as well as faculty members to use the new technology, to overcome the problem of population growth, and extend the informal use of these technologies by youth. Accordingly, adopting Web 2.0 technology in higher educational institutions is probably unavoidable; it is strongly hoped that introducing Web 2.0 into higher education pedagogy will improve the quality of teaching and learning in a cost effective manner.

Chapter 3 : Literature Review

This chapter will trace and discuss relevant literature in the area of the affordances of Web 2.0 and Social Networking Sites (SNSs). I will identify the concept of 'Web 2.0' and 'Social Networking Site' and their meaning in relation to this study. Furthermore, social constructivism and affordances learning theory will be discussed, and then the relationship between these theories and Web 2.0 and SNSs will be explored. The literature on the educational uses of SNSs and Web 2.0 will be reviewed, as well as notable examples of Web 2.0 technologies innovation practices. Finally, I will present some emerging issues concerning the use of Web 2.0 and SNSs in education. The chapter will review some research studies from other contexts but relevant to this study; this is due to the lack of studies on this topic in Saudi Arabia. The differences between the two cultures will be acknowledged.

3.1 Social Networking Sites (SNSs)

Some confusion exists over the use of the terms 'social networking web technology', 'social software', 'Social Networking site' and 'Web 2.0'. In some literature there are mixtures between these terms; some use these terms to refer to the same meaning. In this section, I will define the term 'Social Networking Sites' as related to my research. First, the term Web 2.0 will be defined then differences between Web 2.0 and Web 1.0 will be clarified. Then I will clarify what I mean by the term 'Social Networking Sites'.

One way to gain insight into the meaning of Web 2.0 is by contrasting the former web "Web 1.0"; with Web 2.0. If we consider Web 1.0 as a read-only medium, Web 2.0 is a read/write medium. Web 1.0 was much more a one-way experience. Adding content to Web 1.0 was limited to a few persons e.g. web designers and

programmers or anyone who had the knowledge to create Web pages using HTML languages or other computer programming. With Web 2.0 the idea is that the Internet is now a place where any and all users can create, upload, and transform information. Web 1.0 users were only browsing and finding information on the Internet; in contrast with Web 2.0 where users can also participate by creating and uploading content. Due to the ease of use of Web 2.0, users are encouraged to share their contents and upload them without any knowledge about HTML programming language (Thompson, 2007). Downes (2005) sees the Web 2.0 as a shift "*from being a medium, in which information was transmitted and consumed, into being a platform, in which content was created, shared, remixed, repurposed, and passed along*" (paragraph 20). Consequently Web 2.0 is a platform to create, share and remixed content. In addition Web 2.0 applications help users to socialize and work with each other collaboratively. From my point of view, this sharing and collaboration was not restricted to Web 2.0; it was also on Web 1.0. However the Web 2.0 technologies simplified the way users can interact and publish e.g. Twitter. Forums and group discussions were present before Web 2.0, where users could produce content as with Web 2.0 technologies.

The Web 2.0 term was first introduced at the first Web 2.0 conference, in October 2004 (Miller, 2005). O'Reilly (2007) defined it as

Web 2.0 is the network as platform, spanning all connected devices; Web 2.0 applications are those that make the most of the intrinsic advantages of that platform: delivering software as a continually-updated service that gets better the more people use it, consuming and remixing data from multiple sources, including individual users, while providing their own data and services in a form that allows remixing by others, creating

network effects through an "architecture of participation," and going beyond the page metaphor of Web 1.0 to deliver rich user experiences (p.17).

The Web 2.0 term has been defined by many researchers, however they tend to agree that Web 2.0 refers to software applications which facilitate socializing and collaboration between users over the internet. As an instance, Thompson (2007) defined the term Web 2.0 as a *"second generation of services available on the World Wide Web that lets people collaborate and share information online"*(p. 1). In 2002, the term social software was used by Shirky (2003 cited in Owen, Grant, Sayers, & Facer, 2006) who defined social software simply as *"software that supports group interaction"* (p. 7). Current social software allows users to collaborate and socialize using different tools that can enhance group interaction. Franklin & Harmelen (2007) argue that:

Web 2.0 encompasses a variety of different meanings that include an increased emphasis on user generated content, data and content sharing and collaborative effort, together with the use of various kinds of social software, new ways of interacting with web-based applications, and the use of the web as a platform for generating, re-purposing and consuming content (p.4).

From the above, It is clear that the terms are used interchangeably, Web 2.0 and social software applications, for example in Thompson's definition, Web 2.0 means services on the web and Web 2.0 and social software are the same. While I argue that Web 2.0 is a second generation of the web which acts as a platform to host social software applications via servers, Web 2.0 applications may be called Web 2.0

systems, Web 2.0 services, Web 2.0 tools or Web 2.0 applications. I agree with Selwyn's (2008) definition of Web 2.0:

Web 2.0 is an umbrella term for a host of recent internet applications such as social networking, wikis, folksonomies, virtual societies, blogging, multiplayer online gaming and 'mash-ups'. Whilst differing in form and function, all these applications share a common characteristic of supporting internet-based interaction between and within groups, which is why the term 'social software' is often used to describe Web 2.0 tools and services (p.4).

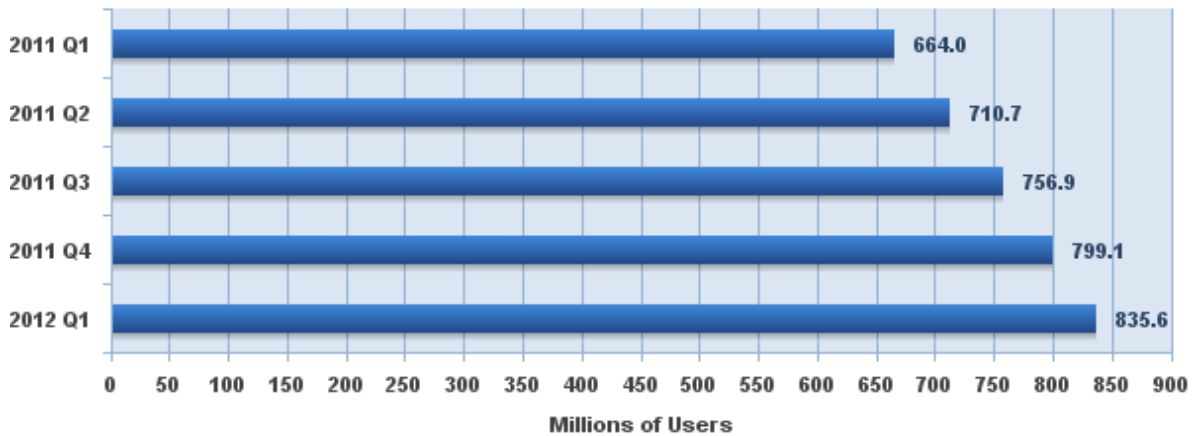
The importance of Web 2.0 has increased with the growth of social software applications and services that facilitate anyone with a computer connected to the Internet to be part of these social software services. There are lots of social software applications which facilitate group processes, e.g. Blogs, wikis, social bookmarking, media-sharing services, (e.g. YouTube movies), iTunes (podcasts and vidcasts), Flickr (photos), Slideshare (presentations), DeviantArt (art work) and Scribd (documents), social networking (e.g. Facebook and MySpace for social networking / socialising), LinkedIn (for professional networking), Second Life (virtual world) (ibid). Benzinger (2006) developed a series of articles called "Back to school with Web 2.0" which explore real case studies of Web 2.0 applications for educational purposes. Benzinger (2006) mentioned helpful Web 2.0 applications that could help students, teachers and administrators alike. Social networking allows users to interact in many ways; the internet users are no longer just consumers, they also create and re-purpose content and learn from each other.

Social networking technology, social networking systems, or Social Networking Sites SNSs e.g. Facebook, one of the Web 2.0 applications, allows users to describe

themselves and their interests; these interests help to create friendship groups or communities (Franklin & Harmelen, 2007). Social networking sites allow users to create an e-profile in the web, add their photo and other information that facilitates socializing with others (Thompson, 2007). In addition students can find groups that share the same interests, courses or professions and join them easily (Kitsantas and Dabbagh, 2010 cited in Bajt, 2011). Social networking sites facilitate many means of communication and collaboration; as a result use of social networking has increased dramatically among higher education students. In this study, social networking site can be defined as one of the Web 2.0 applications that enables users to network together via multiple and intuitive tools. It allows users to create online profiles and share personal information. Each user has her/ his digital identity; also s/he can set up friendships with other users; in addition the user can join many communities in this web site or create his/ her own community.

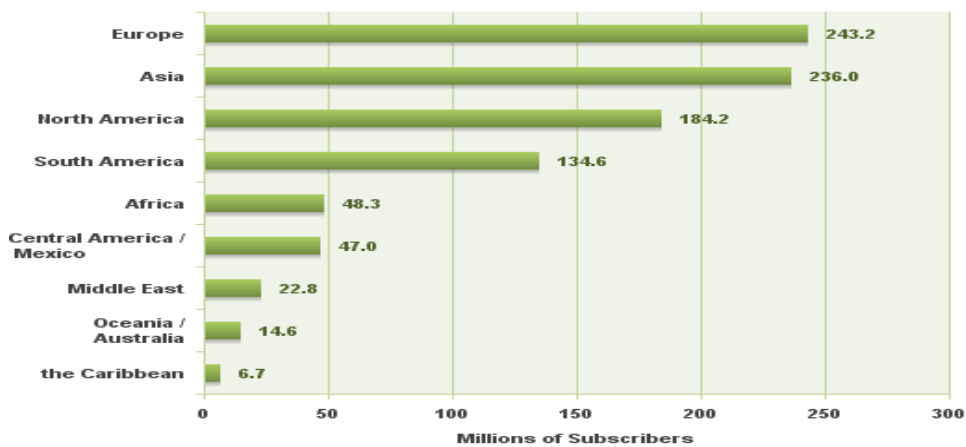
The most popular social networking sites are Facebook, My Space and Linked-In. These sites have made significant changes in many students' lives (ibid). Figure 3.1 shows the growth of the number of users all over the world between 2011 and 2012, while Figure 3.2 breaks down number of Facebook users by region (Miniwatts Marketing Group, 2012). In February 2004, some students from Harvard University created Facebook and started using it among their fellow students. Facebook is one of the top ten most popular social networking sites (Thompson, 2007). In March 2013 Facebook had over 1.11 billion users (Statistic Brain, 2014).

Figure 3.1: World growth in Facebook use 2011 - 2012



Source: Internet World Stats - www.internetworldstats.com/facebook.htm
 Facebook users worldwide are 835,525,280 on March 31, 2012
 Copyright © 2012, Miniwatts Marketing Group

Figure 3.2: Number of Facebook users by region



Source: Internet World Stats - www.internetworldstats.com/facebook.htm
 The total number of Facebook subscribers in the world is estimated to be 937,407,180 on September 30, 2012.
 Copyright © 2012, Miniwatts Marketing Group

Saudi Arabia ranks as 33rd country in the world in number of users of Facebook in 2013. There are five and a half million Facebook users in the country and this number grew by more than three hundred thousand in the last six months. 71% of these Saudi users are male and 29% female. The largest age group of users are aged 25-34 years, with a total of two and a quarter million users, followed by younger ones in the age range 18-24 years (Socialbakers, 2013).

3.2 Theoretical aspects of social networking site

3.2.1 Social constructivism

Constructivist learning theory was influenced and developed by the work of Dewey (1916), Piaget (1973) and Vygotsky (1978) (Huang, 2002; Jaffer, 2010; Tobias, 2010; Woo & Reeves, 2007; Wu, Hsiao, Wu, Lin, & Huang, 2012; Zhang & Kou, 2012). These three theorists proposed that learners are active learners who construct new knowledge based on their prior knowledge (Huang, 2002). For Dewey, knowledge is based on active experience. Piaget thought that learner's cognition is constructed by the learner from the learners' interactions and developed by internal and external causes (Tobias, 2010; Zhang & Kou, 2012). Drawing on the ideas of the social development theory of Vygotsky (1978), the emphasis shifted to the social context of learning. For Vygotsky, language and socio-cultural context shape the learner's knowledge construction as they act and interact to construct new knowledge (Huang, 2002; Jaffer, 2010; Wu, et al., 2012). The role of social interaction was also present in Piaget's theory but was less emphasised.

Fosnot (2005) argued that "*Constructivism is a theory about knowledge and learning. It describes what 'knowing' is and how one 'comes to know'*" (cited in Woo & Reeves, 2007, p.18). The learner from the constructivists' view is a knowledge constructor who learns as an active and constructive process (Wu, et al., 2012). Constructivism assumes that knowledge is constructed and developed by learners while they are engaged in meaning-making from their experiences (Woo & Reeves, 2007). Schwandt (1997) defined Constructivism as:

A philosophical perspective interested in the ways in which human beings individually and collectively interpret or construct the social

and psychological world in specific linguistic, social, and historical contexts (p. 19).

Baviskar, Hartle, & Whitney (2009) emphasised that the construction of new knowledge needs feedback from the teacher or other source, and needs to connect with previous constructs which can be changed to accommodate the new construct. Adams (2006) views constructivism as having a 'fluid nature' where the constructed knowledge will be different for each learner; this results from the way the learner acquires, selects, interprets and organises information.

Lee (2012) describes social constructivism as a generic term that has many meanings with slight differences. For instance, Woo & Reeves (2007) describe cognitive constructivism and social constructivism. The former is defined as the process of meaning making that occurs at the individual cognitive level. Jaffer (2010) argues that modern cognitive constructivism rests on Kantian and Piagetian theories. On the other hand, social constructivism assumes that "*meaning making is the process of sharing various perspectives and experiences in communities of practice... with other people who have similar or different perspectives based on their own life experiences*" (Woo & Reeves, 2007, p. 18). Social constructivists propose that the individual's learning or construction is influenced by the socio-cultural context (Jaffer, 2010).

Baviskar et al. (2009) used personal constructivism to refer to individual learning theory or cognitive constructivism, describing the difference between personal and social constructivism theories as:

Social constructivism states that cultures or groups construct their knowledge bases through the discourse and interactions among

their members rather than through the discoveries of individuals or the dictation of authorities. (p. 542)

I take the position in this study that the individual learner constructs meaning based on his/her experiences. This process is stimulated by the socio-cultural context and occurs during their actions and interactions in the environment.

Pedagogical constructivism

Social constructivist learning theory may be used and applied for pedagogical practice and innovation; it is only a general orientation with no defined procedures (Meyer, 2009). Nevertheless, Meyer argued that social constructivism learning theory has made significant progress in teachers' and lecturers' education programmes. Several researchers (Adams, 2006; Baviskar, et al., 2009; Bybee, 1993; Huang, 2002; Jaffer, 2010; Roschelle & Teasley, 1995; Zhang & Kou, 2012) have tried to identify good pedagogical practices based on social constructivism theory.

Baviskar et al. (2009) claim that some researchers have misused or misunderstood social constructivism, as it is a theory of learning not of teaching. He claims that, although social constructivist learning theory has been used to develop new teaching methods, especially in science education, nevertheless some researchers have described theoretical constructivism rather than how to apply it in practice.

Based on the ideas of social constructivism, researchers have established a series of principles to be accomplished during the development of an educational activity. For example, Roschelle & Teasley (1995) illustrate these principles as:

Constructive means that the students have to modify their current knowledge schemes to integrate new information and

acquire new knowledge. Active indicates that total student participation is expected. Significant refers that learning has to be with a meaning, built from the conceptual structure the student already has. Based on consultation points out that the child has to formulate his/her own questions, from multiple interpretations and learning expressions. Reflexive shows that the student has to mirror his/her own experience on other students, making them experts in their own learning. Finally, to be collaborative indicates that the child learns from others by working together on the same objective, where each group member is a potential source of information. (p. 73)

Furthermore, Roger Bybee and his team from the Biological Science Curriculum Study (BSCS) developed an instructional model for constructivism, called the 'Five Es' i.e. 'Constructivism and the Five Es'. One formulation of the 5 Es includes a learning cycle of 'Engage, Explore, Explain, Extend and Evaluate', and proposes possible activities matched to each phase of the cycle (Bybee, 1993).

According to Driscoll (2000, Cited in Reiser, 2001), the instructional principles associated with social constructivism include requiring learners to (a) solve problems, (b) work together, (c) examine problems from multiple perspectives, (d) become responsible for their own learning process; and (e) become aware of their role in the instructional process. Furthermore, Adams (2006) suggested a number of principles with a high degree of generality. He further argued that these principles should be taken as guidelines and not as instructions to be followed one by one. These principles are:

- 1. Focus on learning not performance.*
- 2. View learners as active co-constructors of meaning and knowledge.*

3. *Establish a teacher–pupil relationship built upon the idea of guidance not instruction.*

4. *Seek to engage learners in tasks seen as ends in themselves and consequently as having implicit worth.*

5. *Promote assessment as an active process of uncovering and acknowledging shared understanding. (p.247)*

Baviskar et al. (2009) asserted four criteria to consider the activities, structure, content or context of a lesson as constructivist: “*eliciting prior knowledge, creating cognitive dissonance, application of the knowledge with feedback, and reflection on learning*” (p.543-4).

Huang (2002) suggested instructional principles that could guide the design of online learning: interactive learning, collaborative learning, facilitative learning, authentic learning, learner-centered learning and high quality learning. These principles were based on social constructivism theory. In addition, Anderson (2004 cited in Jaffer, 2010) proposed a model of online learning. Deriving from social constructivism, online learning should be learner-centered, knowledge-centered, assessment-centered, and community-centered.

The principles of the researchers mentioned above are summarised in Table 3.1, to which I have added my own approach to principles for online-learning derived from social constructivism and my reading of the literature. I will explain this in the following section.

Table 3.1: Researchers' online-learning principles derived from social constructivism.

Bybee (1993)	Engage, Explore.		Explain, Extend, and Evaluate	
Roschelle & Teasley (1995)	Active students	Significant	Reflexive	Collaborative
Driscoll (2000)	<i>Solve problems, Responsible for their own learning process, Aware of their role in the instructional process.</i>			<i>Work together, Examine problems from multiple perspectives</i>
Huang (2002)	<i>Interactive learning learner-centered learning</i>	<i>Authentic learning, high quality learning.</i>	<i>Facilitating learning,</i>	<i>Collaborative learning,</i>
Anderson (2004)	Learner-centered	Knowledge-centered	Assessment-centeredness	Community-centered.
Adams (2006)	<i>Active-learners</i>	<i>Engage learners</i>	<i>Teacher-guidance</i>	<i>Promote assessment</i>
Baviskar et al. (2009)	Eliciting prior knowledge, creating cognitive dissonance,	Application of the knowledge	With feedback, reflection on learning	
Al-Ibrahim	Learner-centred	Authentic-content	Feedback	Collaborative-context

Social Constructivism with technology

In the past decade, the majority of educational research in ICT has been concerned with the efficiency and effectiveness of ICT in education. This has been confirmed by Cutler (1996 cited in Kreijns, Kirschner, Jochems, & Buuren, 2007) who remarked that the “*current literature surrounding CMC (computer-mediated communication) is almost entirely task-based and focused on cost, efficiency, and productivity with little attention given either to the change’s effect on the people or to the social relations created from using the communication technologies*” (p. 320). Recently, more research concern has been evinced with social learning when ICT is used in education.

Many studies have argued that social constructivism provides educational technology with theoretical foundations for its significant impact on learning in these environments. For instance, Woo & Reeves (2007) emphasise that “*constructivism has provided different forms of theoretical bases for effective online learning environments as well as for face-to-face classroom learning environments*” (p.18).

Duffy and Jonassen (1992 cited in Jaffer, 2010) claim that curriculum designers should “*consider constructivist principles in the design of educational technology learning environments or resources*” (p.276), as a result of the rapid development of learning technology and the proliferation of information within a particular disciplinary domain.

Recently, many educators have used social constructivism as a base to design effective learning environments (Woo & Reeves, 2007). Also Wu et al. (2012) found that studies using learning theory foundations in game-based learning increased after 2000. They argued that social constructivism is one among six factors that have had a significant impact on instructional-design practice.

Jaffer (2010) describes the relationship between learning theories and educational pedagogy: “*Learning theories explain how individuals learn while pedagogy describes the roles of teachers and learners, the relationship between them and the kinds of teaching and learning activities they engage in*” (p.273).

Liu, Liu, Bao, Ju, & Wang (2010) created a web-based self-testing system. The foundations of the system are based on theories of social constructivist learning and on Web 2.0. They found that “*most learners are satisfied with the system, and the system is of distinct features and favorable practicality compared with other systems, but it still needs to be improved in the design of user interface and some other details* (p.265).” In the same vein, a study by Gasparetti, Micarelli, & Sciarrone (2009) designed a web-based training system based on social constructivist theory and self-directed learning. The study showed that the students learned effectively with this system. Westera, Hommes, Houtmans, & Kurvers (2003) found that the students increased in self-confidence, diagnostic knowledge and skills, and efficacy in

practical work after training on a program on psychological diagnostics. Westera, et al. (2003) designed the principles of the program based on constructivist theory and experiential learning.

Online learning educators, e.g. Herrington and Oliver (2000 cited in Woo & Reeves, 2007) claim that, based on social constructivist learning theory, educational applications of the web can support and improve effective interactions of learning.

Researchers have already identified the positive effects of social interaction during learning supported by ICT. For instance, Clarke & Heaney (2003) used asynchronous computer conferencing to support the teaching and learning of literacy. The project, which provides a space for online, social, situated learning, demonstrates a strategy for using on-line asynchronous conferencing to support both literacy and ICT skills within a constructivist, social, learning situation. This result is supported by the results of Jefferies, Grodzinsky, & Griffin (2003) which have shown that there are many advantages of using the blackboard that promote collaborative learning as a social constructionist model in higher education. The same results at a study on trainee teachers using an e-blackboard for a text-based discussion found that online discussions can facilitate instruction and creation of knowledge using social constructivist approaches (Hawkey, 2003). Additionally, Zurita & Nussbaum (2004) designed a wireless interconnected network supported by handheld devices. In this environment, the children built up their own knowledge. The results of the study emphasise the learning benefits of a technology-based activity over paper-based activity. Also, Zurita & Nussbaum (2004) found that the characteristics of constructivism were achieved better in the mobile computer supported collaborative learning environment than in a collaborative learning environment without mobile computer support. The results of the study of Lally & Barrett (1999) support the

arguments that new technology can be a key to social interaction and construction of knowledge. Their research findings indicate that computer-mediated communication (CMC) can support the formation of an on-line learning community capable of providing significant social and academic support to students. Similarly, Francescato et al. (2006) assert the need for new methodologies for third generation distance education that support collaborative learning as well as independent learning. Furthermore they argue that social presence, professional competencies and self-efficacy can be developed in this environment.

Many researchers have suggested that Web 2.0 supports constructivist approaches to learning. Hakkinen (2003) argued that technology can be seen as an essential element in re-structuring social interaction and knowledge-building. Web 2.0 has potential to socialise online learning to facilitate social constructivism (Virkus, 2008). Harmelen (2008) argued that Web 2.0 aids the social constructivist approach, as the knowledge is created by learners in the context of, and as a result of, social interaction. Finally, it is argued that SNSs specifically *“promote social interaction between individuals, potentially supporting active learning, social learning, and student knowledge construction within a student-centered, constructivist environment”* (Ferdig, 2007 cited in Teclehaimanot & Hickman, 2011, p.19).

In contrast, it is also argued that constructivist theory has some conflict with educational technology. Some educational technologies do not allow learners to be creative learners, to think or make connections (Wegerif, 2007). Another criticism is the conflict between learning theories and pedagogic constructivism. Constructivists claim that individuals learn through constructing knowledge, where the teaching method used is not important. Also acquiring ready-made concepts contradicts active knowledge construction (Jaffer, 2010). However, in this study I used social

networking sites which support dialogic space in asynchronous environments. The dialogue promotes general learning skills, creativity and learning to learn (Wegerif, 2007).

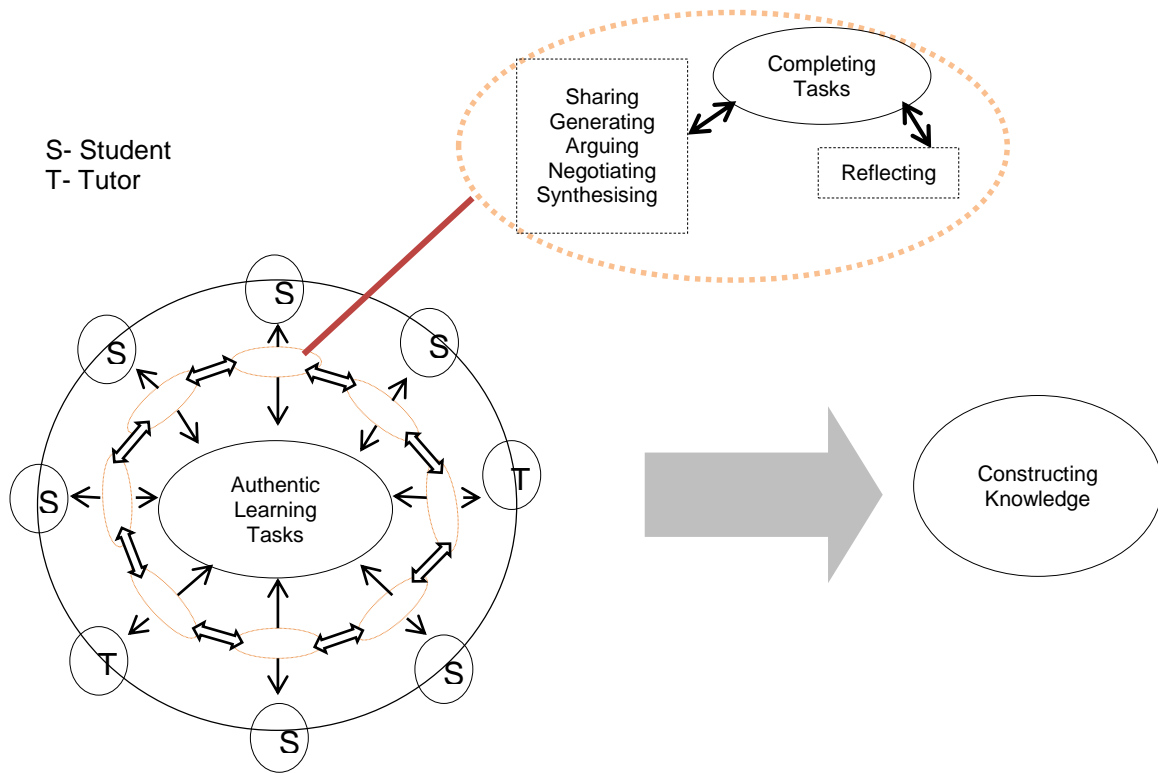
My Argument

I think that social constructivist learning principles are identify good pedagogical practices to apply social networking site. As Franklin and Harmelen (2007) argue: *“Social constructivist approaches are particularly aided by Web 2.0 tools as mediating mechanisms between collaborating students and between students and teachers, particularly between students who might be sometimes working in different places and at different times”* (p.22).

I suggest some series of principles associated with design an educational activity in this environment. The design activities should be **learner-centered** whereby learners construct their knowledge via acting in social networking site. The learner is active in the learning process. The learner constructs knowledge through questioning his/her prior knowledge and during social interactions. The learner links new knowledge with previous knowledge (prior knowledge) through generation, evaluating and re-shaping of knowledge (including previous knowledge). Constructed meanings mean that the learner may accept the new knowledge or reject it. Also the learner builds (constructs) his/her knowledge either personally or by communication with others. The learning activities should promote **authentic-content**, by which I mean that the content on the social network site should encourage students to question their existing knowledge, and engage and explore in order to construct new relevant knowledge of importance to them. I assume this environment facilitates **feedback** from the members of the community: students or

teacher. The feedback also could be reflective, or explain and evaluate learning. There needs to be a **collaborative context**, where the community naturally exists to aid the students to build up their knowledge as a group. Also, the social networking site adopts the idea that the knowledge of learners was shaped based on their interactions in social settings. I argue that social networking site promotes the development of communication and social skills and encourages dialogue and collaboration between members as in social constructivist theory. I assume it gives space for learners to dialogue, collaborate and construct knowledge. The new knowledge should be introduced in this environment to be discussed and solved. Figure 3.3 illustrates my assumption of the interaction on the social networking site based on the theory of social constructivism (adopted from Woo & Reeves, 2007). Finally, I assert the 'fluid nature' of constructivist learning which should require teachers' consideration as each learner will construct knowledge differently as a result of the differences in prior knowledge, and the variety of ways of constructing new knowledge.

Figure 3.3: Interaction on the social networking site based on social constructivism theory (adopted from Woo & Reeves, 2007).



In this study, I advocate that the design of learning activities associated with this social networking site environment has social constructivist theory foundations as it promotes learners to develop and construct knowledge via their communication and encourages dialogue and collaboration between students. These learning principles should encourage the student to acquire new knowledge and construct it based on the pieces that each community member contributes. Also it facilitates and enhances social learning by using methods which include the social networking activities that promote collaborative working. The teacher can guide students in their learning. I assume that reflection and feedback principle will be prompted in this environment.

3.2.2 Affordance theory

The word "affordance" was presented in the ecological psychology field by the perceptual psychologist J. J. Gibson (1977, 1979). He defines the affordances of the environment as *“what it offers the animal, what is provides or furnishes, either for*

good or ill. An affordance refers to both the environment and the animal and implies the complementarity of the animal and the environment” (Gibson, 1979, p. 127). According to Gibson, affordances refer to the actionable properties between the environment and an object (a person or animal). He argued that *“I mean by it something that refers to both the environment and the animal in a way that no existing term does. It implies the complementarity of the animal and the environment”* (Gibson, 1986, p. 127). To Gibson, affordances are relationships. They exist naturally: they do not have to be visible, known, or desirable. Norman (1999), in contrast, uses this term to refer to *“the perceived and actual properties of the thing, primarily those fundamental properties that determine just how the thing could possibly be used”* (Norman, 2002, p. 9). McLoughlin and Lee (2007) define an affordance in the same way as Gibson, in other words, *“an affordance is a ‘can do’ statement that does not have to be predefined by a particular functionality, and refers to any application that enables a user to undertake tasks in their environment, whether known or unknown to him/her”* (p.666). The Computing Dictionary (1998) defines “affordance graph” as *“a visual clue to the function of an object”*. For example, the affordances of blogging are not typing and editing posts, they could be idea sharing and interaction.

Many researchers have compared Gibson’s and Norman’s notions of affordances e.g. (McGrenere & Ho, 2000; Oliver, 2005). My aim here is to clarify their definitions and present my assumption after reviewing the literature related to my study. In the affordance theory, According to Gibson the term ‘affordance’ refers to the possible actions that can be done on the environment, and that depends upon our perception of the environment. Gibson assumes that the properties of the environment give a clue as to possible actions which are perceived directly and immediately (Ware,

2004). According to this theory, our interaction with the environment is based upon our perception of what it affords to us. As an example, our perception of a tree depends upon its size and shape; which *affords* climbing or resting under it. McGrenere & Ho (2000) present three fundamental properties of Gibson's affordance:

- 1- *An affordance exists relative to the action capabilities of a particular actor.*
- 2- *The existence of an affordance is independent of the actor's ability to perceive it.*
- 3- *An affordance does not change as the needs and goals of the actor change. (p.1)*

Greeno (1994) discussed Gibson's concept of affordance. He claimed that the concept of affordance is not clear and confusing. He highlighted the importance of where to locate the term affordance. Greeno (1994) explained his point by giving the example of a pen: is the affordance it has for writing given by the property of the pen, or of the person, or is it dependent on being perceived by the person? He describes Gibson's concept as:

The affordance is a property of whatever the person interacts with, but to be in the category of properties we call affordances; it has to be a property that interacts with a property of an agent in such a way that an activity can be supported. (Greeno, 1994, p. 340)

For example a chair might be perceived as something to sit on or to be used as a ladder, or something else. The difference in perception leads to different affordances of the chair. As a result there is no "correct" use for the chair, but how each person perceives its affordances. While the doorknob used to open the door is based on the property of its shape, in some cases the property of the user (not human) will not

afford it for opening. Consequently, there is not an exact affordance for each object or environment. It is the relationship between the user and the environment and the properties of both that form the concept of affordance.

In Norman's perspective, "*affordances provide strong clues to the operations of things. When the affordances are taken advantage of, the user knows what to do just by looking: no pictures, labels or instructions are required. When simple things need pictures, labels or instructions, the design has failed*" (Norman, 2002, p. 9). He believes our knowledge and old experiences affect our interpretations of an object which affects our perception of the affordances of this object. Norman presents how a person can deal with many different things each day some of them seen for the first time. He presented this question: "*When you first see something you have never seen before, how do you know what to do?*" His assumed answer is: "*The appearance of the device could provide the critical clues required for its proper operation*" (Norman, 2002, p. 39).

Sadler and Given (2007), discussed Gibson and Norman's concept of affordances. The former point of view came from ecological psychology, where affordances are understood as being about how the environment is perceived, Norman assumed that "*our past knowledge and experience are applied to our perception of the things about us*" (Norman, 1988 cited in Sadler and Given, 2007, p.117). Corresponding to Norman's concept of affordance, there are real affordances and perceived affordances; in designing an object there is an intended use built in while the user perceives some of these intended affordances but might not see them all or might see them differently from the designer's intended 'real affordances' (ibid). Some times in a designed object the designer intended affordances which differ from the user's perceived affordances: the 'affordances gap'. This gap occurs when the user

does not understand the intended actions of the designed object. As Norman describes:

Affordances specify the range of possible activities, but affordances are of little use if they are not visible to the users. Hence, the art of the designer is to ensure that the desired, relevant actions are readily perceivable. (Norman, 1999, p. 41)

Norman's view is somewhat in conflict with the views of some Gibsonian psychologists. Norman asserts that the affordances are intended in advance at the design stage, 'intended affordances'; whereas the "user perceived affordances" amount to saying that the design is successful or at least the intended affordances were perceived by the user. He believes that good design should make affordances explicit, while Gibson argues it is what users perceive while interacting and acting in the environment that matters. On other hand, both researchers agree that the affordances are based on the properties of the environments and the past knowledge of the user.

Jones, Dirckinck-Holmfeld, and Lindström (2006) argue that technologies - seen from the practice of design - have properties and criteria and that give us a certain kind of practice. They argue that:

Having been designed with certain purposes in mind, certain understandings of communication, interaction and collaboration were embedded in the design process. [...] These properties are not determinants of the use made of them, but they make available certain features that can become affordances in use, and make some kind of practice more available than others. (p.40)

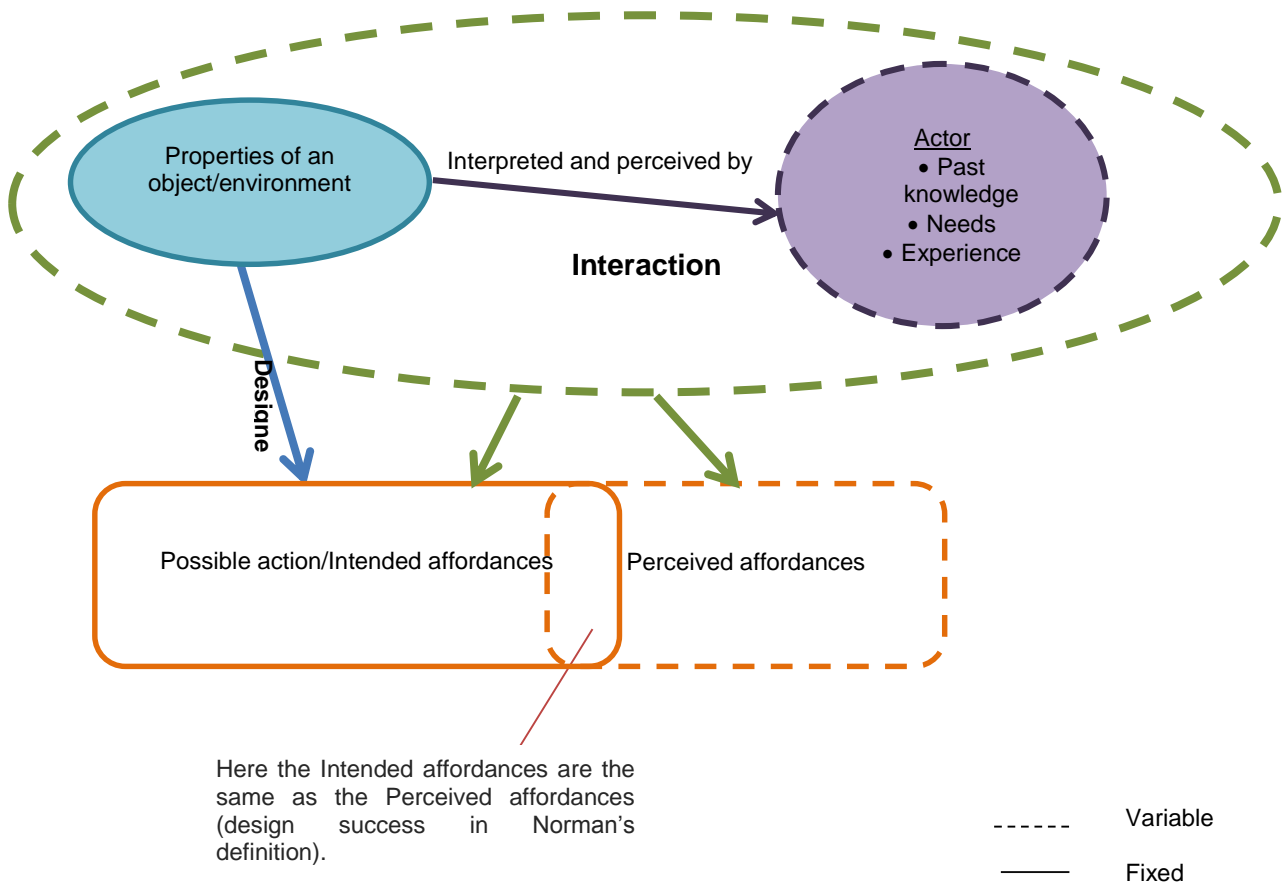
I assume that the environment, if it is designed (not natural e.g. rock or tree), has intended affordances that shape the properties of the environment in the designer's

mind, its 'usability' should be clear to understand and interact with. When the user interacts with environments/ objects, the affordances are based on the actor's perceptions which result from the relationship between the actor and the environment, 'real affordances'.

Figure 3.4 illustrates my point of view of the affordances. For example, the knife is designed to afford cutting so it has the properties of being sharp, long metallic and handy to hold. All these properties are designed for cutting affordances, as presented on the left hand of the figure. How does the user use/interact with it? It is the perceived affordances. When the user needs to change from cutting, for example, to turning a screw, s/he will interpret the sharp head of the knife as a screwdriver, so there is an interaction between the actor and the environment but the affordance is changed according to what the actor perceives. How the actor will interpret the properties of the environment is based on her/his past knowledge, needs and experiences which vary from one actor to another.

In this research, I assume that the social networking site in my study (Hive or Elgg application) is designed to afford social interaction (intended affordance). The designer of this environment embedded certain criteria for this purpose. In this study, the course design and activities are based on principles applied from perceived affordances from previous uses. In addition, I assume that the students, when they interact with each other on the Hive, may make use of the Hive for other things too, according to their needs, past knowledge and experiences; so social networking site has different affordances for each student.

Figure 3.4: My point of view of the affordances



3.2.3 The pedagogical affordances of ICT

Affordance theory has been applied in many disciplines. Norman first introduced the term in the areas of graphic design and human computer interaction. ICT education was one of the fields that introduced affordance theory. Conole and Dyke (2004a) argue that to use the technologies effectively to support learning and teaching we should have a clear definition of ICT affordances. According to Kirschner (2002, cited in McLoughlin & Lee, 2007):

Educational affordances can be defined as the relationships between the properties of an educational intervention and the characteristics of the learner that enable certain kinds of learning to take place. (p.666)

In my study I will define an affordance of education ICT as an action that the learner can/ cannot perform based on the properties of the ICT environment and his/her prior knowledge, needs and the situation in which learning takes place. However, I strongly argue, as do Lai et al., that it is “*not the technology itself but the interaction between technology and pedagogical practice that affords possibilities for better learning*” (Lai, Yang, Chen, Ho, & Chan, 2007, p.335). I assume that the pedagogical affordances of the technology are not fixed; they emerge while the learning takes place with appropriate tasks that support the pedagogy. Beetham and Sharpe (2007) claimed that designers for learning should:

Take account both of how they [technologies] support the learning task and of how they will be experienced by individual learners - the different 'possible relationships' between tasks and learner that they might mediate. (p.34)

Recently many studies have focused on the affordances of computer environments and explored the pedagogical affordances of computers. For example, Wijekumar et al. (2006) studied the affordances of computers, deviating from Gibson's definition. They carried out two studies. The first study was in K-12, where a system called Intelligent Tutoring for the Structure Strategy (ITSS) was designed to teach a reading strategy. The findings show that the students perceived the affordances of gaming and communication. The second study was undertaken with undergraduate students. Students enrolled in three online classes. The results from this study indicate the same affordances as the first study; also they added resources for completing homework affordances. Finally the paper of Wijekumar et al. concluded by presenting two techniques to change the students' perceived affordance of computers from gaming to learning (Wijekumar, et al., 2006).

Most ICT researchers focus on the design of the affordances according to Norman's definition. In the next paragraph I will present some of these studies. The mobile technology affordances have also been researched. A study was conducted on two classes at an elementary school using mobile technology. Pedagogy using Personal Digital Assistants (PDAs) was introduced to one class. The findings show that the class using PDAs improved in knowledge creation. The study concludes with some of the educational affordances of mobile technology: "*First, mobile technologies 'afford' real-time information whenever and wherever learners need it. Second, mobile technologies 'afford' a rapid access interface for note taking, such as photo taking and sound and video recording*" (Lai, et al., 2007, p. 328).

Weller, Pegler and Mason (2005) examined how four innovative internet technologies (blogging, audio conferencing, instant messaging and Harvard's Rotisserie system) were incorporated into one course at The UK Open University. The students' experience of using these tools was of enrichment and perceived as positive. Also, the study found that each technology supported one of the learning phases. Kong and Kwok (2003) discussed how to develop a learning environment to fulfill needs situated in subject matter and ways to offer affordances for learners to interact within complex classroom environments.

Tanner and Jones (2002) argue that integrating the affordances of ICT into the pedagogical structure of the Postgraduate Certificate of Education (PGCE) course has not only widened access but also improved the quality of learning for the face-to-face students. The University of Wales, Swansea, introduced a mathematics PGCE course to distance learning. The project replaced, and was an alternative to some of the college-based elements by conferencing email, web-based bulletin boards and streaming video. A tele-collaboration project (Hauck & Youngs, 2008) confirmed that

each technology has educational affordances and supports different levels of interaction.

In addition, the pedagogical affordances of ICT have been identified by analysis of the literature on the use of technologies (Conole & Dyke, 2004a; McLoughlin & Lee, 2007; Shabajee, McBride, Steer, & Reynolds, 2006). McLoughlin and Lee (2007) reviewed the current Web 2.0 research and practice and delineated some examples of the affordances of the social software tools with a full description of each affordance. I will mention the affordances only, as follows: “*connectivity and social rapport, collaborative information discovery and sharing, content creation, knowledge and information aggregation and content modification*” (p.667). They argued that:

Social software tools such as blogs, wiki, social networking sites, media sharing applications and social bookmarking utilities are also pedagogical tools that stem from their affordances of sharing, communication and information discovery (p. 666).

Shabajee et al. (2006) explored the new technology Semantic Web features. They found it offers additional pedagogical affordances than the existing technologies. Finally Anderson (2004, cited in McLoughlin & Lee, 2007) argued “*the greatest affordance of the web for educational use is the profound and multifaceted increase in communication and interaction capability*” (p.42).

3.3 Social networking sites in education

I did an extensive review of relevant literature for using social networking sites in higher education. Saudi Arabia, like other developing countries, has a relatively short experience with use of social networking sites in education. Therefore, there is a shortage of studies that investigate using social networking sites in higher education in Saudi Arabia. The earliest use of Web 2.0 technologies in university occurred in

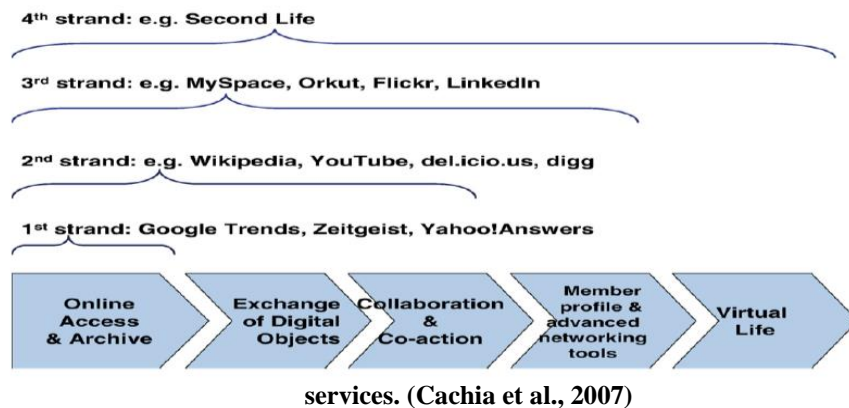
2004 (Franklin & Harmelen, 2007). As a result of the new use of Web 2.0 in education in Saudi Arabia and in other Arab countries, studies in Saudi Arabia related to this field are rare. In addition there is little research into social networking sites in education in general. Similar to my argument, Shen and Khalifa (2009) argued that research on Facebook in particular, and social networking sites in general, is very limited and lags behind practice, especially in non-western countries. Consequently, I have expanded my review to include the use of Web 2.0 tools in general and Facebook as an example of a public social networking site. Also it is important to notice that most of the reviewed literature relevant to Web 2.0 is from non-Saudi institutions for the same reasons.

It is important to base research on previous studies to have acceptable findings. Therefore, I made a clear boundary of my search and divided my search into four sub areas: Web 2.0 studies in social networking sites (SNSs) and Facebook, Web 2.0 studies in general, practices of using social networking sites in education (institutional and practitioners), and implications of applying Web 2.0 in education. These studies could help to identify any gaps in the literature in this field and provide me with theoretical underpinnings for analysing and understanding the findings of the current study.

To date, there is a contradiction within the use of social networking sites for educational purpose. There is a belief it is not suitable for academic purposes (Charnigo and Barnett-Ellis, 2007 cited in Wang, Scown, Urquhart, & Hardman, 2012). On other hand, there is the belief that social networking sites are imbued with applications that could serve educational purposes. This argument is extended by the fact that Web 2.0 has the properties of distributed authorship, collaboration and social networking (e.g. Alexander, 2006; Wang, et al., 2012). Cachia, Compano and

Costa (2007) discuss Web 2.0 applications and classify them based on the level of interaction and socialization. Figure 3.5 illustrates their classification.

Figure 3.5: Level of interaction and socialisation for Online Social Networks and other related online



3.3.1 Facebook Studies

Few studies to date have examined the social networking sites in education, particularly in higher education. Most studies I found regarding social networking sites focused on Facebook as an example of a social networking site. Therefore I will explore these studies and other studies about Web 2.0 applications. Most of the Facebook studies were quantitative surveys of friends, ages, uses, gender etc., or theoretical and predicative. In other words, the research lags far behind the practice (Hew, 2011; Shen & Khalifa, 2009; Teclehaimanot & Hickman, 2011; R. Wang, et al., July 2012).

Despite Facebook's popularity in social life, some educators do not encourage students to use Facebook in education. Some critics predict that SNSs may distract students' learning (Cassidy, 2006 cited in Selwyn, 2009a). In contrast, some researchers claim that social networking sites have a number of features and qualities that make them amenable to educational uses; for instance, it is embedded

with bulletin boards, instant messaging, email, and download/upload videos. These features may encourage students to engage in creative and social learning processes: student-generated content, student–student communication (peer feedback, and interactions between students), and promoting critical thinking, access to wide and varied sources of information and its support for student collaboration and dialogue (Anderson, 2007 ; Gray, Annabell, & Kennedy, 2010a; Madge, Meek, Wellens, & Hooley, 2009; Pempek, Yermolayeva, & Calvert, 2009; N. Selwyn, 2007; Selwyn, et al., 2008; Wang, et al., July 2012). It is argued that some uses of SNS may contradict current pedagogical paradigms. However social networking may promotes interactions between learners which support informal learning, as well as some formal educational objectives occur (Gray, et al., 2010a; Selwyn, et al., 2008). However, it is claimed that social networking sites play an essential role in shaping future society because many young students in the Arab world use it (Shen & Khalifa, 2009).

As mentioned previously, participation in social networking sites has dramatically increased in recent years. It is ubiquitous among students. For example, Facebook was ranked as the social media site with the most traffic in the world (Wang, et al., 2012). Facebook is generally considered the widespread social networking site among higher educational students. For example, in the USA, 90% of undergraduate students participate and use Facebook (Ellison, Steinfield, & Lampe, 2007 cited in Hew, 2011; Lampe, Wohn, Vitak, Ellison, & Wash, 2011). Caruso and Salaway (2008 cited in Gray, et al., 2010a) found that 49.7% of US students surveyed were using social networking sites to communicate with classmates about course-related topics. It has also become one of the most popular social networking sites used by British students (Madge, et al., 2009). An Ipsos MORI (2008 cited in Gray, et al.,

2010a) study of first-year students in the UK reported that 37% of them discussed their coursework on a social networking site; also 81% of them found that doing these activities on the site helped them in their learning.

The previous figures (3.1 and 3.2) show the increasing number of Facebook users, and it is even more common among undergraduate students. Lampe et al. (2011) reported that students in higher education prefer to use Facebook over other networks. Stutzman (2006, cited in Teclehaimanot & Hickman, 2011) found that most of the undergraduate students in his study used Facebook (90%). The majority of medical students (87%) had used Facebook (Gray, et al., 2010a). In addition, it found 78.6% of the participants in a study of four-year undergraduate college students had an e-profile in Facebook (Fogel and Nehmad, 2009 cited in Teclehaimanot & Hickman, 2011) It is predicted that 90% of new students enter the university with full knowledge and use of the social networking site (Hughes, 2009).

Lampe and others (2011) found Facebook widespread among college students to socialise and communicate with each other. As a result of large number of Facebook users in higher education, it is suggested that Facebook should be used in preference to other SNSs in higher education learning (Teclehaimanot & Hickman, 2011). Franklin & Harmelen (2007) witnessed some cases of lecturers using social networking systems in their courses However; they found that many students do not welcome their teachers invading these spaces.

To date, Facebook has received most research interest. In the educational field, for instance, some interest has focussed on students' use of social networking for educational purposes (Lampe, et al., 2011; Madge, et al., 2009; Selwyn, 2009a), the use by educators of SNS in their pedagogic practice (Barden, 2012), related issues

of trust and privacy (Gross & Acquisti, 2005; Pempek, et al., 2009), and the correlation between Facebook use and self-esteem and college adjustment (Kalpidou, Costin, & Morris, 2011). The communication between students and their classmates has been investigated (Salaway et al., 2008, Lampe, et al., 2011; Madge, et al., 2009; Subrahmanyam, Reich, Waechter, & Espinoza, 2008). More research about students' communication found that students used these sites to discuss academic issues in formal and informal ways (Madge, et al., 2009; Selwyn, 2009a). Student-teacher interaction on Facebook has also been studied (Teclehaimanot & Hickman, 2011).

The students' use and activities on Facebook have been explored and analysed by many researchers. For example, a study conducted a survey to explore college students' online activities. The findings revealed that students used Facebook for socialization; they communicate with people from their offline lives e.g. families and friends using social networking sites to report their typical activities (Subrahmanyam, et al., 2008). A survey of university students revealed that they used Facebook most regularly to connect with their social lives at university. They perceived Facebook to be used for socializing with others rather than for formal learning and teaching. However a minority of the students used it, sometimes informally, for learning purposes e.g. for student-to-student interactions about academic work-related matter, organising group meetings for academic project work, revision and coursework queries, but they did not use it for formal teaching purposes (Madge, et al., 2009). A study exploring Facebook usage among Arab college students found a gender difference, where female students were reported to be significantly more active than male students. These female students, in UAE, reported that Facebook was more important for extending their social networks, getting information, and experimenting

with different identities (Shen & Khalifa, 2009). A diary-like measure and survey was used to assess 92 undergraduate students' activities on Facebook. Findings showed that students spent nearly 30 minutes a day on social interaction. In addition Facebook provided them with an opportunity to display and develop their identities (Pempek, et al., 2009).

In this section I will review a number of studies that seem to suggest that there are some potential benefits of using Facebook in formal education. For instance, a study was conducted at the University of Auckland and at Manchester Metropolitan University on how their students used Facebook. The two studies explored the educational potential of Facebook, using interviews and focus groups, for students and faculty. In conclusion, the researchers suggested guidelines for using Facebook, and other social networks, in higher education. The researchers developed these guidelines from the literature and their study, and they recommended examining them in educational practice (Wang, et al., 2012). A survey was used to examine how undergraduate students used Facebook to engage in classroom-related collaborative activities. An interesting finding was that some students were using Facebook to collaborate around classroom activities as a tool for classroom organising (e.g. arranging study groups) (Lampe, et al., 2011). Lampe et al. predicted that this may lead to new forms of classroom interactions.

A study by Gray, et al. (2010a) on medical students at one university found that half of the participants were open to using Facebook in their education while 25% of them reported that they already used it for educational purposes. The students sought to use Facebook groups to focus on topics relevant to developing medical knowledge, skills and attributes. All participants spoke positively about Facebook's potential to support their learning. Some found Facebook to be convenient for peer

learning as well as enriching. All students perceived Facebook as a social study space beyond formal education. Selwyn (2009a) investigated the education-related use of Facebook by 909 undergraduate students in a UK university. He found that they used Facebook for the *“post-hoc critiquing of learning experiences and events, the exchange of logistical or factual information about teaching and assessment requirements, instances of supplication and moral support with regards to assessment or learning, or the promotion of oneself as academically incompetent and/or disengaged”* (p.157). Facebook provided a continuation space of how students talk to each other in other contexts or what is called the ‘backstage’ area.

Barden (2012) carried out a study examining Facebook as a catalyst for critical literacy learning by five dyslexic students. The study revealed that Facebook *“engaged the students in active, critical learning about and through literacies in a rich and complex semiotic domain”* (p.123). Also the students’ engagement helped them to have a positive attitude to both dyslexia and themselves. He concluded that social networking sites could potentially play a role in developing critical literacy skills. From the above researches, It was demonstrated that the Facebook have a potential educational used in higher education. Nevertheless the affordances of the social network sites did not explored. My claim concurred with Wang et al. (2012).

An interesting review of current published research studies on Facebook use by students and teachers indicated few educational uses. Students use Facebook mainly to keep in touch with friends, exposing personal information about themselves with its attendant privacy risks (Hew, 2011). However, other studies have supported notions of using SNS such as Facebook in education; for instance Hewitt and Forte, (2006 cited in Wang, et al., 2012) found about 70 % of students surveyed felt “comfortable” with their faculty being on Facebook. In addition, 53% of the students

respond positively to the use of Facebook for formal teaching and learning purposes. Also they suggested a number of ways in which Facebook could be used (Madge, et al., 2009). Ipsos MORI (2008 cited in Selwyn, et al., 2008) survey of UK undergraduates found that over half saw social networking sites as potentially useful in 'enhancing their learning'. Opinion was divided over teachers using social networking sites for teaching; a third thought their teachers should use social networking sites for teaching but over a quarter said the opposite; they asserted that social networking sites should not be used for teaching. While, the majority of Saudi students (70%) in the Industrial Engineering department of King Abdulaziz University preferred Facebook to sharing Knowledge with their department (Balubaid, 2013).

Others areas of using Facebook have been investigated. A study by Junco concerned the relationship between Facebook use and engagement in learning activities. He found that time spent on learning activities could be predicted based on time spent on Facebook. The study suggested that the students should be helped to use Facebook in learning activities (Junco, 2012). Another study looked at the relationship between attitudes and use of Facebook based on self-esteem and college adjustment. The study found that, students used Facebook for social communication with their peers, their relationships would be positive in college life. Also the results showed a positive correlation between using Facebook and college adjustment (Kalpidou, et al., 2011).

In Carnegie Mellon University, more than 4000 students' online behavior using Facebook was analysed. It was found that students provided large amounts of personal information on Facebook and few changed the privacy setting on their profile. The paper concluded that there were potential privacy risks as students exposed personal information (Gross & Acquisti, 2005).

While the use of social networking sites has expanded rapidly, little research has investigated the potential effects of using them in education. For example a study investigates the relationship between using social networking and academic performance by applying a survey on university students in Saudi Arabia, which found no relationship between these two factors (Alwagait, Shahzad & Alim, 2014). Also, Pasek, More, and Hargittai (2009) investigated the relationship between Facebook use and students' grades using three different data sets of large, cross-sectional and longitudinal samples. The results suggested that the relation between Facebook use and grades was not a negative one; interestingly the study found that the students who frequently used Facebook had high grades.

The studies cited above have all concerned SNS uses and effects, as reviewed by (Hew, 2011). He analysed research studies about the use of Facebook by students and teachers. He identified three main research topics: *“(a) students’ Facebook usage profile, (b) the effects of using Facebook, and (c) students’ attitudes toward Facebook”* (p.664). In addition, studies on education related uses showed that students used Facebook’s affordances to support their informal learning. Finally, most studies above applied a quantitative approach, specifically the survey. Subrahmanyam et al. (2008) argue that self-report surveys fail in that *“participants’ responses may have been subject to biases, incorrect estimates, faulty memories, and other similar problems”* (p.432). Nevertheless many educators and researchers predict the educational potential of SNSs, even though Facebook is designed not for academic use and, of itself, is not destructive of learning outcomes, and could be used in ways to help knowledge acquisition. I agree with Selwyn et al.’s (2008) claim about Facebook that *“the internet has created greater opportunities for access, debate and transparency in the pursuit of knowledge than ever before”* (p.10).

3.3.2 Education-related use of Web 2.0

To my knowledge, there is a lack of useful and relevant studies in Saudi Arabia on the use of Web 2.0 in education, so I will present some studies on Web 2.0 from other countries, bearing in mind the differences in context. I searched various databases using key terms, 'Saudi Arabia' and 'Web 2.0' and 'Education and found several papers but on examination, they were not relevant to pedagogy or not original research. This decision was based on analysing SNSs' characteristics where it was found that most Web 2.0 tools were inherent in SNSs (e.g. blogs, podcasts and bookmarks); also there is a lack in studies relevant to SNSs, which is why I included some studies of Web 2.0 with this review.

Many researchers have thought that integrating technology into pedagogical, specifically web based technologies, has the potential to encourage active student inquiry, prompt communication, interaction and critical thinking, re-engage individuals with learning, and offer a positive forum. Some commentators contend that a radical change to the educational system with these technologies could promote the development of new ways of thinking, learning and sharing. Others suggest that Web 2.0 services will motivate students to engage in authentic learning. Interactions on Web 2.0 can help to shape identity and roles, values can be developed and learned, and perspectives can be widened by interacting with a wider range of learners and resources (Holcomb & Beal, 2010; McLoughlin & Lee, 2007; Redecker, 2009; Selwyn, 2009a; Selwyn, et al., 2008; Thomas & Li, 2008). The capacity of social networking services are suggested to "*mirror much of what we know to be good models of learning, in that they are collaborative and encourage active participatory roles for users*" (Maloney 2007, p. 26 cited in Selwyn, 2009a).

In the following section, I will present and explore studies of some specific Web 2.0 applications, along with studies of Web 2.0 technologies in general. I will explore blogs, wikis and podcasts as examples of Web 2.0 technologies.

Blogs

The blog applications present an educational potential in higher education in Saudi Arabia. A study of the satisfaction of the students on a blog interaction showed that most students accepted the idea of using blogs in course communication; also it provided the instructor with direct feedback from students (H. Al-Khalifa, 2008c).

The affordances of blogs are many in education. As Norton and Hathaway (2008) study found, blogs prompt and facilitate communication, influence the formulation of ideas, facilitate reflective thinking, portfolios, the publishing of creative writing, planning and designing messages. They argued that there are new ways to integrate blogs into educational which have not been discovered yet. Fessakis, Tatsis and Dimitracopoulou (2008 cited in Lim, So, & Tan, 2010) designed learning activities using blogs; these approaches encouraged students to engage in collaborative learning and reflective thinking. Downes (2005) claimed that blogs were used widely in education; while teachers encouraged their students to blog. Rubio, Martín and Morán (2010) added that blogs facilitate the acquisition of social skills and a sense of responsibility. Nevertheless, they found a lack of knowledge concerning the use of these tools in education. Downes (2004, cited in Thompson, 2007) identified nearly 50 pedagogical uses of blogs in formal learning, for example, instructors could use blogs to post information about the course; also they could create links to other content to the blogs. Collis and Moonen (2008) argued that the majority of these ideas could be integrated within higher education courses. As an educational

resource, blogs could be used to produce dynamic learning environments for course information retrieval, for the teacher to provide online information, assignments, announcements, news and feedback to students; and as digital portfolios to collect and present students' work (Franklin & Harmelen, 2007). Coutinho (2007 cited in Norton & Hathaway, 2008) found blogs complemented and enriched pre-service teachers' learning, "*allowing them to engage in critical thinking and collaborative and constructivist practices*" (p.167) as they reported their feelings after their educational experience. In addition blogs have a timing feature by which students can review stories and other comments over a period of time (Alexander, 2006). Rosen and Nelson (2008) suggested that blogs could be used collaboratively. Finally Redecker (2009), in her review suggested the benefits of blogs as enhancing: reflection as well as analytical, user-centered, participatory learning, communication and engagement in learning, critical and creative thinking, motivation and participation, writing skills, sense of responsibility, authorship and ownership, opportunities for students to experiment with different personae and expand their friendships, and developing their social and civic skills.

Wiki

The wiki application has a number of particular characteristics that encourage the educator to use it with their students. Achterman (2006 cited in Norton & Hathaway, 2008) described five characteristics of wikis: first, it is an available application and easy-to-use where everyone can create wiki sites; second, wiki sites facilitate the individual content creator or a group of creators; third, users not only create content, they can also hyperlink it to other content or web-based sources; fourth, reflection and metacognition can be incorporated with wiki content creation; fifth, the characteristic of tracking tools provides information on when and who edits the

content and acts as a means for tracking progress. Also users can create, edit, and share wiki sites without any permission (Pifarré & Kleine-Staarman, 2011). In addition, wiki can present a characteristic called the *wisdom of crowds* (Surowiecki, 2004 cited in Rosen & Nelson, 2008) in which students use their collective intelligence to create the content of the site. The *Wisdom of Crowds* is the title of a book written by James Surowiecki (Anderson, 2007).

These characteristics make wikis a valuable tool in educational contexts. Wiki is a powerful tool in facilitating meaningful collaborative learning experiences (Franklin & Harmelen, 2007; Huang & Nakazawa, 2010; Norton & Hathaway, 2008; Pifarré & Kleine-Staarman, 2011; Redecker, 2009; Rubio, et al., 2010; Thompson, 2007; Trentin, 2009). Some educators have argued that wiki is the premier tool for collaboration (Rosen & Nelson, 2008). These collaborative works through a wiki motivates students' active participation (Al-Khalifa, 2008d; Huang & Nakazawa, 2010). Wiki can be a place for collaboratively created and edited textbooks (Franklin & Harmelen, 2007). A study by Al-Khalifa and her students in the Department of Information Technology produced an Arabic book using Wiki as a collaborative writing system. The study showed how this helped students to gain a deeper understanding of the course material and they were encouraged by the wide acceptance of the book by other students (Al-Khalifa, 2008d). Alexander (2006) suggested that Wiki could support collaborative projects in writing-intensive courses. He called it 'social writing platforms' which offer an alternative platform for writing and editing. Also he believes that wikis could aid composition practice. Similarly, wiki has been used on a group of students studying a course in Operating Systems, at the Information Technology Department, King Saud University. The findings of the study show improvements in students' writing and research skills (Al-Khalifa, 2008b).

Wikis can be used for teacher and student interaction and as platforms for educational resources and information (Huang & Nakazawa, 2010). Franklin and Harmelen (2007) claim that student creation of learning materials is already occurring; where some students contribute to Wikipedia articles as an obligation of their course work, as they acknowledge that Wikipedia is an educational web site that contains learning materials. Wiki can be used as a content repository; students can contribute and share experiences and contents. Wikis can be used to support teamwork skills and consensus building, seminars, debates, brainstorming, collaborative writing, and group discussions on a given subject which promote student engagement (Bajt, 2011; Rubio, et al., 2010; Virkus, 2008).

In a similar vein, a study by Huang and Nakazawa (2010) explored the perceived interaction levels between graduate students and their instructor when using wiki applications in reading assignments. The findings showed that “*learners perceived a significantly higher level of instructional interaction with their peers than they did with the instructor*” (p.233). Similarly, Pifarré and Kleine-Staarman (2011) explored the characteristics of the collaborative interaction process. They claim that the Wiki environment supports students’ development of an inter-subjective orientation towards each another and supports dialogic space creation to construct new knowledge.

However, one of the main issues raised in using collaborative learning is evaluating the contribution of each student, and using wiki raises the same concern. Trentin (2009) explored methods to evaluate individual contributions to collaborative learning work based on co-writing in Wiki applications. The results demonstrated the added value given by the proposed method based upon the information traced

automatically by the Wiki software. Also the findings showed that some automatic functionalities embedded in Wiki helped to evaluate the members' contributions.

In educational contexts, Wiki can be used as course websites, where more students can participate with their comments and ideas; it can also support staff collaborative project work (Franklin & Harmelen, 2007). Baird and Fisher (2005 cited in Huang & Nakazawa, 2010) claim that Wiki provides constructive and collective learning processes within learner-centered environments, where learners can interact with each other. However, Wiki as a tool does not afford these features alone, It is also suggested that instructors need to encourage and sustain learners' interactivity on Wiki sites (e.g. writing, reviewing and revising) (Al-Khalifa, 2008b; Huang & Nakazawa, 2010). Others found that students got lost and wanted more structure in the learning process when using Wiki for learning (Wheeler, Yeomans and Wheeler, 2008 cited in Lim, et al., 2010). And yet others, such as Lim and his team (2010), noticed that students did not read all the content created by others in the collaborative activities on Wiki.

Despite the above affordances of Wiki and several studies exploring its use in education, it is relatively unutilised in educational contexts (Achterman, 2006 cited in Norton & Hathaway, 2008) and research on using Wiki in educational contexts is scarce (Pifarré & Kleine-Staarman, 2011).

Podcast

The educational potential of podcasting has been identified by some researchers, for instance Deal (2007 cited in Norton & Hathaway, 2008), who suggests three uses for podcasting: creation and distribution of lectures, provision of extra educational materials, and student coursework where they are required to produce their own

podcasts. The researcher argues that there is little research on its educational value. However there is evidence that podcast tasks had the potential to support learning. For example, podcasts were identified as a tool to support collaborating learning (Norton & Hathaway, 2008). In another study, in which students created educational podcasts for their peers, the findings show that the activity was challenging and motivating the students. Nevertheless, the researchers recommend that the instructor should support students to focus on the cognitive aspects of the activity rather than on the technology (Lee, McLoughlin, & Chan, 2008).

Web 2.0 technologies

Recently, researchers have turned their focus on to means of incorporating the new web trends into the learning process and how to apply Web 2.0 (e.g. wiki, blogs, podcast and social networking sites) concepts to create new learning pedagogies (e.g. Anderson, 2007). Alexander (2006), for example, predicts a “*new wave of innovation for teaching and learning*” with potential for educational uses of Web 2.0. According to Alexander, e-social software is the key concept associated with Web 2.0 in education.

In order to apply the new technology in the educational context, the pedagogical affordances of the social networking application were researched. Many studies suggested these affordances and they did not emerge from the interaction between the user and the social networking applications. Social networking applications are predicted to allow learners to interact with each other at their own pace and according to their own needs in order to construct new knowledge, in which they communicate and collaborate in different ways via different media. Also Web 2.0 has been suggested to enhance the learning processes by personalisation of educational

experiences, promoting independent, autonomous and self-directed learners, and acquiring a variety of social skills e.g. connecting, interacting and collaborating successfully with a different people in different environments on a variety of tasks (see for example Bennett, Bishop, Dalgarno, Waycott, & Kennedy, 2012; Gray, et al., 2010a; Gray, Chang, & Kennedy, 2010b; London & Hall, 2011; Redecker, 2009). Franklin and Harmelen (2007) argue that Web 2.0 can support institutions in their aim to produce independent, autonomous and self-directed learners. London and Hall (2011) added that Web 2.0 provides for searching in a variety of information resources, facilitates data aggregation and analysis, and encourages sharing. In addition Web 2.0 promotes the communicating/writing process, publishing, sharing and obtaining feedback (Norton & Hathaway, 2008). Regarding art education, Buffington (2008) argues that the Web 2.0 opens new ways for collaboration, creation and critiquing in art education. Also Buffington predicts that students and teachers in art education may obtain great benefits from Web 2.0. Pifarré & Kleine-Staarman (2011) argue that the main educational affordances of Web 2.0 applications “*are communication, interaction and collaborative participation in large communities and in a global perspective*” (p.188). Kitsantas and Dabbagh (2010 cited in Bajt, 2011) claim that Web 2.0 supports self-regulated learning. They defined three levels of social interactivity: personal information management where students can use Web 2.0 tools to create a personal learning environment; social interaction and collaboration, information aggregation, and reflection on their learning experience.

Drawing on extant Web 2.0 research, McLoughlin and Lee (2007) explored the affordances of Web 2.0 and social software. The researchers argue that social software tools, such as blogs, Wikis, social networking sites, media sharing

applications and social bookmarking utilities, are also pedagogical tools based on their affordances: connectivity and social networking, collaborative information discovery and sharing, content creation, knowledge and information aggregation and content modification. Rosen and Nelson (2008) compared Web 1.0 with Web 2.0 and demonstrated that Web 2.0 tools enhanced students' participation and creation of knowledge, which is supported by social constructivist pedagogical theories. They argue that Web 2.0 tools have the potential to transform classes from teacher-centric, transmission instruction to student-centric, social constructivist. The study by Bennett et al. (2012) highlighted the potential learning value of Web 2.0 in higher education, with Web 2.0 tools' emphasis on active participation, user generation of content and collaboration. In a study by Crook (2012), students' use of Web 2.0 in and out of school was explored by focus group interviews. The researcher redefined the interaction on Web 2.0 so that it had significance in four areas of education: inquiry, literacies, collaboration and publication. Web 2.0 inquiries were used by many students and they helped with their schoolwork. Related to the collaborative aspect, many students (73%) reported that they did not use these tools to support collaboration around homework; however they interacted around the assignments and management questions. Regarding Web 2.0 publications, there was an intention to obtain peer feedback which led to difficulties in how teachers would assess the publication. Web 2.0 literacy was identified by many students where they worked with images and video (Crook, 2012). The studies above explored the affordances of the Web 2.0 applications based on the criteria inherent in the tools, these affordances do not emerged from the interaction between the object and the environments. I assume that these affordances follow the concept of Norman's affordances.

In other hand some research indicted the affordances of the Web 2.0 applications with Gibson view; nevertheless the research did not explore them clearly. For example one interesting study introduced Web 2.0 tools to teacher-learners for use in their classroom. The study concluded that the teacher-learners reported innovative ways to integrate Web 2.0 tools to support classroom learning. Unfortunately the study does not report these ways (Norton & Hathaway, 2008). It is also reported that the early use of Web 2.0 tools in universities was to encourage critical debate and support collaborative research and sharing of online resources (Sharples, Graber, Harrison, & Logant, 2009).

Despite the increasing interest among university educators in applying Web 2.0 technologies for new pedagogies, the affordances of Web 2.0 have not been utilised in pedagogies in higher education (Collis & Moonen, 2008). It is noticeable that many researchers have attempted to study how to incorporate them into classroom practice based on the potential educational uses of Web 2.0 (Albion, 2008; Bull, et al., 2008; Collis & Moonen, 2008; Franklin & Harmelen, 2007; Harmelen, 2008; Holcomb & Beal, 2010; Rubio, et al., 2010). It is noteworthy that many researchers have presented evidence on what Web 2.0 can afford to education institutions. It was found that, when appropriate pedagogical approaches to embrace the affordances of Web 2.0 tools were employed, learners gained positive learning outcomes (Fessakis, Tatsis, and Dimitracopoulou, 2008 cited in Lim, et al., 2010). Another suggestion was made by Holcomb and Beal (2010), who studied how to integrate Web 2.0 into social studies education. The researchers suggested that various Web 2.0 tools could be utilised to support and enhance pedagogy, in which authentic and interactive learning opportunities were provided for all learners, regardless of their location or socio-economic status. Furthermore, Web 2.0 was

predicted to contribute to future learning in three ways: creativity, expertise and collective intelligence. First, Web 2.0 enhances creativity through many modes of communication and interaction on a large scale. Second, it shares some features with expert systems. Third, Web 2.0 enhances individual thinking and fosters collective and collaborative intelligence (Cachia, et al., 2007).

The potential uses of Web 2.0 tools have been researched in many disciplines. For instance, uses in art education were presented by Buffington (2008) based on examples from teachers' practice. The author reported that Web 2.0 allowed students to participate in collaborative projects beyond the classroom; students could publish their artworks to wider audience using Web 2.0 e.g. blogs, YouTube, podcasts, and Wiki and obtain feedback. They could also communicate with other artists and thereby gain a better understanding of their work and that of others (Buffington, 2008). Norton & Hathaway (2008) reported that every week teacher-learners surprised themselves by integrating Web 2.0 tools to support classroom learning in innovative ways. The researchers concluded that "*Web 2.0 tools support and facilitate virtual collaboration, social interaction, publication and the social construction of knowledge, and that each tool affords a unique aspect to the whole*" (p. 170). In a confirmation of earlier research, Redecker (2009) found that students adapted Web 2.0 tools to their needs, using them in diverse and unexpected ways not planned by their teachers.

Moreover the students' perceptions of using Web 2.0 for learning and teaching are an important factor that helps ensure success in implementing Web 2.0 in higher education. Bennett et al (2012) found, after evaluating the implementation of Web 2.0 in three Australian universities, that some of the cases were more successful than others, especially when most students saw the value of using Web 2.0

technologies for learning and teaching as a result of their experience with these tools. In addition the perceptions and attitudes of Web 2.0 users on integrating Web 2.0 in education have been explored. One study conducted a survey after teacher-learners finished a graduate course to explore their perceptions of their learning experience of integrating Web 2.0 to support educational goals and learning activities. The survey showed the majority of the participants (76.3%) agreed that using Web 2.0 tools helped them in the course and they rated wiki and podcasts as being a support to their collaboration (Norton & Hathaway, 2008). A study of three university courses that applied Web 2.0 tools found that participants held a positive attitude toward the potential for education of Web 2.0 (Hemmi, Bayne and Landt, 2009 cited in Lim, et al., 2010).

A further study exploring learners' use of Web 2.0 found that the majority would like to use Web 2.0 applications to support their learning in formal contexts. The researchers concluded that a sense of dissonance occurred around learners' in-and-out-of-school uses of Web 2.0 by teachers and institutions as well as students (Clark, Logan, Luckin, Mee, & Oliver, 2009). It was found that the majority of the teachers in another study thought it essential to apply this new technology as the new generation of students were so familiar with it (Rubio, et al., 2010). Another study investigated the differences between international and domestic Australian undergraduate students' use of Web 2.0, revealing differences between them in communication and content creation. The study concluded that Web 2.0 may be useful in the internationalisation of learning and teaching where it enhances online learning communities e.g. sharing experiences and the development of new ideas and perspectives (Gray, et al., 2010b).

Students evaluate the use of Web 2.0 in education as a result of their experience of using these technologies out of school. A study exploring learners' use of Web 2.0 in and out of school showed that social, leisure and entertainment purposes were the main uses of this technology. Also it revealed that learners were using Web 2.0 sites in and out of school to support schoolwork, which motivated them. Very few learners used these in informal learning (Clark, et al., 2009). In another study, students' activities and perceptions of learning with Web 2.0 were investigated. The study revealed that the students had a variety of activities on the Web 2.0. Based on the study findings, students can be classified into: "*researchers - consumers with little critical enquiry or analytical awareness; collaborators - sharing, gaming and communicating; producers and publishers*" (Luckin et al., 2009, p.94). Nevertheless there is a lack of teachers' and students' knowledge about using Web 2.0 applications in education (Rubio, et al., 2010). Finally, it is noteworthy that most users of Web 2.0 are considered as content consumers rather than creators (Hughes, 2009).

Nevertheless applying Web 2.0 tools in higher education faces many challenges. Authorship, assessment and collaboration issues have been concerns while using these technologies (Hemmi, Bayne and Landt, 2009 cited in Lim, et al., 2010). Some of these were addressed by Anderson (2007). He reported three significant challenges to the application of Web 2.0 in education. Firstly, the crowd and its power, where Web 2.0 encourages engagement of new communities and groups and, as a result, new issues like online identity and privacy will increase in intensity. Secondly, the growth in user created content will lose the author her/his rights, expert status and position in the hierarchy. Thirdly, the debate "*over the ownership of*

the huge amounts of data ... [on Web 2.0]... and the new ways of aggregating and processing it" (p.53).

There seem to be many studies that claim to implement Web 2.0 application in education and potential affordances of them but not many actually studied the pedagogic affordances in order to optimize the use of social network from a pedagogic perspective.

3.3.3 Institutional and practitioner practice

In this section I will explore some examples of applying Web 2.0 tools, especially social networking sites, in higher education. It is noteworthy that initially most institutions which used Web 2.0 applied it to manage learning and communicate with students and staff, then later for pedagogical uses. As mentioned earlier, in Chapter 2, there is currently no use of Web 2.0 tools in Saudi Arabian institutions; however some research has been carried out in the context of higher education. De Boer (2004 cited in Collis & Moonen, 2008) noted that "*Web technology in higher education was being primarily used for support of logistical processes rather than for pedagogical change*" (p.96). For instance, Twitter and Facebook are the most popular Web 2.0 tools used in Saudi Arabia universities, where 30 Saudi universities send "instant messaging" by Twitter and Facebook (Ahmad et al., 2013).

Many institutions in the UK apply Web 2.0 tools in their learning and teaching practice. For instance, in October 2005, the University of Leeds implemented a stand-alone system Media Wiki as wiki and Elgg, the staff blogging for experimentation. The system is in line with the university's pedagogical strategy plan. Associated with this implementation are training sessions and workshops, which present and identify good practice in using Web 2.0 tools in learning and teaching.

This initiative supports staff and student communication by providing a space “to communicate information, work as groups, share research findings, and take part in communities of practice” (p.10). Furthermore staffs use these tools to enhance research and learning management (Franklin & Harmelen, 2007).

Additionally, the University of Warwick has offered all its students personal blogs since October 2004, designed for general purpose personal blogs (The Information Services Working Group on Collaborative Tools, August 2006). The student blogging service was initially used to support campus life and community, with educational uses as secondary function. The Warwick Blogs project is available to all students, teachers and staff to enhance "self-publishing for all". The students start blogging and build their community as well as collaborate (McClellan, 2005; Anderson, 2007). The University of Warwick found that most of the postings were useful, based on the comments by other bloggers (Franklin & Harmelen, 2007). Another initiative of using Web 2.0, at Tufts University, installed new services for exploring the campus online; it helped their students, freshmen, staff, faculty, and campus visitors to locate buildings and find their way on the campus. This service ‘mashup’ was achieved by combining Google's mapping with institutional information and links (Thompson, 2007).

The University of Edinburgh designed an action plan to facilitate greater use of Web 2.0 tools based on Web 2.0 strategy. The University hosts wiki and blog services supported by the University’s single sign-on system (Franklin & Harmelen, 2007). The University of Westminster has created its own closed social networking site ‘CONNECT’ for its staff and students. The teachers and learners are encouraged to create their own profiles, upload videos, files and documents, join forums and discussion groups, create groups for social or learning purpose and publish blogs

and presentations. Interestingly, the incoming freshmen can join this network before physically joining the university (Selwyn et. al, 2008). Similarly, in September 2006 the University of Brighton implemented Elgg across the University, integrating it with their existing systems. Elgg software provides an easy way to add new courses to the system as a community. Also students and staff are free to create their own communities too. They use it to learn, as well as for purely social purposes (Franklin & Harmelen, 2007). Duke University ran a project to stimulate incoming students by giving iPods to each one. This initiative aimed to explore innovative ways of using Web 2.0 tools with digital technology in academic and campus life (Thompson, 2007). Five uses were identified after the project finished: publishing of course content, classroom and field recording, study support, and sharing and storing files (Belanger, 2005 cited in Norton & Hathaway, 2008). A pilot project by Manchester Business School integrates wiki system with a social network. The main aim is to help learners in local government communities interchange knowledge between members (Franklin & Harmelen, 2007). From the above examples it is noticeable that the educational institutions used Web 2.0 applications to support and manage the educational process, without any clear plan for enhancing pedagogy.

Another example of using social networking without any principles is for the general public. The School of Everything is an interesting example, which is a social networking service supporting whoever is interested in learning with whoever is able to teach, with the motto: "*Everyone has something to learn, everyone has something to teach*". It is important to the members of the school to update their profiles in the site and present the subject they are interested to teach. The members might be professional tutors or interested amateurs (Selwyn et. al., 2008).

In USA higher education, Wiki has been used at many universities. The University of Arizona, for example, deploys Wiki to help distance students on an information studies course. The students create their glossary of new technical terms on the course (Glogoff, 2006 cited in Anderson, 2007). The Geneseo Collaborative Writing Project at the State University of New York provides Wiki for students to enhance their communication and research skills. Also Oxford University has been using Wiki to support teachers with 'design for learning' (Anderson, 2007). Buffalo State College created Really Simple Syndication RSS a Web 2.0 application, into its website and made it available to all students. The subscribing students receive feeds of information to their computers automatically (Thompson, 2007).

However, as cited above, some institutions of higher education apply social networking sites in a variety of ways, most of them for managing the education process and few of them as potential models for educational use. The papers in the literature do not report pedagogical approaches or how to integrate the Web 2.0 tools in the pedagogy. As a result, there exists a need for more research to design a model to improve and promote these services in educational sitting.

Practitioners

Methods of applying Web 2.0 applications in pedagogy have not been reported in educational research. Nevertheless there have been successful individual examples of applying Web 2.0 tools to pedagogical practice. In Saudi Arabia, AL-Khalifa (2008a; 2008b; 2008c; 2008d) has many experiences of applying Web 2.0 tools (Twitter, blog, and Wiki) in her undergraduate students' courses. In these cases, the students have been connected to the course closely and share their experiences with other students. In another example, O'Neill (2005) implemented new technology

called Slides2wiki; he used this Wiki tool to share lecture notes with his students and encourage them to collaborate. The tool enables students to add their own notes to the content of the slides. O'Neil used Slides2wiki with several classes; it found that students perceived this technology positively.

In addition, blogs have interested some practitioners. For example, blogs have been applied in an American History class where students wrote their assignments in the blogs. An improvement in the quality of their writing was found (Rochette, 2007). Another example of the use of blogs was Buffington's (2008), who found that the most positive results came from using blogs as a research journal and note taking. The university students posted in their blog and wrote informally, sharing their experiences with their classmates about course content, their reading, and their research.

Cherim (2008) used Twitter in his classroom. This experience showed that using Twitter changed the dynamics of the classroom for the better as the students developed a sense of each other as people beyond the classroom space, which led to more productive classroom conversations. He argues that Twitter is an efficient tool for sharing and recording short inspirations. He concluded that Twitter can be utilised in any creative based class. In addition, podcast tools have been applied in educational practice. Miller (2006 cited in McLoughlin & Lee, 2007) provides podcasts every week which are records of informal discussions with students after each lecture. The students can discuss in depth the course material to clarify issues or enrich the course material with new issues. These series of podcasts, which are available to all members, encourage students to ask questions in advance and welcome them to attend the discussions.

Another use of Web 2.0 tools in a course found the students expressed a positive attitude to the use of these tools in future courses, while a graduate course at Columbia University applied Web 2.0 tools in students' practice by obligating the students to study the Web 2.0 tools and, corresponding to each tool's capabilities, try to apply them in their research projects (Mejias, 2006 cited in Thompson, 2007). It is noteworthy that practitioners have tried to use Web 2.0 technologies in their practice by trial and error and there is no clear framework for applying them (Conole, Dyke, Oliver, and Seale, 2004b).

While these studies all look at the possible practices of using social networking applications in education, a link with the pedagogical affordances, including the role of the teachers and, perhaps more importantly, the role and views of the students, has, thus far, been underdeveloped.

Designing for practitioners

As can be seen from the examples listed above, and similar to Bennett et al.'s (2012) argument, the instructional potential for Web 2.0 has led to many recent applications in higher education. An increased number of instructors utilise Web 2.0 tools in their educational practice, and this raises the demand for more research into easier and more efficient ways of applying these tools in pedagogical practice. As Hakkinen (2003) claims, it is not enough just to provide a forum in which students can collaborate. There is a need for accompanying principles and specific instructions to help to get the best out of these tools.

Studies strongly support that designing online environments requires great attention (e.g. Jefferies et al., 2003). Other researchers have highlighted how the impact of the technologies on learning depends on pedagogical practice in which the technologies

are embedded (Zurita & Nussbaum, 2004). However, there is a lack of research about the practices that support technologies and social constructivism, which is an unmet need. Welle-Strand and Thune (2003) indicated that e-learning was suffering from a shortage of strategic direction and follow-up policies. It is argued that applying technology is not enough to achieve effective and appropriate learning outcomes. The arguments continue to claim that educational purposes and pedagogy, with students' understanding, must be provided too (Kirkwood & Price, 2005). In Welle-Strand and Thune's (2003) study, they claimed the need for a systematic pedagogical approach to e-learning. They presented the challenges and the need to balance organisation, pedagogy and technology in this approach (Welle-Strand & Thune, 2003). Abbott (2001) indicated that much work remained to be done before educators learned how to use synchronous and asynchronous communication effectively within formal learning structures. Davis (2003) argued that "*good practice with information and communication technologies ICT in teacher education should be responsive to its society's needs*" (p.59). The research in this area should emphasise contributions to knowledge about learning and teaching, with less emphasis on concern for demonstrating the benefits of ICT use in education to justify its cost (McDougall & Jones, 2006). Leask and Meadows (2000) argued that networked computers were a valuable medium for communication, but the crucial issue was how people used that medium to construct joint meanings.

While many studies have report the importance of design, and examined the practice of social networking sites in education, the relationship between possible pedagogic affordances and social networking sites in higher education, along with the students' understanding of these affordances, still warrants investigation.

3.3.4 Implications of applying Web 2.0 in education

E-Learning 2.0

Higher education is one of the fields influenced by Web 2.0 educational affordances. (E.g. Downes, 2005; Anderson, 2007; Selwyn et al., 2008; Friesen & Lowe, 2012). Bajt (2011) argued that Web 2.0 tools with user-created content will have a major impact on learning environments in higher education. Consequent to the arrival of digital native students and the developments of Web 2.0 technologies, there is demand for change to the old e-learning models (Virkus, 2008). Web 2.0 tools in education introduced labels like 'e-learning 2.0' (Downes, 2005; Owen et al., 2006), 'education 2.0' (Selwyn et al., 2008), 'pedagogy 2.0' (McLoughlin & Lee, 2007), and 'social learning 2.0' (Anderson, 2007). I will use the term 'E-learning 2.0' to describe the radical potential of these tools for pedagogy. McLoughlin and Lee (2007) refer to the new learning as being "*the combination of the technological affordances of social software, with new educational agendas and priorities that offers the potential for radical and transformational shifts in teaching and learning practices*" (p.672).

Downes (2005) described the characteristics of e-Learning 2.0 as:

Learning is characterised not only by greater autonomy for the learner, but also a greater emphasis on active learning, with creation, communication and participation playing key roles, and on changing roles for the teacher. Indeed, even a collapse of the distinction between teacher and student altogether. (prg. 13)

E-learning has enabled connectivity, communication, participation and development of dynamic communities of learning through Web 2.0 tools (McLoughlin & Lee, 2007). The affordances of Web 2.0 have introduced a new era for learning. Wegerif (2007)

described the new era as a “*cacophony of voices offering countless opportunities for dialogic engagement with multiple perspectives on every topic*” (p. 181).

Many researchers have raised the issue of how to support students so that they benefit from this environment and the changes of pedagogy with e-Learning 2.0. For example, Pifarré and Kleine-Staarman (2011) argued that the main question was how to support students to co-construct new knowledge through online interaction. They stressed creation and engaging students in powerful, critical and reflective dialogues using Web 2.0 tools, while the challenge is the design of pedagogical practices capable of supporting e-Learning 2.0. In the emergence of e-learning, the focus of learning shifts from content-centric to learner-centric (Lim et al., 2010). Owen et al. (2006) claim that e-Learning 2.0 enhances learner-centeredness by collaborative and community-based learning experiences and suggest providing educational practices that support the learner. “*To explore this further we touch now on the key theme of the potential shift in thinking from ‘e-learning’ to ‘c-learning’*” (Owen et al., 2006, p. 10). As a result, the role of the teacher will change. Nevertheless, these changes will only accrue when the teachers’ and students’ knowledge are equivalent or complementary (Franklin & Harmelen, 2007). It is argued that e-Learning 2.0 will support learners independently of formal educational systems, where the activities are autonomous in this online educational space (Selwyn et al., 2008).

Lim et al. (2010) claimed that it is not enough to apply Web 2.0 tools in practice to have successful e-Learning 2.0. They suggest combining technological innovation and pedagogical practices to change the formal and informal learning concepts. Lim et al. appeal to teachers and students to change their attitudes, with the former introducing collaborative tools into their classrooms, and the latter sharing their

experiences and knowledge and being open to multiple perspectives. It is predicted that, in future, Web 2.0 tools will be a fundamental part of communications with students in learning sites (Rubio et al., 2010).

To conclude this section, I agree with McLoughlin & Lee (2007) that *“in order for these goals to come to fruition, there is a need for careful planning, as well as developing a detailed understanding of the dynamics of Web 2.0 and social software tools and their affordances. The limitations of the medium and the importance of risk management cannot be ignored”* (p.672). It is with this in mind that this study is taking place. I will explore the affordances and constraints of social software sites and develop pedagogical practices supporting e-Learning 2.0.

Online identity

A further issue raised with using technologies is the user's identities and the role of these technologies to shape it. The literatures reviewed showed that technologies, in particular social networking applications, play a major role in shaping the young user's identity (e.g. Owen et al., 2006). Virtual identities also emerge in the online space arena. For instance, the evidence of Ayed's (2005 cited in Shen & Khalifa, 2009) study shows that the internet plays an important role in shaping the youth culture. Another study showed that young adults expressed their identity in Web 2.0, where Facebook provided this unique opportunity. The study concluded with the important role of technology in the development of youth identity (Pempek et al., 2009). Selwyn (2009a) argued that Facebook allows students to construct social identities as a backstage space. As a result, it can contribute to offline education in the university. In Web 2.0 spaces, users' identities can be protected as well as shaped when the users choose what to publish, for whom and in what manner. It is

argued that publishing within a school context may lack this dimension of control and therefore may be less attractive (Crook, 2012). Albion (2008) asserted the important of interaction in Web 2.0 spaces for the development of identity, but he argued that the effect of these developments on learning was, as yet, undiscovered.

Regarding student identity, researchers have claimed that technology has a positive effect on developing identity. The study by Matsuba (2006 cited in Pempek et al., 2009) supported this claim. The findings of his study show that students with less clearly defined self-concepts were more likely to use the internet. It demonstrated that young adults may use the internet to enhance their identity development. It argued that, in online space, the users express the essential nature of their identity more freely than when seeing someone physically (Tobin 1998 cited in Owen et al., 2006). Similarly, Hemmi, Bayne, and Land (2009) found some students were more open in their blogs than face-to-face. Even for special needs students, Barden (2012) found they developed a better understanding of their own dyslexic identity and developed a group identity. In contrast, Facebook can be used for developing disruptive, challenging, dismissive and/or unruly academic identities, especially for students facing conflicting demands in their roles (Selwyn, 2009a).

An argument exists over the interplay between virtual and real identities and the distinction between virtual and non-virtual spaces. Owen et al. (2006) argued that virtual identities come from what you possess (e.g. information, practices and media). The virtual identity is constructed “*by participating in different digital cultures, by using digital resources to represent different aspects, by linking online and offline worlds*” (p.41). However users have the opportunity of hiding identities online. Prior research has also shown that online identity is influenced by offline identity (Smith et al. 1999 cited in Shen & Khalifa, 2009). Additionally, other researchers have argued

that offline identities and social networks are enhanced when they become part of the online world. So the online and offline cannot be completely separated as mutually exclusive worlds (Valentine and Holloway 2002 cited in Owen et al., 2006).

In contrast, Turkle (1995 cited in Owen et al., 2006) argued that online space provides the opportunity for the user to adopt multiple identities. Shen and Khalifa (2009) reported that it was more important for female than male UAE students to experiment with different identities on Facebook. A study showed that students needed to be honest with themselves to reach an affinity between their virtual and 'real' identities, while Web 2.0 provides the possibility of presenting alternative constructions of identity (Hemmi et al., 2009).

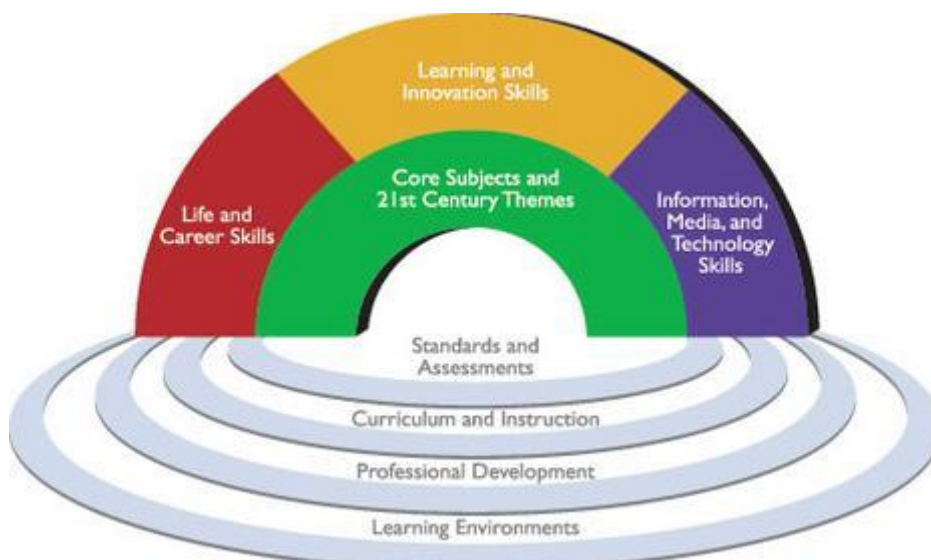
3.4 New knowledge skills

With the initiative of applying Web 2.0 tools in an educational context, the need for more skillful students has emerged. Researchers have defined some new knowledge age skills. For example, the Partnership for 21st Century Skills P21 (Trilling & Fadel, 2009) argued that there is a gap between the knowledge and skills acquired from formal learning and the knowledge and skills students need in this era. Consequently, educational institutions should infuse 21st century skills in the classroom. P21 and its members present a framework for 21st century learning.

Figure 3.6 shows the key elements of 21st century learning; the arches of the rainbow represent student outcomes and the pools at the bottom represent support systems. These skills include learning and innovation skills (critical thinking and problem solving, communication, collaboration and creativity and innovation). Jenkins et al. (2006) present a different but compatible set of skills required for media and digital literacy. They claim that "The *new literacies almost all involve*

social skills developed through collaboration and networking. These skills build on the foundation of traditional literacy, research skills, technical skills, and critical-analysis skills taught in the classroom" (p.29). In their report they identified these skills required to participate in 21st century: Play, performance, Simulation, Appropriation, Multitasking, Distributer cognition, Collective intelligence, Judgment, Transmedia navigation, Networking and Negotiation. These skills help students to participate in this new "participatory culture".

Figure 3.6: The key elements of 21st century learning



Source: Partnership for 21st Century Skills (2011)

In confirmation of the P21 framework, studies have lent support to students' need to possess adequate skills for the 21st century. Education should support the acquisition of knowledge as well as develop the skills for learning for life (Anderson, 2007; McLoughlin & Lee, 2007; Pifarré & Kleine-Staarman, 2011). For example, Bruns & Humphreys (2007 cited in Redecker, 2009) suggested that education should enhance the new skills and attitudes which are promoted by the new technologies: creativity, collaboration, critical capacity and communication.

Studies strongly support the idea that Web 2.0 tools enhance students' acquisition of new knowledge age skills. For example, Green and Hannon (2007 cited in Sharples et al., 2009) showed that students developed new skills needed in the 21st century while using SNSs, such as "*creativity, idea generation, presentation, leadership, team building, confidence, communication, innovation, initiative, critical awareness in information gathering, and ability to evaluate, question and prioritize information*" (p.72). Also Web 2.0 technologies were indicated as the heart of '21st century skills' (Casner-Lotto & Barrington, 2006 cited in Crook, 2012). Web 2.0 tools enhanced collaborative and problem-based learning approaches; these engagements help to develop key skills for studying as well as 21st century skills (Holcomb & Beal, 2010).

Clark et al. (2009) advocated that educators should transfer Web 2.0 skills to support formal learning. Using Web 2.0 in education settings should be concurrent with encouragement of higher order thinking skills (Luckin et al., 2009). Researchers have argued that Facebook activities support employability skills, and that educational institutions should help students to recognise and develop these skills (Madge et al., 2009). Other researchers have argued that Web 2.0 technologies enable new models of teaching and learning; thus teachers should acquire skills to use these applications effectively (Bull et al., 2008). Web 2.0 activities can contribute to the development of 21st century learning skills as well as 21st century employability skills (Hughes, 2009). Also higher order skills seem to be developed from engaging in activities through Web 2.0, which enhanced learning skills (Redecker, 2009). Jenkins (2006 cited in Sharpe, 2010) argued that students acquired participatory skills such as simulation, appropriation, multitasking, judgment, transmedia navigation, networking and negotiation, when engaging in Web 2.0 technology.

To conclude, Web 2.0 enhances 21st century skills, which suggests that there will be an increasing demand for educational practice to adopt Web 2.0 technologies. Since the evidence from the studies is that Web 2.0 technologies support and enhance the acquisition of the new knowledge age skills, I argue that students should have some of these skills before applying these technologies, to ensure active engagement.

Online Discussion

In fact, online discussion has been a topic of research for the past few decades. The quality of the discussion and how to enhance students' discussion have been the main issues. Researchers have transferred their interest from learner-content interaction to learner-learner interaction; also they focus on the quantity of interaction rather than its quality.

To explore the quality of online discussion, it is suggested that online discussion could be classified into a three talk topology: disputational talk, cumulative talk and exploratory talk. In disputational talk the views challenge others without justifying their challenge or offering new information, while in cumulative talk the students build on others' contributions with no critical comments. However, in exploratory talk students interact by making critical contributions and add new information (Mercer, 1994 cited in Mercer & Littleton, 2007, pp. 58-59).

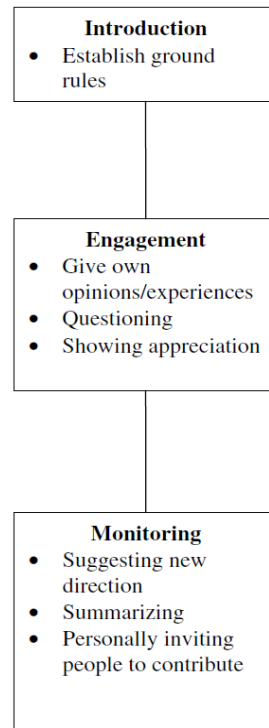
Further to this, Mercy College (2010) highlighted a set of recommended characteristics for the quality of online discussion or message posting, whether it is in a forum, group or a community, as follows:

- *Substantial: the message should be related to the subject matter.*
- *Concise: the message should be clear and short.*

- *Provocative: the message should prompt others to reply.*
- *Explanatory: A good message explores, explains, or expands on a concept or connection.*
- *Timely: A good member of the learning community gets on regularly and replies to messages in a timely fashion.*
- *Logical: A good message should contain a clearly stated conclusion or thesis supported by premises, reason, evidence or grounds of belief.*
- *Grammatical: A good, clear, concise message should be well written and free of typos and sentence fragments.*

In order to enrich online discussion, Hew and Cheung (2008) indicated a pattern of a typical sequence of techniques to facilitate online discussion. The facilitation techniques were categorised into: introduction, engagement, and monitoring. Figure 3.7 illustrates this pattern (Hew & Cheung, 2008, p. 1121). It is argued that online discussion changes the role of teachers, the contribution becomes equal and turn-taking is eliminated: everyone can talk at once. Also the content of discussion is explicitly present for all members to review and reflect on. However text-based online discussion requires new skills from participants, particularly good standards of written language (Beetham & Sharpe, 2007). Hawkey (2003) argued that text-based discussion supports students' discussion as much as in a face-to-face seminar. It is noticeable that discussion instigated by the students is more successful than that initiated by the instructors. *"Here, in students' minds, discussion acquires connotations of formality and seriousness that do not sit well with the social medium"* (Ipsos MORI 2008 cited in Hughes, 2009, p. 22).

Figure 3.7: Hew and Cheung facilitation techniques (Hew & Cheung, 2008)



In Saudi Arabia, online discussion can help students to achieve learning objectives. Reima Al-Jarf (2006b) reported on her study, on the Ministry of Education in Saudi Arabia Online Forums, that her teacher participants indicated that the forums helped them to exchange knowledge, information and experiences. They learned from each other's' posts, uploaded materials, lesson plans, test questions, e-books and software, and learned from the teaching tips offered (Al-Jarf, 2006b). Reima Al-Jarf (2005a) also used an online course with Nicenet for the teaching of English grammar to freshman students at King Saud University; an experimental group used the online course at home while the control group did not use the course. She found that the experimental group used the online course as a supplement to in-class discussion, and made higher gains than the control group that used in-class instruction only.

3.5 Rationale of the study

The studies that have been reviewed in this chapter show that, while many aspects of the use of social networking sites by students, teachers and educational

institutions have been researched, there have been no qualitative empirical studies of the pedagogical affordances of these SNSs. This may be partly due to the rapid growth of the field of Web 2.0 in education which has not allowed time for research to take place. Although many studies have claimed that Web 2.0 has affordances, I have found no studies that offer qualitative empirical evidence grounding these affordances. As cited in Section 3.3, most research has taken the form of quantitative surveys, while other studies have made theoretical predictions of the potential of SNS or Web 2.0 tools in education based on analysis of the tools' characteristics (Rosen & Nelson, 2008; Shen and Khalifa, 2009; Lim et al., 2010; Bennett et al., 2012). Similar to my argument, Hew (2011) argued that the educational potential of Web 2.0 tools was not based on empirical findings, as he said: *"To the best of my knowledge, no empirical literature review on the use of Facebook by students or teachers has been published hitherto"* (p. 663). It has been argued that, due to the recency of the introduction of Web 2.0 tools in education, there is no clear best use of these technologies (Teclehaimanot & Hickman, 2011). I have not been able to find any study about the pedagogical affordances of social networking site and how to best introduce this technology into educational practice, as Wang et al. (2012) questioned *"whether a social networking site can be used for educational objectives remains largely unexplored as a research question"*(p. 1). In addition, Wang argued that there had been little formal research into the educational potential of Facebook in higher education. Other authors have argued that use of Web 2.0 technologies in higher education pedagogy are new and that integration into instruction would be simple (Gray et al., 2010a; Hemmi et al., 2009; Virkus, 2008).

The gap in the literature has been identified by many researchers; suggestions have been made as to how to fill the gap. For example, Junco (2012) advocates higher

education faculty familiarize themselves with the new technology and design and support interventions using these tools to meet the needs of the new generation. Along these lines, Wang et al. (2012) designed guidelines for the educational use of SNSs in higher education; recommending experimental studies to test, then refine or modify them as needed. They emphasised the importance of guidelines to benefit from this technological environment. Echoing Wang's sentiments, Selwyn (2007) confirmed the need for empirical studies of the impact of the development of social networking sites on learning and teaching. Barden (2012) also noted the lack of studies on the educative practices of SNSs, claiming that the challenge in his research was to develop an understanding of these practices. This sentiment was supported by Rubio et al. (2010), who realized the importance of analysing the pedagogical potential of technology in depth but then supporting this theoretical analysis by a study of the use of these technologies in practice (Rubio et al., 2010).

In contrast, other researchers have suggested that what is needed is the development of a pedagogic model with a conceptual model of the learning potentials of Web 2.0 tools (Luckin et al., 2009). Others have advocated that educational researchers should encourage the use by students and instructors of Web 2.0 tools in an intuitive way in their own practices (Selwyn et al., 2008). Schuck and Aubusson (2010) argued that Web 2.0 affordances had not been sufficiently recognised nor exploited. They suggested that institutions should face these challenges and change their practice. Lim et al. (2010) claimed that many university practices lagged behind the pedagogical affordances of Web 2.0 tools. They added that integrating Web 2.0 technologies in education was not simply a question of making Web 2.0 available; it also required a systemic intervention with reconsideration of the higher education institutions' settings. Similarly, Bennett et al.

(2012) argued that educational institutions had not yet developed principles to support Web 2.0 tools. Virkus (2008) suggested that the pedagogical perspectives should be considered when implementing Web 2.0 in education.

To my knowledge, the pedagogical affordances of the social networking sites in higher education have not yet been investigated which these affordances emerge from the interaction between the students and the tool or reflected in instructional practice. As cited above, rigorous systematic research in this area is limited. Higher education institutions face the challenge of adapting the emerging Web 2.0 technology to their institutional practice. It is important to use the technology in a way which enhances learning, not simply for the technology itself. These tools should promote learning for life (Bajt, 2011). The educational potential of Web 2.0 has not been investigated through institutional practice (Collis & Moonen, 2008). Most educators are faced with limited theoretical and practical design models to adopt these technologies in their classrooms. As mentioned earlier, in the Practitioners section, instructors invent their own uses of Web 2.0 in the classroom.

Although no rigorous study of the pedagogical affordances of SNSs was available to me, studies in higher education offer some ideas on the educational potential related to Web 2.0 tools in general. My argument is that there is a lack of instructional design competence and lack of conceptualization of the pedagogical affordances of SNSs, consequently SNSs have not been harnessed for educational purposes. There is no doubt that the emergence of Web 2.0 tools offers many instructional opportunities. Research indicates that each Web 2.0 tool may enhance different learning styles (Oblinger and Oblinger, 2005 cited in Bajt, 2011). I claim that my research could help to understand how online social networking sites could be harnessed in higher educational settings. I will focus on designing a conceptual model based on the

pedagogical affordances of SNSs, rather than identifying its educational potential based in its features.

Summary:

The aim of this chapter was to explore the academic and research areas which have relevance to the research focus. I have reviewed relevant literature on the topics of definitions of social networking sites to gain a deeper understanding of this application, education related uses of Web 2.0 in general with a focus on SNSs and the context of Saudi Arabia. Also the foundation upon which this research is based was reviewed: the social constructivism theory and affordances theory. In addition I focused on educational technology pedagogy with its relationship with learning theories. Some particularly notable examples of university initiatives and innovative practitioners of Web 2.0 in education were presented.

In order to decide on the definition of affordances to be used in this research, I introduced an extensive review of relevant literature. Gibson's (1979) and Norman's (2002) definitions of affordances were reviewed, and idea of the affordances of technology was discussed, followed by the conceptualization of the definition of affordances for this research. The concept of constructivism and social constructivist learning theory were reviewed and the relevant arguments were illustrated. Also the relation between constructivism and technology was presented. It has been argued that "*interaction in web-based learning should be re-conceptualized based on the learning theory known as social constructivism*" (Woo & Reeves, 2007, p. 16).

The literature reviewed in this chapter shows that no studies to date have shown empirical evidence of the pedagogical affordances of SNSs. I argue that, in agreement with McLoughlin & Lee (2007):

It is imperative to acknowledge that technologies are intricately related to many other elements of the learning context (such as task design) that can shape the possibilities they offer to learners, how learners perceive those possibilities and the extent to which learning outcomes can be realized. (p.664)

Finally, in this review I problematize the relationship between Web 2.0 technology and educational practices to date. In this chapter, I illustrate the looseness of fit between the affordances of SNSs and the educational technology pedagogy literature. The relationship between educational Web 2.0 technology and learning theories was reviewed. I claim that this study will present the pedagogical affordances of SNSs and design guidelines for applying this technology in a pedagogy based on theoretical foundations.

Chapter 4 : Research Design and Methodology

This chapter provides a detailed description of the study's design and explains the rationale for the procedures followed. It includes the theoretical framework and the methodology employed to address the research questions.

4.1 Research Questions

The main research question underpinning my study is:

What are the pedagogical affordances of a social networking site (specifically ELGG, a Facebook type environment) in higher education in Saudi Arabia?

This is divided into sub-questions as follows:

1. What affordances for learning do the students perceive in a social networking site in higher education?
2. What are the pedagogical affordances of a social networking site perceived by teachers?
3. What factors might impede the use of a social networking site in higher education in Saudi Arabia?
4. What is the added value, if any, of social networking sites for learning and teaching in higher education?

Addressing the research questions is the starting point of a piece of research. The nature of the research questions shapes the choice of appropriate research methodology and methods (Wellington, 2000).

4.2 Research Methodology

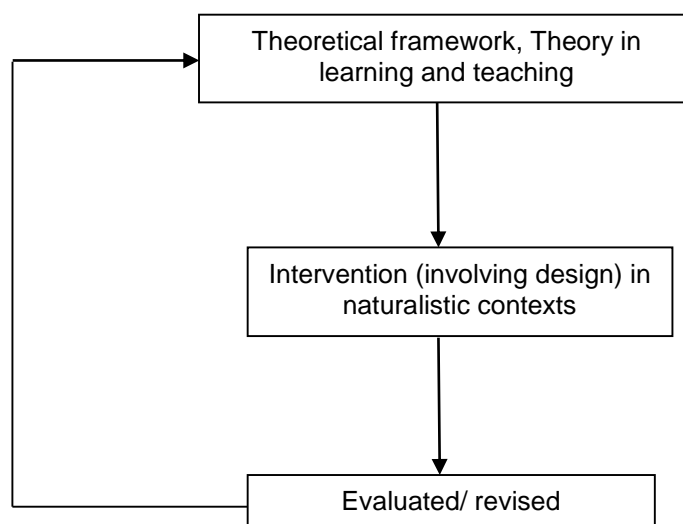
This study took the form of an intervention of a new technology in a course in higher education. The significance of this study, and the challenge, was to introduce new teaching/learning methods to use with the new technology, where the traditional ways of teaching and learning would not reap the benefit of the new technology (Reigeluth & Joseph, 2002, cited in Reigeluth, 2003). Reigeluth (2003) asserted that research into developing methods to facilitate use of ICT in teaching and learning is the most important research. The intervention of the social networking site in a course will need new methods of teaching and learning. Design-Based Research (DBR) methodology combines research, design and practice into one process. This methodology helps to develop new methods with a theoretical framework for further intervention.

Design-Based Research methodology “*blends empirical educational research with the theory-driven design of learning environments. It is an important methodology for understanding how, when, and why educational innovations work in practice*” (The Design Based Research Collective, 2003, p.5). In Brown (1992) study, considered to be the first use of Design-Based Research in education, she explained that it was modelled “*on the procedures of design sciences such as aeronautics and artificial intelligence*” in order to “*engineer innovative educational environments and simultaneously conduct experimental studies of those innovations*” (p. 141). The Design Based Research Collective (2003) indicated that design theories in education guide the design of instruction in great detail, with the aim of generating knowledge to help educators use the technology effectively, focusing on identifying the best means to accomplish goals. The main principles in DBR are: what methods to use,

when to use them, and why they work or not. It uses an iteration design approach that focuses on improvement of pedagogical practices in teaching situations.

Design-Based Research is defined in this study, as by Wang and Hannafin (2005), as a “*systematic but flexible methodology aimed to improve educational practices through iterative analysis, design, development and implementation, based on collaboration among researchers and practitioners in real-world settings, and leading to contextually-sensitive design principles and theories*”(p.6). Figure 4.1 shows the iteration of Design-Based Research as defined in this study.

Figure 4.1: The iteration of Design-Based Research



Bowler and Large (2008) stated the two main goals of Design-Based Research in education: to develop educational products that work, and to build a theoretical framework for future designs. DBR merges what has traditionally been “*a three-stage process - theory-building, testing and adoption - into one research design has allowed for the creation of theories of practice rather than developing theory that can be translated later into practice*” (Sandoval, 2004, cited in Bowler and Large, 2008, p.40). I agree with Reigeluth (2003) when he claimed that using Design-Based

Research methodology is important when the aim is to facilitate the using of ICT in education.

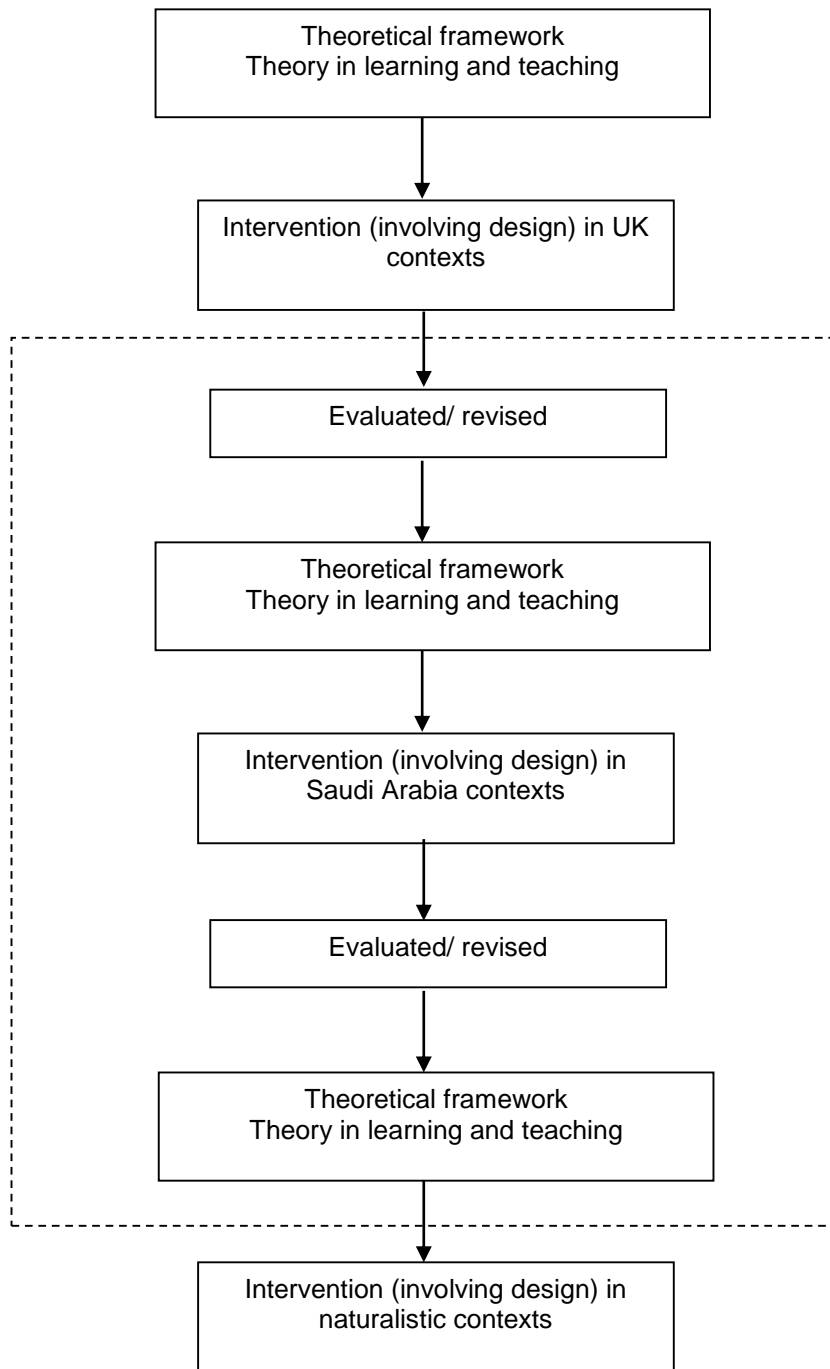
The strengths of Design-Based Research as a paradigm in social sciences are “*its focus on the learner/user; its authenticity and ecological validity; its richness; its marriage of theory and practice; its “do-ability” and the end result of a usable, working product*” (Bowler and Large 2008, p. 42). The Design-Based Research Collective (2003) stated that the power of this methodology is the generation of knowledge that directly applies to practice. Bowler and Large (2008) argued that one Design-Based study may/may not make strong theoretical claims; nevertheless Design-Based Research has the advantages of providing a thick description, using triangulated data from multiple sources, being repeated across cycles of enactment and over extended lengths of time in real life situations. In addition, Design-Based Research has the characteristics of being a naturalistic, longitudinal, iterative and multi-method approach (Barab & Squire, 2004; Bowler & Large, 2008; Reigeluth, 2003; The Design Based Research collective, 2003).

In this study, the innovation was designed in such a way as to collect evidence on the pedagogical affordances of SNS and to improve learning, based on systematic procedures. In addition, it was designed to help to explain the usefulness of practices present in the real-world context of applying a social network site in higher education. The study combined three components—research, design and practice—into one study that aimed to help answer the research questions. It should result in a usable product supported by a theoretical framework. This methodology allowed the use of an iterative design that helped the researcher to improve the interventions of this technology in higher education. This study should develop educational interventions

that lead to theory generation and the improvement of the actual practice of teaching in a real situation.

Two of the general characteristics of Design-Based Research are that it is longitudinal and iterative (Bowler & Large, 2008). As this study has a limited time as a PhD thesis, I planned a two stage research design; with exploration followed by developing a theoretical framework. Insofar as this is DBR, it was a special short version in which there was only one real iteration. However, the principle of the DBR methodology was followed, in that the study had two phases. In Phase One, I analysed and evaluated an existing intervention in the University of Exeter in the United Kingdom; the results of this study are reported in Chapter 5. The outcomes from this exploratory study were a theoretical framework and design principles. These principles were then applied in the implementation of the intervention in Saudi Arabia as Phase Two. When the results of Phase Two were evaluated, the theoretical framework and the principles were revised. The scope of this research is illustrated in Figure 4.2 with the dashed line. This shows that the study evaluated the intervention of SNS in a UK context during the first cycle of this iteration; then a set of design principles and a theoretical framework were developed; after that the second cycle/iteration was redesigned, and which introduced SNS into a real-life context in Saudi Arabia; this enactment led to an analysis of the outcome of the process resulting in a new theoretical framework. The difference of the contexts in the two phases in this study is acknowledged.

Figure 4.2: The boundary of Design-Dased Research of this study



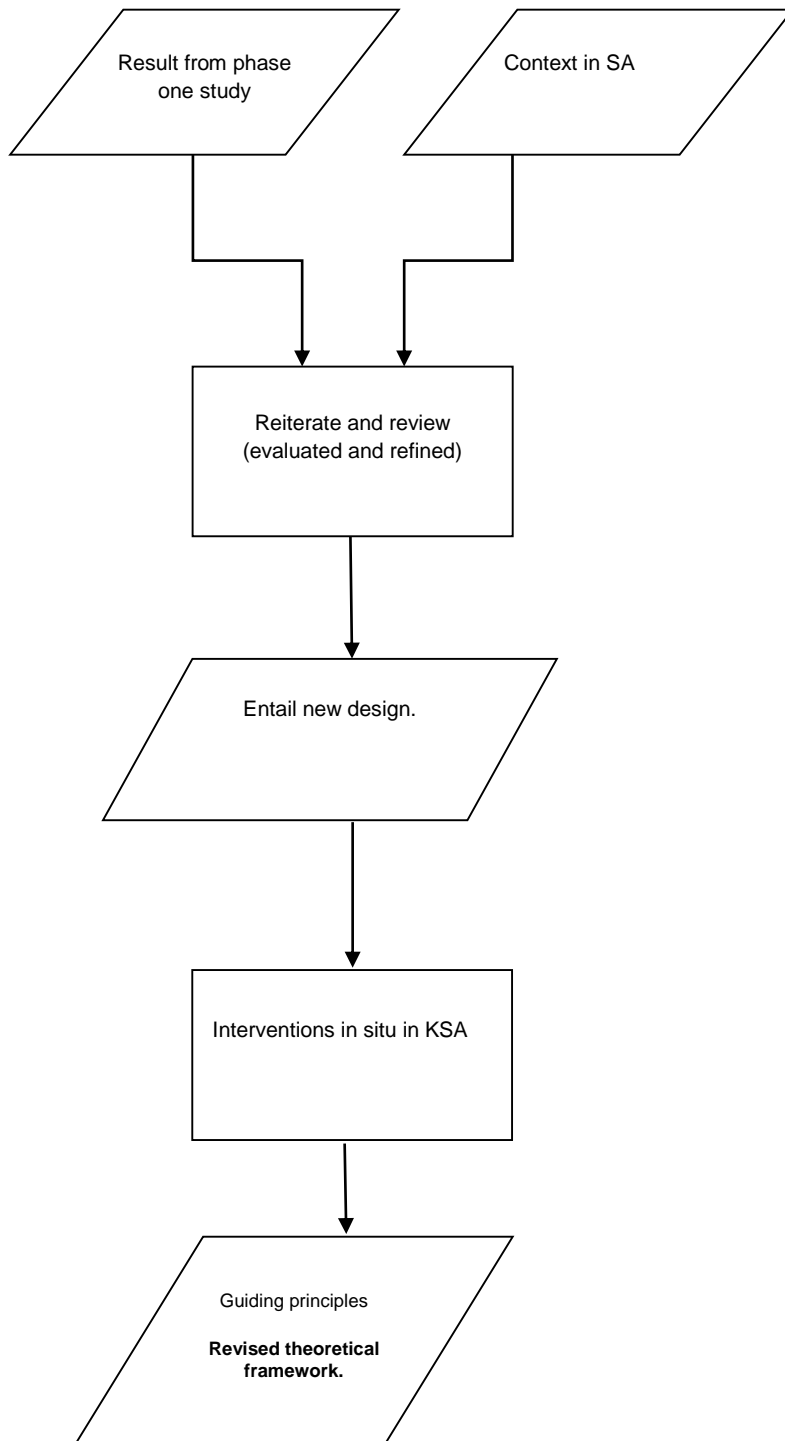
The affordances of the social networking site were conceptualised after completing the analysis of Phase One of the study. This led to developing a design principle as a theoretical framework, which was fully considered when designing Phase Two. Then, in Phase Two, the students/tutors could do tasks while they interacted with this environment, whether known or unknown to them, which led to other affordances

of the SNS. Furthermore, after the introduction of the SNS in Phase Two, analysis of the participants' interaction in the SNS revealed its pedagogical affordances. Based on these affordances, principles and a new theoretical framework were developed for the future applying social network sites for courses in higher education.

Figure 4.3 illustrates how the theoretical framework was derived from the first study, which helped to design subsequent interventions with the course in Saudi Arabia. This was evaluated and/or refined to create a new framework.

In addition, in this research, a case study was integrated with the DBR methodology. So I followed the principles of DBR and did a particular study in situ with the study timetable. This integration aimed to gain a clear understanding, as well as leading to improvement of the phenomenon in its real life context. I aimed to study a real situation with real people, a contextualized study from which it may be possible to generalize to other, similar, contexts. This case study examined a specific phenomenon over which I had no control on the participants interacting, which made the case study a fitting methodology (Cohen, Manion, & Morrison, 2007). Also, this study was interested in taking into account the perspectives of the participants (Pring, 2004). This involved finding multiple realities which reflect different definitions of reality held by the different individuals involved in the research.

Figure 4.3: The process of the study



Furthermore, choosing a case study in my research had many advantages. For instance; The data would be collected in a natural context; so context validity is high; its data would be very 'real'; it would focus on wholeness rather than loose connections of traits; and it would provide the sort of data that quantitative research could not provide. Furthermore, using case study methodology would clarify the distinct pedagogical affordances of social networking and catch unique features that may otherwise be lost. These unique features held the key to understanding the case and may help to introduce SNS into higher education in Saudi Arabia in future (Cohen, Manion, & Morrison, 2007, p.256). However I am also aware of the potential disadvantages of using case studies. For example, there is a potential for bias and it is may not be generalize from the findings (Pring, 2004; Cohen, et al., 2007; Wellington, 2000). Nevertheless, I integrated the case study within a DBR approach because I felt it was most suitable for production of new theories that account for learning and teaching in naturalistic settings. The aim of this research and the context were appropriate for that. This study sought for a theoretical model of learning and instruction with an empirical base in a real situation.

Finally, Wellington (2000) defined methodology as "*the activity or business of choosing, reflecting upon, evaluating and justifying the methods you use*" (p.22). Based on this methodology of a case study inspired by a DBR approach, the methods of my research will be shaped and justified. As Design-Based Research is multi-method, each iteration has its methods that may/may not differ from the previous one.

4.3 Research Methods

The methods in any research should be informed by the nature of the research questions. As presented earlier in this chapter, my research questions aimed to explore the pedagogical affordances of social networking sites. Consequently this study was applied in two phases: Phase One was an exploratory study applied in the University of Exeter with the social networking site called The Hive; and Phase Two was the main study conducted in Saudi Arabia. The process of the study is illustrated in Figure 4.2 and Figure 4.3.

This study is concerned with the affordances perceived by students and tutors. The most suitable way to explore and understand these was to utilise a qualitative approach with mixed methods. The research methods applied were semi-structure interviews, observation of interaction, and reflexive report. Using interviewing and observation is popular in social science research (Tashakkori & Teddlie, 1998). Analysis of student messages by observing their interaction, and semi-structured interviews with key event recall were applied to evaluate the impact of the social networking site in learning. In addition, these data were utilised in this educational research to explore the pedagogical affordances of using social networking sites in learning from more than one standpoint. Knowing the pedagogical affordances of the social networking site in the course would help to evaluate the design principles and revise the theoretical framework from Phase One. I am in agreement with Wellington (2000) that "*methods can and should be mixed*" (p.17). Within a mixed methods approach, each method compensates for the weaknesses of the other methods. The use of different methods is known as triangulation. Cohen and Manion defined triangulation as "*the use of two or more methods of data collection in the study of some aspect of human behaviour*" (Cohen, Manion, & Morrison, 2007, p. 141; cited

in Wellington, 2000, p. 24). Finally, combining different methods can be applied to seek a convergence of results between two or more methods (Ashakkori & Teddlie, 2003). Accordingly, Bennett and Carre (1993) argued that multi-method approaches “are necessary to adequately characterize both the processes and outcomes of complex teaching-learning settings” (p.17). Using triangulation techniques and mixing methods provide a study with a more in-depth understanding of the phenomena, while also adding to the validity of the data.

The research methods were designed specifically to address the research question: What are the pedagogical affordances of social networking software (specifically ELGG, a Facebook type environment) in higher education in Saudi Arabia? To answer the first two sub-questions (1- What affordances for learning do the students perceive in a social networking site in higher education? 2- What are the pedagogical affordances of a social networking site perceived by teachers?), observations were undertaken of the interaction between the students using the social networking, from which the affordances of the social network emerged during the course. Semi-structured interviews were designed, and conducted with students and their teacher at the end of the course. These provided data on the affordances of SNS from the students’ and teacher’s perspectives. The answers to the final two sub-questions (3- What factors might impede the use of social networking in higher education in Saudi Arabia? 4- What is the value added, if any, of social networking web technology for learning and teaching in higher education?) were addressed through reflexive reports, from interviewing the students and teacher, and through analysis of SNS messages.

The interactional data were acquired from students’ interaction with each other via the social networking site. Where student messages were collected, qualitative data

analysis was used with the help of NVivo software. In addition, after finishing the course, some students and their teacher were interviewed using in-depth semi-structured qualitative interviews. Observations of the interaction of the students in the social networking site were carried out simultaneously with their messages analysis. The reflexive reports gave the students space to express their experience of using social networking sites. In the following section I provide a description of these methods and the data collection procedures.

4.3.1 Observations and message analysis

Observation is clearly an important part of case study (Wellington, 2000). If observation is combined with other methods it will be more useful (Tashakkori & Teddlie, 1998). As Cohen et al. (2007) argued, observation enables researchers “*to see things that might otherwise be unconsciously missed and to discover things that participants might not freely talk about in interview situations*” (p.397). In this method, the data were collected while interaction occurred in the natural setting. In this study, I observed students’ messages and their interactions in the SNS ‘The Hive’.

When interaction analysis on The Hive, there were several tools where students could use to facilitate their interactions and group work, such as: blogs, video, photos, pages, groups and file storage. The data were collected from these spaces. In collaboration activity I focused on students’ collaborative groups and, if they did not create a group, I focused on their blogs, videos and files, whilst some students created their own activity groups to help them collaborate on shared activities. Therefore I started to read the students’ blogs, at the same time, and a study diary was updated each time a student blog was updated. Also, the collaborative groups were read and classified by accessibility. With the help of Nvivo qualitative data analysis software tool the messages were analysed qualitatively. At the beginning of

the observation phase, all the posted messages were read. Further on I focused on students' collaborative groups and/or blogs. These spaces were analysed during the students' study progress.

4.3.2 Semi-structured interviews

Interview methods are designed to elicit views, perspectives and multiple truths in social situations (Wellington, 2000). Interviewing is a powerful method: it provides one to one interaction, enables clarification, and "*might lead to conceptualization of the issues in ways totally different from what you anticipated*" (Tashakkori & Teddlie, 1998). My aims in these interviews were to deepen understanding of the issues surrounding use of the social network site in learning, as they emerged from analysis of the posted messages, and to evaluate them. Furthermore, I sought and obtained additional information from the interviewees. In this part of the interview, I used open questions for depth and extended responses from the interviewees, giving them space to speak about their own experiences. I was open-minded about their answers, from which other questions could emerge. As a result, I chose a semi-structured interview technique with open questions.

The 'face-to-face key event recall' technique was carried out in the interviews with students and their tutors. I used stimulated key event recall in some of the interviews; it is used to stimulate participants' memories back to events during their blogging and posting. I used it to explore their feeling and the meaning of their posts. For example, I asked questions such as 'how did you get this idea?' And 'why did you write that comment?' while referring to their quotes from their posted messages. Stimulated key event recall was only used when it was needed and not in all interviews. The key event interview technique was an indirect method of obtaining

evidence of the pedagogical affordances of the social networking site (Wegerif, 2010).

The frame questions (see Appendices 6 and 7) were constructed based on observation and analysis of the interactions on The Hive, with a carefully structured recall of key event design. In the interview, I was open-minded about the issues that could emerge. The interview questions were only a frame that helped in the interviews. I designed a field notes form that covered all the interview questions, I classified these questions as a sequence of themes, and each theme covered suggested questions. However, I was open to changing the sequence and the wording of questions in order to follow up the answers given and stories told by the participants.

4.3.3 Reflexive report

Wellington (2000) defined reflexivity as “*introspection and self-examination, i.e. the act of reflecting upon and evaluating one’s own impact on the situation being studied*” (p. 200). Students’ reflexive reports enabled me to hear the voice of the participants on issues that the interviews did not cover. The students submitted their reports after finishing the course. These anonymous reports reflected their experiences of using the social networking site in learning.

Summary:

I in this chapter, I have demonstrated how the methodology applied in this study was designed to help to address the research questions. The methodology of this study, DBR integrated with a case study, has been described, and rationale for the choice of methods. In the next chapter I will describe the study setting and participants.

Chapter 5 : The pedagogical affordances of social network technology: A study in an undergraduate course in Exeter University¹

The aim of this study is to explore and understand how British students and teachers use social networking site and to explore the real pedagogical affordances of this technology. This study was carried out in order to test and develop the methods of Phase Two. For instance, the interview schedule with its semi-structured questions was tested to see if it elicited insights which may help to conceptualise the pedagogical affordances of social networking site. Insights gained from this study were used in designing the course for the Phase Two, which used social networking site in a Saudi Arabian university. The results from the analysed data were evaluated, refined and redesigned as an example of Design Based Research Methodology (DBRM).

This study explored the use of social networking site for educational purposes. A social networking site, The Hive, made use of this technology in an ICT Futures course at the School of Education, Exeter University, UK. The views of a sample of undergraduate students and their teachers participating in this course were investigated during the spring term of the academic year 2009/2010. The study adopted an interpretative approach with a mixed-method research design. Data were collected through observing and analysing posted messages on The Hive website and through semi-structured interviews with teachers and students at the end of the course. Stimulated recall was used in the interviews as a method of studying online

¹ An edited version of this chapter is presented in:

AL Ibrahim, A “**The Pedagogical Affordances of Social Network Technology: A study in an undergraduate course in Exeter University**“, *Saudi International Conference SIC 04*, University of Manchester, Manchester, UK. 30th and 31st of July 2010

activities. The data analysis and discussion resulted in recommendations for the design of the course activity for Phase Two. The chapter concludes with a summary of the study.

5.1 The Participants

The sample in this study was composed of undergraduate students and their teachers on the ICT Futures course, Exeter University, UK. The students were all female, as they were in Phase Two. These interview participants were chosen purposefully after observing and analysing their posted messages on The Hive. The selection of the interview sample was based on: their engagement with The Hive and the nature of their interaction/contribution (e.g. brilliant ideas, hate technology, extremely engaged or extremely unengaged). The tutors on this course were interviewed. Consent Form was obtained from the participants before applying the study (Appendix 3).

5.2 Data collection and Data analysis

The data were collected through applying mixed methods, in this case observation and interviews, which provided the study with a full understanding of the phenomena and validity of data. In addition, the use of the two methods was useful in reducing misinterpretations of the participants' data.

5.2.1 Methods

Observation & content analysis: observation of posted entries was done qualitatively during this initial, exploratory stage. In this study, I observed the students' messages on the social networking site and their interactions. At the same time, I noted my thoughts in my diary. Furthermore, the contents of the messages were analysed to enable the pedagogical affordances of the social networking site to emerge. With the

help of Nvivo software tools, the messages were analysed qualitatively. The observations and analysis took place before the interviews, which helped to refine the construction of the interview questions, evaluate the results and clarify misunderstandings. At the beginning of the observation phase, all the posted messages were read. Further on I focused on just thirty students' blogs, due to time limitations. These blogs were chosen randomly.

When observing The Hive, there were several spaces where students could write and be interactive: e-Profile, Wall, Blog, Community and File storage. The data collected for this study focused on the ICT Futures Community, students' Blog, their Wall and e-Profile. Some students created their own presentation community to help them collaborate in the presentation task. This community was created for a specific purpose so it was not analysed. Furthermore, any new affordances could be used in this community, as in the course community. So I started to read the community Wall and community Forum. Each entry blog in the community linked with its writer's e-Profile, so I entered his/her blog and read and analysed all his/her entries.

To be certain that I did not read/code the blogs more than once or misread the new entry, I kept a diary for my reading and updated it. There were sixty-five students on the course, from whom I decided to focus on thirty personal blogs, selected at random. In analysing the blogs, the pedagogical affordances of The Hive were identified. Themes emerged from the analysis with the help of Nvivo. While coding, the themes linked with quotes from the data, and notes were made. This process continued until saturation was reached, where no further themes emerged from the data.

Semi-structured interview: According to Wellington (2000), interviews allow researchers to investigate and elicit things that cannot be directly observed (p.72). Interview methods are designed to elicit views, perspectives and multiple truths in social situations (Wellington, 2000). The aims of this interview were to deepen understanding of the issues surrounding the pedagogical affordances of the social networking site, as they emerged from analysis of the posted messages, and to evaluate them. Furthermore, I sought and obtained additional information from the interviewees. In this part of the interview, I used open questions for depth and extended responses from the interviewees, giving them space to speak about their own experience.

After the observation and analysis of the messages posted on The Hive, three students were chosen for interviewing. Since the interviews took place after the course had finished and many students had left, as well as there being a poor response from the students, the interview sample was selected based on specific criteria, and after that selected randomly from each criterion. These students, with their teachers, were interviewed. Semi-structured face-to-face interviews were done at the end of March 2010. The interviews lasted between 15-20 minutes and each interview was recorded. The interviewees were asked to choose the location of the interview (in a public place or the postgraduate house).

While I was observing and analysing the students interactions on The Hive, I constructed the interview questions (see Appendices 4 and 5) as a frame questions that may other questions could emerge throughout the interviews, at the same time I considered a recall event if needed. It was planned that the outcome of the interview would be transcribed and given a code number. Each transcription would be sent to

the participant with a request to amend any inaccuracies or instances in which the participant's intended meaning had been misrepresented.

When selecting the participants to interview, firstly, I chose three students according to the analysis of their blogs: where one of them hated the technology, the second one was a new student who was not part of the existing social network in Exeter and the third posted actively. The other participants would be chosen based on these interview results. Unfortunately, only one student replied to the email invitation. So I decided to send emails to a random group of students and wait for their replies, then send again to another random group. After several attempts I acquired three interviewees, which is an adequate number for a first phase study, and I was able to gain valuable data from them.

Before the interviews, the participants' coded blogs were read and reviewed to develop further interview questions. Because each student had her/his special interest, this review of blogs was helpful to gain deeper understanding and ultimate benefit from the interview. It also helped to formulate and ask appropriate questions. Furthermore, those posted blogs/comments which would be used to stimulate recall in the interview, were selected.

Key event recall was used in the interview by which participants' memories were stimulated back to events during their blogging to explore what they meant and how they felt new ideas had come out of "writing this comment /blog". The stimulated event recall was only used with two participants because of certain issues. The key event interview technique should be acknowledged as an indirect method of obtaining evidence of pedagogical affordances of the social networking site.

Furthermore, the interviews were recorded by digital recorder (with the permission of the interviewees). One of the interviews was transcribed, while the rest were imported to Nvivo as audio and coded. The codes emerging from the interviews were the same as the themes which had emerged from their blogs. However the interviews produced explanations for some of the themes and allowed for a deeper understanding of the pedagogical affordances that emerged.

5.2.2 Using Nvivo software

Welsh (2002) showed that the best data analysis results can be achieved by combining manual and computer-assisted methods; whilst Crowley, Harre & Tagg (2002) argued that qualitative software can “*both assist with and enrich the abstraction*” (p. 193). Moreover, use of software opens up the opportunities for mixed methods. Bazeley (2007) concluded that the qualitative analysis tools facilitate the integration of various kind of analysis which would be hard to do without the software. Nvivo –computer assisted qualitative data analysis software - was used to analyse the qualitative data and it provided “*an accurate and transparent picture of the data also providing an audit of the data analysis process as a whole - something which has often been missing in accounts of qualitative research*” (Welsh, 2002, p.1).

Nvivo was chosen based on its simplicity, ease of importing Word documents and ability to allow the researcher to write memos and link them with quoted text in documents. This helps the researcher to form theory from the data, as Welsh (2002) claims. Moreover Rich & Patashnick (2002) argue that using the software “*significantly enhanced our ability to analyse*” (p. 259). In addition it is argued that “*it serves to facilitate an accurate and transparent data analysis process whilst also providing a quick and simple way of counting who said what and when, which, in turn,*

provides a reliable, general picture of the data" (Morison & Moir, 1998; Richards & Richards, 1994; as cited in Welsh 2002, p.3).

A major benefit of this software was that I coded the audio interview without transcribing it. Moreover, the codes could be integrated with the same themes in the text codes, as well as linking the audio quotes with the code.

5.2.3 Interview questions

Face-to-face key event recall interviews were carried out with students and their tutors. I was open-minded about their answers, from which other questions could emerge. The questions in Appendices 4 and 5 are only a frame that helped in the interviews. The questions were established after careful consideration of the research questions and reviewed by two experts: Rupert Wegerif and Judith Kleine-Staarman. The field notes form was designed to cover a sequence of themes, as well as suggested questions. Nevertheless, at the same time there was openness to changes of sequence and the wording of questions in order to follow up the answers given and stories told by the participants.

For ethical reasons, permission was obtained from the students and school, and access to data from The Hive was authorized. Students' permission was obtained by signing a consent form (Appendix 3). Additionally, students' privacy and confidentiality was respected through the use of pseudonyms. In this, I have followed the BERA guidelines for ethical principles (BERA, 2011).

5.3 Results and findings

The following illustration of the study findings were divided according to the space that the student used. Firstly, the Wall (personal/community) is used for personal communication and comments and for asking general questions about assignments

and lectures; sometimes technical questions like how to format the entry text are posted. In addition, the personal Wall is used mostly to organise group members and group work. Nevertheless, some students created their presentation community and discussed group work in this space.

Most of the students were confused between their blog and community forum. Some of them posted their entry twice in their blog and community forum. Others posted in the community forum so their blog was empty. In contrast, some students posted only in their blog and rarely posted in the community forum.

The themes emerging from coding the students' blogs and participants' interviews are shown in Table 5.1 (from the Nvivo file). Each theme was described in more detail and illustrated with a quote. Reflection on the lectures was one of the most frequent themes to emerge from The Hive, with the enriched course materials and new issues raised in the course as revealed in Figure 5.1. The students were reflecting on their reading, works, and on the lecture in their entries. A student stated that: *"Having read a research project by Cynthia R. Smith carried out on a child using an ICT game I became increasingly aware of the link between a computer-based dramatic play and a child's literacy development,"*

Furthermore, they were sharing web sites, articles and videos, and also their feelings: a student posted: *"A little nervous about The Hive as I usually take a long time getting used to new sites but so far so good."* In this sharing they recommended some resources or uploaded some video clips.

Table 5.1: The code of students' usage the Hive.

Name	Sources	References	Created On	Created By	Modified On	Modified By
write their assignment	18	19	21/04/2010 13:04	RSU	26/04/2010 21:25	RSU
use the Hive for other modules	10	13	26/03/2010 12:30	A	10/05/2010 18:49	RSU
the benefit of the Hive	3	4	22/04/2010 13:32	RSU	10/05/2010 17:20	RSU
suggest a solution	3	4	26/03/2010 10:43	A	20/04/2010 13:30	RSU
stimulate to research	10	14	26/03/2010 12:20	A	26/04/2010 21:28	RSU
stimulate from reading posted blogs	16	32	01/04/2010 13:08	RSU	10/05/2010 18:54	RSU
stimulate from articles	3	4	25/03/2010 12:28	A	26/05/2010 12:01	RSU
sharing websites	9	12	26/03/2010 12:32	A	26/04/2010 21:25	RSU
sharing their thought	15	33	26/03/2010 12:16	A	10/05/2010 17:40	RSU
sharing articles	11	22	25/03/2010 13:00	A	26/05/2010 12:03	RSU
reflecting on their reading	13	25	26/03/2010 12:12	A	26/04/2010 21:15	RSU
reflecting on the lectures	18	53	25/03/2010 14:49	A	26/04/2010 21:25	RSU
reflect their work	11	14	25/03/2010 14:48	A	22/04/2010 11:22	RSU
personal comments	22	55	31/03/2010 15:59	RSU	10/05/2010 17:40	RSU
new Issues	21	61	24/03/2010 10:48	A	26/04/2010 21:14	RSU
linked with their experiences	19	53	24/03/2010 14:45	A	26/05/2010 12:05	RSU
learning new skills	1	1	26/03/2010 10:59	A	31/03/2010 14:42	RSU
Further analysis	13	21	24/03/2010 14:33	A	10/05/2010 17:16	RSU
formal debate	18	42	31/03/2010 11:44	RSU	10/05/2010 17:20	RSU
enrich course materials	19	58	24/03/2010 12:09	A	10/05/2010 17:17	RSU
dis of the Hive	4	9	25/03/2010 12:56	A	10/05/2010 17:40	RSU
benefit from other blogs	2	4	25/03/2010 13:18	A	26/05/2010 12:04	RSU
ask technical questions	6	8	24/03/2010 14:25	A	26/04/2010 19:07	RSU
ask questions	10	13	26/03/2010 12:26	A	26/04/2010 19:54	RSU
arrange groups members	8	13	26/05/2010 12:16	RSU	26/05/2010 12:17	RSU
arrange group work	16	47	25/03/2010 12:52	A	10/05/2010 17:40	RSU
answer questions	5	9	31/03/2010 15:53	RSU	26/04/2010 19:22	RSU

In addition, reading other blogs simulates students to research, read and think. One student said: *“From writing my previous blog, it really made me think about the ‘digital divide’ that is present among society.”*

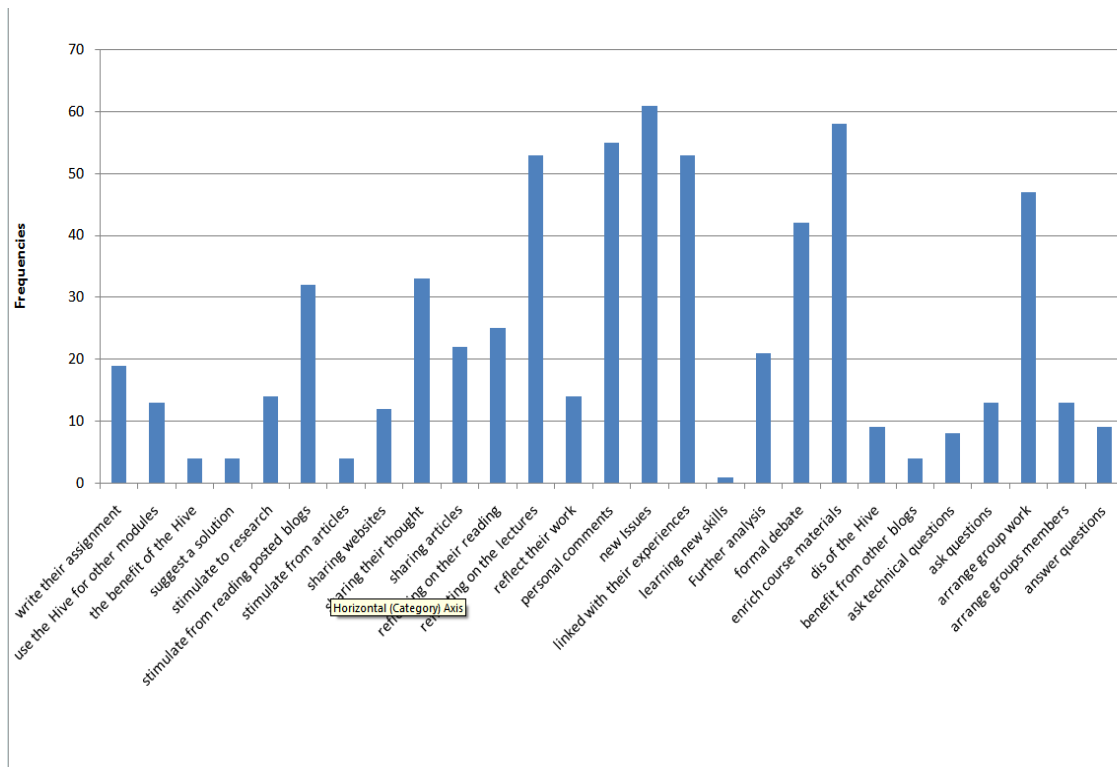
Student *“As I was browsing this forum I suddenly thought of something that has not yet been discussed. ICT and Poverty”*

Student *“A couple of weeks ago there was an article posted about ICT and poverty and at the time I found it quite interesting to read of...”*

Student *“Thank you ..., you just make me think! :)”*. Some time their blog stimulates themselves. *“I got to see how ICT and math are used together for myself.”*

The students' blogs enriched the course material by: posting reading articles, videos, web sites, personal experiences and discussing new issues from different points of view. A student: *“On the other hand, the article below looks into the use of technology in poor countries across the world.”*

Figure 5.1: The themes emerged from analysis the students' interactions



Also they linked ICT with their experiences. One student said: *“As I am carrying out a placement at the moment in a Primary School it has been clear to see the extent to which schools and even Primary Schools use ICT.”*

Additionally, they make use of The Hive as formal debate medium. This debate allows the student to write his/her references and evidence. Also the contribution to the debate is flexible.

Interviewee *“... The Hive makes it [debate] easierwait your turn to speak, in modules that do not use The Hive you raise your hand and wait. Sometimes you don't.... But in The Hive any time whenever...”*

Moreover, the students use The Hive for other modules and benefit from posted blogs for other modules.

Student: *“Through another module I have been researching the use of ICT in literacy lessons. I have researched children and tried to see how they feel they use computers and other technology in their class.”*

Student: *“...because this actually ties in really well with what I am currently researching for another module.”*

Student: *“We are even starting to use it for our other modules, instead of meeting up and discussing certain topics we have decided to do it all over The Hive.”*

Student: *“Hello! I just found a paragraph about mature students that you might be interested in; it is on the bottom of page 250-251 of this article.”*

Interviewee: *“Yes, I make a link between this module and ICT, so I cross from one module to another.”*

Afterwards, these themes (which are presented in figure 5.1 and table 5.1) emerged into 27 themes where the themes related to each other were grouped to one code and presented as meta-codes as Table 5.2 shows, codes led to the five meta-codes with average of five themes behind each meta-code. For instance, reflecting on their lectures, their work and their reading were grouped into the meta-code “Reflecting”. As a result the affordances of The Hive are Reflecting, Sharing, Stimulating, Enriching and Managing. Table 5.2 shows these affordances and their grouped themes driven from Figure 5.1. I am aware of that Sharing and Enriching course materials meta-codes have some overlaps, but I decided to separate them to emphasise certain issues. For example, in the “writing their assignments” theme, some assignments enriched the course by the issues they raised.

Table 5.2: Meta-codes

Meta-codes	Group of themes
Reflecting	Reflecting on their work, reflecting on the lectures, reflecting on their reading.
Sharing	Personal comments, sharing articles, sharing their thought, sharing websites, writing their assignments.
Stimulating	Stimulate from articles, stimulate from reading posted blogs, stimulate to research.
Enriching course materials	Enriching course materials, formal debates, learning new skills, linking with their experiences, new issues.
Managing	Asking technical questions, asking questions, organising group members, arranging group work, answering questions.

Finally, in the Hive I noticed that the tutors did not contribute at all, even towards questions regarding The Hive or the course; the students just answered each other. Only one of the tutors contributed occasionally for technical help, for instance uploading their presentation files.

5.4 Discussion and Conclusion

In this era of the Web 2.0, learning can take place through conversations about course content, interaction about problems and actions, and learning from multiple perspectives. The Hive – social networking site - successfully presents this educational style. The Hive offers many pedagogical affordances which help students to contact peers anytime from anywhere, enabling them to stay up to date, gain a lot of experience, gain confidence in the module, and learn from each other. The Hive gives students the opportunity to learn from each other by interacting with the posted contents, posing problems and raising new issues.

The findings of this study were the pedagogical affordances that emerged after analysis of the students' interaction with this learning environment. These

affordances imply the complementarity of the students and the environment of The Hive. Whilst all the participant students disliked technology, all of them agreed with using this web environment in other courses. Interviewee: *“I am surprising myself. I will say with Hive, for these reasons....”*

Furthermore, the students used techniques online in The Hive such as brainstorming, and the process of selecting their presentation topics. Also The Hive enabled an on-line debate, which has a lot of advantages over a face-to-face debate. In addition, The Hive saved the students' time, as the entry blog summaries saved members hours of searching and reading.

Interviewee: *“I can spend two hours in The Hive; it takes me all the day to do in the library. As practical affordance The Hive is great.”*

Interviewee: *“The references I used in my blog, spending a lot of time to search it and summarise it, so some people [students] read an article then summarise it in a paragraph.”*

When new issues were discussed, several different points of view could be taken. Sometimes students could raise a question without any answers in mind. After the discussion, they may have received an answer from others, or a comment may have stimulated them to provide the answer for themselves.

In group work, The Hive made it easy for students to organise their groups, manipulate and inform group members. Sharing articles, videos and websites enriched the course material and effectively presented different points of view. One student said: *“I feel that the internet is great to discuss your views with others where you may not have had the chance without it.”*

Participants had started to see connections between ICT and many aspects of their lives. Interviewee: *“I want to argue that ICT is linked in everything, everywhere.”* Another student posted: *“It would be unfair not to acknowledge the benefits I have received from interacting with my peers and learning from their blogs/posts.”*

In conclusion, this study helps to answer the research questions. The pedagogical affordances of a social networking site can be categorised as: reflecting, stimulating, enriching course materials, sharing and managing. Consequently these affordances, found in this exploratory study, were used to design the first design framework (see Table 5.3), while this framework helped to design the new intervention of the social networking site in Saudi Arabia (Phase Two), which I explained in the next chapter.

Table 5.3: The Design Framework 1

affordances	Design Framework 1
Reflecting	Students should be encouraged to reflect. Designing course activities that support reflection.
Sharing	Students should be encouraged to share their work on the social networking. The tutors should encourage their students to contribute positively to the course.
Stimulating	Encourage students to read others blogs and comment on it. Students’ interaction on the social networking site should be assessed to help them take the online course more seriously.
Enriching course materials	Encourage debate and discussion. Teacher role should be encouraging students to discuss and criticise and challenge each other. Also open space for discussion.
Managing	Encourage group work. Prompt students’ collaboration by given to students group work.

Summary:

This study has been very useful in testing and improving my research methods for Phase Two; it has also given me useful experience as an interpretive researcher. Moreover, the study has elicited some pedagogical affordances of this social networking site in higher education in a British university, which will be used next phase while acknowledging the difference between the two contexts. In addition, it

has demonstrated the role this website environment can play in the “education 2.0” era. Most of the students went on to use The Hive for other modules, which indicates the advantages that the website affords. One student concluded that: “..... *however, due to this module, I can safely say that my attitudes towards ICT have changed*”.

The interview was the most enjoyable and interesting of the methods in this research study, as Wellington (2000) articulated. Nevertheless, I was faced with some difficulties, such as:

- I started to use manual analysis, because there was a problem in installing the Nvivo software in my laptop and the computers in the RSU, until 24th March, when the technician fixed it. I was then able to start coding with Nvivo. However, it took time to re-enter the manual codes into the project.
- There is no way to export the data from The Hive to Nvivo software, so I copied blogs into Word documents, and then imported these into Nvivo, which was a rather time-consuming process.
- I think I wasted my time trying to read and analyse the posted blogs for sixty five students, which was too many for an exploratory study.

The findings of this study, together with the literature review and the context of Phase Two, were used to design the course and create the social networking environment in Phase Two of this research.

Chapter 6 : A study in an undergraduate course in King Saud University:

Phase Two

This chapter presents a detailed description of the procedures followed to conduct Phase Two. The first section focuses on the setting of the study. A detailed description of the methods, participants and setting are given. It is followed by a description of the different data collection methods and the data analysis process. Finally, ethical considerations are provided.

6.1 Site of the study

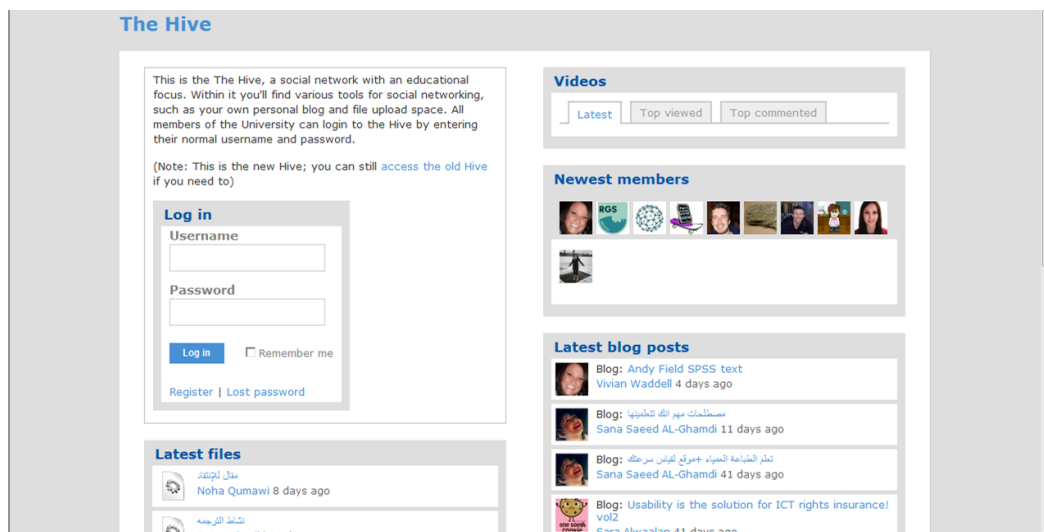
Innovative technology in learning and teaching needs careful design and setting of the technology in the course. Beetham and Sharpe (2007) claimed that: "*Teaching has always involved some element of design in the process of preparation and planning. With e-learning, however, the need for intentional design becomes more obvious and pressing*" (p.7). In this study, some processes were carried out before the Phase Two was commenced.

After the exploratory study (Phase One presented in Chapter 5) of the intervention in the UK context, University of Exeter, an elaborate theoretical framework was arrived at with some practical principles for design which helped the implementation of the intervention in Saudi Arabia. Table 5.3 illustrates these principles and the framework from Phase One.

6.1.1 The Hive

In this study, the social networking site was created using Elgg named “*The Hive*”, a leading open source social networking platform (Elgg.org). Elgg is a social networking framework with the fundamental tools to create your own social networking site, which can be open (public) or closed (private). Elgg is an open source product. This software is free to download—see Figure 6.1. The course will be cohered automatically and added to The Hive as communities, though students and their teachers are free to create their own communities too. Training sessions were applied for the students and the teachers. Training sessions and workshops identifying good practice in using social networking sites were established.

Figure 6.1: Screenshot of The Hive



6.1.2 Participants

The quality of research is based on an appropriate sampling strategy as well as the methodology and methods (Cohen et al., 2007). The sample size should be decided upon based on the data to be collected, the style of the research, cost, resources and representativeness of the population (Cohen et al., 2007; Wellington, 2000).

Phase Two participants were undergraduate students and their tutors. All these were female and their ethnic background Saudi. The student participants in this research consisted of 165 undergraduate female students (aged 20-21 years) from the Information Technology Department, Computer and Information Sciences College at King Saud University in Riyadh, Saudi Arabia. Most of the students had a prior knowledge of using and interacting with social networks (e.g. Facebook and/or Twitter). The study was conducted in the first semester of fall 2010, on the Web Applications course. The course taught the students the basics of building accessible websites using the latest web technologies as well as introducing them to web standards and design recommendations. The course was entitled: Study of the Engineering Methods and Technologies for Building Highly Interactive Web Sites. Engineering principles and methods for building web sites were introduced. Also the course assisted students to develop a large web application in phases (King Saud University, 2007).

All the students' blogs and posts were analysed and fourteen students were interviewed. The students volunteered to engage in the research. I conducted introductory sessions to introduce the technology and the research to the students and the teachers. These familiarised the participants with the technology. All students had computers and internet access at home. Some of them had smart phones to enter their emails and for browsing.

The course instructors used The Hive to post online activities for the students and to write about and express their course ideas. The activities acted as a reflection of the course content and extended the discussion beyond the classroom setting. The students were obliged to perform the activities since they counted as part of the final

course assessment. They were also given a rubric on how the activities would be evaluated/ assessed.

6.2 Data collection and analysis

6.2.1 Data collection process

With regard to the participants in the study, there were approximately 165 students participating in the course. I was therefore faced with the decision of how many of these to involve in my study; whether to ask all or only a portion. Other issues included the question of how interactive they could be in a big group: Does the size of the group facilitate their interaction or not? Was it appropriate to involve only some of students? After considering these issues, I finally decided that, from the ethical perspective, it was appropriate to let all the students participate in the study (BERA, 2011). In respect to managing the online group, some online studies divided the discussion into topics and organised the students into sub-groups; in contrast, for my own study aims, I did not divide the students into sub-groups nor the discussion space into topics but gave them the freedom to decide on the topic they wanted or to introduce and comment on any other topic. Thus, they were free to post at any time or anywhere, adding comments that could facilitate the discussion. This, from my point of view, facilitated the emergence of the pedagogical affordances of the social networking sites.

In this study the initial three weeks was for setting up and structuring the students in The Hive group. **In week one** I met with the coordinator of the '*Web Design*' course and we discussed the syllabus of the course. I outlined the results from my previous study in Exeter University and the principles I had developed. As a result, together

we constructed the activities of the course and the tasks based on the principles resulting from the previous study and syllabus of the course.

Finally I created and initiated the community for the course named “*Web 2010*” on The Hive and tested it. There was a choice to make: whether to create my own ‘elgg’ and reserve a server for that or create a group in The Hive, in the Exeter University ‘elgg’. After a discussion with my supervisor, we decided to create a group in The Hive.

In week two, I met with the tutors and assistants of the course and explained my research. I discussed the activities which we established for this course and listened to their comments. Also I demonstrated to them how they could join the group and how we could work together to encourage the students to participate in the group. Finally we discussed how to join the students to the group.

In week three, I met the 165 students, in 5 sections, and for each section I explained my study, its aims, and how they would participate in the study and their right to withdraw at any time. I gave them the consent form to complete. Finally I responded to any questions about The Hive and the research.

After that the students and their instructors were joined in one group in The Hive. During the semester the students and the instructors used The Hive jointly to interact and communicate online. The students felt free to express themselves and their own points of view. Thus a warm and secure learning environment was created. The posted messages on The Hive were analysed and the student interactions were observed.

During the term, I started reading their posts and observed their interaction. I exported their messages to NVivo software to analyse them. The process of reading through their messages enabled me to get a sense of the main themes. In this stage I refined the interview questions based on some emerging issues. For example, some issues appeared in their Hive discussions which needed deeper investigation. Also I collected additional information about the students: the number of friends, the type of collaborative group the students created, and to what extent they were active in The Hive.

6.2.1.1 Observing and analysing posted messages

In The Hive there were various spaces that students could post and contribute to, a personal space called "*Dash board*" and the group space, each of which had files, video, pages, book marks and blog. Data in each space and section posts were collected and analysed. In the collaborative activity "translation" the students collaborated via The Hive. They created 43 groups which differed in their attributes, some of them private and some of them open. Moreover the private groups divided into two kinds, one hidden and the other visible. In order to analyse the posted messages in the private groups, I sent an emails to the students to open the group or accept me as a member, so I became a member of two private groups; one hidden and the other closed. Among these sub-groups, I chose five groups randomly to analyse: three of them open and the other two private. The groups they created for collaborative activity demonstrated how the students collaborated in theoretical subjects. In the following sections I present an overview of each section for data collection.

Students' space:

The students' space had sections that classified that space. The students' blogs were used to post and write the activities. File and video sections were extensively used by the students. File space was used to submit their assignments and upload their files. The video section was used to upload videos, especially tutorial videos. This use of space is a good example of enriching the course material and sharing the affordances of the social networking site.

Group space:

In the group space there was a demonstration that students in this group "*Web 2010*" engaged and interacted with each other, through The Hive. I will explore each section in this space as follows:

Group files: This space was used to upload course documents (e.g. Power Point files, students' grades); here the tutor tried to emulate LMS "Learning Management System" which she frequently worked with. In the file comments section the students sent messages of thanks and wrote their questions. They thanked the tutor for uploading course material. Students did not upload any files there.

Group pages: the tutor used this space to upload students' grades; the students used this space to reflect on their feelings/attitudes towards The Hive and the course. They also contributed to this space by posting some pages related to the course.

Group bookmark: one of the tutors uploaded a link to a video and asked students for their comments. However, the only response from students was to express their thanks. Other than that, they did not use it.

Group video: the tutor used this to enrich and explain some course material and make it more stimulating for the students.

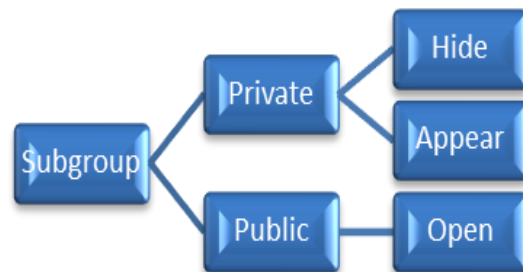
Group discussion: The students and tutors were free to open new discussion threads. While observing this section, I found the students and their tutors used it in the following ways: the tutor used it for announcements, and for giving instructions about submission of assignments and scheduling of labs; and the students wrote comments or asked questions such as expressing thanks, asking about the project, answering each other, and asking management questions. Also group discussion was used to give the students information about their project. In addition, they arranged meeting times, extra lecture times and group work. What was surprising was their use of this section as a voting medium.

Some topics in group discussion had a long thread: one of them had 43 threads in three pages. They discussed their work and projects or helped each other. One important thread of group discussions was *milestone#5*. The students opened new discussion topics about the final project stage. The discussion topic took six pages. Each page had 50 posts except the last one which had only four posts. In the first page there were a lot of thanks; after that the thanks decreased, while in the second and further pages they disappeared. In this discussion I rarely found posts simply for thanks.

Sub-groups' space:

This space had the same sections as other groups. It was created by students to accomplish the collaborative activity “Translation”. The groups they created demonstrated how the students collaborated in theoretical subjects. The students set up forty-three groups in The Hive in order to accomplish the collaborative activity. The groups had different set-up criteria; some students created private groups with restrictions for joining the group. However, some of these private groups were hidden no one could see them except its members. Others created an open group that anyone could join and read their interactions. Figure 6.2 shows the sub-group divisions. In the interviews, the use of private/public, closed/open groups was further investigated. Also the reasons for these kinds of groups were explored.

Figure 6.2: Classification of subgroups.



The group members varied in how they utilised this space. For example, one group used their group space for uploading videos to improve their understanding of the subject of the article to be translated; they shared an Arabic article on the same subject which used the same vocabulary in order to understand it better. They also extensively used file space in The Hive in their group. In contrast, another group used the space for discussion. They only had a limited discussion of two subjects,

one with 9 threads the other 24 threads. One group used the group space just to upload files.

To be certain that I did not read or code the blogs/posts more than once, or misread the new entries, I kept a diary of my reading and updated it regularly. All the posted entries were exported to Nvivo software for later analysis. An initial coding was started at this stage with lots of notes and memos.

6.2.1.2 The interview

During the final two weeks of the term, the interviews took place. I chose a time after the course had finished and before the final exam. I interviewed the tutors as well as the students. An email was sent to invite the participants to be interviewed but it was emphasised that their participation was voluntary. Some students declined the invitation as they had to sit postponed exams. The student interviewees were selected randomly with a criterion-based, consideration of the combination of three attributes: number of friends, the kind of the collaborative group (open, closed or hidden), and the degree of active contribution to the group. The interview sample was selected to cover all these combinations. These procedures were adopted to ensure variety among the participants and therefore to hear different voices. When selecting the participants to interview, firstly, I chose random students, each one have different 'combination' attribute as described above. The other participants would be chosen based on these interview results. An invitation email was sent to them. Unfortunately, some students did not reply to the email invitation. As a result of no reply, I send emails randomly to group of students with the same attributes and waited for their replies. After several emails, I received fourteen participants to the

interview, which is an adequate number for a qualitative study, and I was able to gain valuable data from them.

Semi-structured face-to-face interviews were carried out at the end of December 2010. The interviews lasted between 15 and 20 minutes and each interview was recorded using a digital audio recorder. Also the interviewees were asked permission to record the interview. The interviews took place on the university campus, as preferred by both students and tutors. They were conducted in the language of the interviewees, in Arabic, so the transcripts are also in Arabic. A translation of selected extracts is presented in this dissertation, with the original Arabic versions along with the translated English sections appearing in Appendix 12. Appendix 10 illustrates one example of a transcript after export to NVivo. Interviews were used to explain some ambiguous issues and for deeper understanding.

The interviews were semi-structured, where I established the theme of the interview. In the interview I did not follow a particular order of themes. Additionally, the interview themes list was updated continually during the data collection, as I identified and explored some new topics and issues emerging from analysis of the messages posted on The Hive. Also, I kept an open mind for any information from the interviewees that could open up new themes. For instance, as one student interviewee mentioned, some students created their own social networking site. This theme was added to the interview themes to discover the aim and purpose of this innovation.

Before the interviews, the participants' profiles and coded blogs were read and reviewed to develop further interview questions. Because each student had her special interest, this review of blogs was helpful to gain deeper understanding and

ultimate benefit from the interview, as well as to stimulate recall during the interview. It also helped to formulate and ask appropriate questions. Before each interview, I printed out the themes of the questions, the collocated information about the interviewee that needed more investigation, and set up the stimulus recall event if there was need for it in the interview.

Furthermore, the recordings of the interviews were exported to Nvivo as audio, and coded. The codes emerging from the interviews were the same as the themes which had emerged from their blogs. However, the interviews produced explanations for some of the themes, allowed for deeper understanding of the pedagogical affordances that emerged, and eliminated any doubts about the narratives of the participants.

One of the problems I faced in the interviews was that the interviewees could not contribute to the interview questions well as they could not orally express their ideas clearly. I tried to summarize and reflect back my understanding to the interviewee to be sure that I had understood what she meant.

6.2.1.3 Reflexive Report

After the students submitted their work, they were asked to reflect on how they had used The Hive to accomplish the activity and collaborate, and how The Hive had helped them in learning, if it had. These students' reflection logs were taken into account. These data were used as evidence of the students' voices about their expectations and reflections on their learning via the social networking site.

6.2.2 The process of analysis

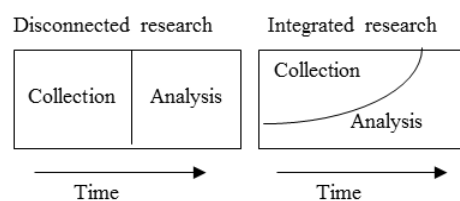
I appreciate Ezzy (2002) when he described a novice qualitative researcher; he gave me the confidence that my questions were normal! I also appreciate his advice about

collecting the data carefully as this helps to shape my understanding of the data and is the start of the analysis process. Before I started to analyse my data, I established how to organise it and the sequence of the process, to be sure that I covered all sections of The Hive where they interacted. During the data collection process, I started the data analysis. The concurrent analysis of data while they are being collected applied in this study. Thus there was a continuous cycle of data analysis and collection. So I found that when I was interviewing the students, the themes were starting to be shaped, my questions in the interview were becoming more specific, and I knew what I was searching for! The integration and interpenetration of data collection and data analysis is practiced by a number of qualitative researchers.

If you have been collecting your data carefully you have already begun to analyse the data...This provides the beginning of data analysis...if data analysis begins only after the data have been collected, researchers will have missed many valuable opportunities that can be taken only at the same time as they are collecting their data. (Ezzy, 2002, p.60-61)

Figure 6.3 shows two possible relationships between data analysis and data collection, Most of the data analysis for this project was conducted after the interviews were completed. However, discussing the research while data collection was being conducted allowed a preliminary analysis of the data.

Figure 6.3: Relationships between data analysis and data collection



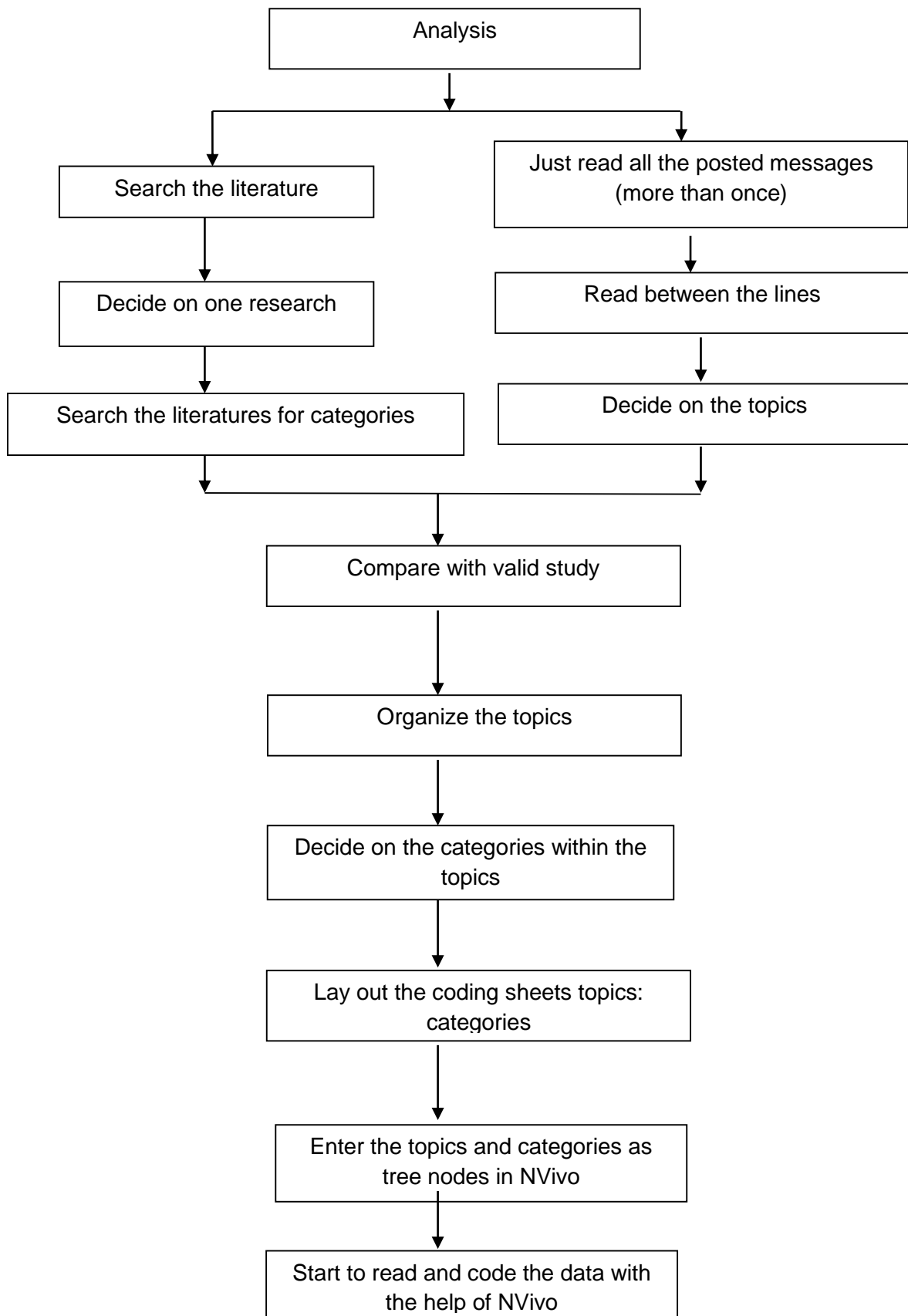
Source:(adapted from Lofland and Lofland 1971, p132, cited in Ezzy, 2002, p.62,)

Analysing the data earlier, while it was still being collected, gave me the opportunity to search deeply for some issues that were raised at the earlier stages. Moreover, as Coffey and Atkinson (1996) observed: “*The generation of ideas can never be dependent on the data alone. Data are there to think with and to think about*” (p. 153). I questioned my data. I thought about it ‘in a loud voice’. After being close to my data, I took time away from it, then when I returned again it gave me a new angle for reading the data.

In researching the pedagogical affordances of the social networking site, the analysis process used a thematic analysis. As the researcher, I stayed open-minded and aware of any themes that were emerging from the data. As I used a thematic analysis technique, I did not write any memos, notes, or codes on the first reading. I read through the students’ posts. After that, I started to write notes while exporting their posts to NVivo. I used open coding, read the data and thought about it constantly, letting the ideas ‘*float about*’ (Ezzy, 2002, p.93), until I absorbed it and felt totally involved in it; only then did I start to analyse it thematically.

In contrast, in analysing the discussion space, I used content analysis as its purpose was to facilitate discussion and my aim was to investigate whether that social networking site afford some knowledge-age skills, such as collaborative learning skills, and this space did lead to a good educational discussion. The students’ assignment (project) was individual work; nevertheless, the students engaged with online discussion to cooperate with each other to accomplish this project. They interacted in a discussion thread called “*Milestone #5, take advantage and benefit*”, which formed the most important stage in their project. Content analysis was employed to analyse this discussion to demonstrate their engagement and ideas.

Figure 6.4: The analysis process for collaborative learning in The Hive, adapted from Radnor (2002, p.84)



To explore the discussion in The Hive, I followed the procedure suggested by Radnor (2002). There were many aspects and categories in the discipline of online discussion. Also the literature was extensive on this subject. Therefore, I searched the literature for valid categories and found some useful guidance in the work of Salmon (2000), as well as Hawkey (2003), who employed a revised version of Salmon. With regard to student facilitators' techniques, I referred to Hew and Cheung's (2008) categories. Also the three typologies of talk (Mercer & Littleton, 2007) were used to revise Salmon's categories and to analyse online discussion on The Hive. These three typologies were explained earlier in Chapter 3, and helped me to explain the types of the talk taking place in the social networking site.

In addition, the students' reflection logs were taken into account. All the above categories were used to compare with, and justify, the categories I obtained from reading through my data. Codes and categories were sorted, compared and constructed until they became saturated. Then I grouped and classified my categories into main topics. This procedure validated the categories I had obtained. Finally, the categories were established and the data were analysed. Figure 6.4, adapted from Radnor (2002), illustrates this sequence of the data analysis process.

I started with students' space and analysed it first. I read their profiles first, then files, photos, videos, pages, bookmark and their blog. Each comment was read and exported to NVivo. After that I read and analysed the group space. Also group files, photos, videos, pages, bookmarks, blogs and discussions were analysed. After that I analysed five sub-groups that the students created. Finally, the interviews were analysed. Themes emerged from the analysis with the help of NVivo. While coding, the themes were linked with quotes from the data, and notes were made. This process continued until saturation was reached, where no further themes emerged

from the data. Appendix 8 shows a screen shot from the NVivo free themes. After that, these themes were broken into two separate codes, or integrated with a similar code, while Appendix 9 shows the themes after classification and integration.

In this study all quotes from the participants are presented in English; these include some translations from quotes in Arabic as the students had the choice to post in either language; however the interviews were in Arabic. After translation into English, they were given a code to link with the equivalent Arabic quote. The Arabic quotes are presented in Appendix 12.

6.3 Ethical principles considered in the research

Wellington (2000) emphasised that “*ethical concerns should be at the forefront of any research project and should continue through to the write-up and dissemination stages*” (p.3). It is important that, especially in the case of matters of educational research, the researcher seeks for truth. Also, the ethical issue is very important in scientific research “*where people are studying people*” (ibid, p.54). The following section illustrates the ethical issues considered in the current study. Because this research was conducted as a thesis to acquire a PhD degree in education, I had the power to control the study in collaboration with my supervisor and the school. In addition, the study did not have any funding, nor was there any agency or organisation sharing the power of the research. That implies that it was the power of the researcher that drove the research, but under the auspices of the Universities of Exeter and King Saud.

I start by presenting the principles I followed in this study, based on the ethical rules of the Certificate of Ethical Research Approval, which was approved by my supervisor and the Chair of the School’s Ethics Committee of Exeter University

(Appendix 11). Furthermore, I obtained permission to access and analyse the data in The Hive “the social networking site” from the School of Education at Exeter University and the Information Technology Department, Computer and Information Sciences College at King Saud University.

With respect to participants, there were many ethical issues to be considered. According to Wellington (2000) and Pring (2004), the main ethical principles that the researcher should consider are treating the participants fairly, informing them about the research, acknowledging their right to withdraw at any time, and keeping their anonymity. In this regard, I followed the Ethical Guidelines on Research of the British Educational Research Association (BERA, 2011). I was guided by the following principles: respect my participants, treat them fairly, and guarantee anonymity. Also, as a researcher I operated a balance of the principles of ‘do no harm’ and ‘the right to know’. In the first meeting with the participants, I introduced the research and its aims. Also I explained that the participants had the right to withdraw from the research at any time and that they would be treated anonymously. Furthermore, I welcomed any questions about the research. For ethical reasons, permission was obtained from the students and school, and access to data from The Hive was authorized. Students’ permission was obtained by signing a consent form (Appendix 3). I asked them to read and sign the informed consent form and, if they wanted to know the findings of the study, to write their details on the form. Additionally, students’ privacy and confidentiality were respected through the use of anonymity. In addition, the interviewees’ permission to record the interview was obtained at the beginning of the interview. In respect to treating the participants fairly, I chose to include all 165 students in the Hive, rather than only including some and leaving others out.

Pring (2004) raised many ethical questions about the involvement of the researcher in the teaching process and how these issues might affect the findings. For example, he argued that when the researcher is teaching in the course of the study, this may result in biased results or unethical findings which may be driven and pressurized by the research team. Consequently, the question was raised: Is it proper to be involved in developing teaching guidelines or in observing the messages and data on the social networking site? As a result, I did not take part in teaching this course. Rather, I observed students' interaction through the social networking site and interviewed them.

6.4 Trustworthiness

Traditional validity and reliability are difficult to address in qualitative researches. Le Compte and Preissle (1984, cited in Wellington, 2000) claimed that it is impossible for researchers to have the same results in naturalistic research on human behaviour. Accordingly, qualitative researchers establish quality criteria such as 'trustworthiness' and 'authenticity', in place of validity and reliability (Creswell, 1994; Lincoln and Guba, 1985, cited in Wellington, 2000).

Triangulation or mixed methods can assure the credibility of research (Cohen et al., 2007). Using two or more methods increases the accuracy and validity of research (Wellington, 2000). Similarly, Campbell and Fiske (1950, cited in Cohen et al., 2007) argued that, in qualitative research, triangulation can confirm the outcome data. Triangulation of methods is vital, particularly in qualitative research, when researching rigorously. In this study I used within-methods triangulation, in which different qualitative methods were applied. In this aspect, the strengths of one method covered the weaknesses of another. The data collection followed rigorous

procedures which increased the credibility of the research. The outcomes of interviews corresponded to those in the observations. Triangulation observation, recall interview, and reflexive report give me different angles to see the data. Analysing the posted message on The Hive until a saturation point was reached increased the credibility of the results. Also I used anonymous reflective reports which increased the confidence of the participants.

Moreover, transferability was maintained through providing detailed description (Cohen et al., 2007). In this study, a full description of the research design, data collection and data analysis were presented to ensure transferability of the study. I think this detailed description allows the reader to transfer this information to another setting and find out whether the same findings can be transferred (Creswell, 1998). In addition, to keep the voice of the participants as close to the original as possible, I did not translate the scripts until the quotes were used to report the findings (Appendix 12).

Summary:

In previous chapter, the exploratory study to design the theoretical framework and principles to design the intervention (Phase One) has been described, fitting all the principles of DBR. In this chapter one iteration of the research (Phase Two) has been discussed. I have described the site of the study in Saudi Arabia. I have also presented a detailed account of the research methods, data collection, and data analysis. Finally, ethical issues considered in this research have been presented.

Chapter 7 : Results and Findings

“Qualitative researchers must choose not only what ‘story’ they will tell, but also how they will tell it” (Wolcott, 1990, p. 18). In this chapter, I report the results from the analysis of data and present how the findings of this study answer the research questions. The pedagogical affordances of the social networking site will be outlined in two main sections: 1) affordances as perceived by students and 2) affordances as perceived by tutors. Some constraints found in the implementation of the social networking site in this context will be presented. Following this, I will consider how these findings can contribute to student learning in higher education courses in Saudi Arabia. The chapter ends with a summary.

In the previous chapter I described how the data was collected and analysed from the participants’ interactions in The Hive, from interviews as well as from reflexive reports, in order to answer the research question: What are the pedagogical affordances of a social networking site (specifically ELGG, a Facebook-type environment), in higher education in Saudi Arabia? This question is divided into the following sub-questions:

1. What affordances for learning do the students perceive in a social networking site in higher education?
2. What are the pedagogical affordances of a social networking site as perceived by teachers?
3. What factors might impede the use of social networking in higher education in Saudi Arabia?

4. What is the added value, if any, of social networking sites for learning and teaching in higher education?

7.1 The pedagogical affordances of a social networking site in a course in higher education in Saudi Arabia

The aim of this study was to explore the pedagogical affordances of the social networking site (Elgg). Earlier, in Chapter 3, the definitions of 'affordances' were discussed. In this study I advocate both Gibson's (1979) and Norman's (1999) definitions. I believe that the 'affordances of The Hive' means the ability of the students to do actions on the Hive depending on the embedded criteria of the Hive'. In addition, it means 'the perceptions of the students of the actions they can perform while interacting within the Hive'. The affordances illustrated in this section emerged from analysing the data, iteratively testing and developing each theme against the data, as described in Chapter 6. With regard to pedagogical affordances, the data analysis revealed two areas of interest: student perceptions and tutor perceptions. Each area includes meta-themes, which, in turn, include related themes. It was explained in the previous Chapter 6, how the emerging themes were categorised and organised into meta-themes and related themes. Appendices 8-10 show screenshots from NVivo of the themes emerging from analysis of the data of the Hive after organising and categorising.

The Hive (Elgg) was designed to have some affordances but, when the students interacted with this environment, more affordances were identified. However, some of the designed affordances may not have worked. In the following sections I will illustrate the main pedagogical affordances of The Hive found in this study with more details of each one.

7.1.1 Tutor perceptions

The pedagogical affordances tutors perceived in the study will be illustrated and summarised in this section. In Section 6.2.2 I described how I analysed the data and the procedures I followed to categories the data and group them into meta-themes. The affordance themes emerged from the coding and analysis of the messages posted on The Hive shows on the right column in Table 7.1, then the related themes were catagorised and grouped into one meta-them (left-hand column in Table 7.1). These themes were reinforced by the responses of the tutors in the interviews, where more themes also emerged. The pedagogical affordances perceived by tutors were classified into two meta-themes: 1) course management and 2) feedback about the students. These two meta-themes and their classified sub-themes presents in Table 7.1 below. I will address each meta-theme as perceived by tutors in turn.

Table 7.1: Pedagogical affordances of The Hive perceived by tutors.

Meta-theme	Corresponding sub-themes
Course Management	Uploading course materials, reporting students' grades, making announcements, and answering students' questions.
Feedback about the students	Students' learning, students' thinking, and identifying/introducing students.

7.1.1.1 Course Management

All tutors used The Hive for the purpose of managing the course, involving a number of tasks/activities, as shown in Table 7.1: uploading course materials (e.g. PowerPoint presentations, references, activities), reporting students' grades, making

announcements (e.g. instruction, marking criteria, describing the course project, arranging lecture times), and answering students' questions. I noticed in the interviews that all tutors had used blogs, mailing lists or Learning Management Systems (LMS) with the students in their previous courses. As discussed in Chapter 2, the university introduced JUSOR as a Learning Management System (LMS) and encouraged tutors to use it in their courses. Thus, I assumed that the tutors intended to use The Hive as a LMS as a result of their previous experience. Nevertheless, The Hive does not provide this facility very well. This may have been the reason why the tutors found it difficult to use as a course management tool. For example, in the interview one tutor explained her use by saying:

I used The Hive with a mind set as LMS... the system [The Hive] did not help me a lot in this purpose. But I tried to reshape it; I was trying to adapt it to LMS. (Quote 7.1)

She used the discussion section for announcements, to emulate the LMS as a result of her experience on a previous course. In contrast, in Phase One of the study in Chapter 5, this theme was not found when analysing the data. In Phase One I asked one of the tutors of Exeter University: "*why didn't you upload the lecture presentation on The Hive?*" He said: "*we want the students to attend the lectures and interact with each other in The Hive*".

This emphasises that The Hive does not support course management as does LMS software (e.g. web CT, blackboard and Moodle). The Hive is a dynamic environment, its content layout changes frequently depending on members' contributions. This feature of The Hive does not assist the affordance of course management, in contrast with LMS which is designed for this purpose; nevertheless, some course management is possible in The Hive, as was found in this study, though with some

limitations. It turned out that the tutors and all of the participating students in King Saud University acknowledged the use of The Hive as a course management tool. They argued that they could find everything related to the course in a single site, 'The Hive'.

7.1.1.2 Feedback about the students

Two tutors reported in the interviews that The Hive gave them feedback about what the students understood and how the students were thinking. This kind of feedback helped them to clear up some student misunderstandings in their face-to-face teaching and gave the tutors the opportunity to know their students better. This opportunity could not be found in the lecture setting. This finding is similar to that of Hemmi et al. (2009), who reported that students' blog postings helped lecturers be aware of their students' understandings and the procedures needed in the lecture to engage them. Also, Al-Khalifa (2008c) found that blogs provided instructors with direct feedback from students.

I noticed that the tutors were on The Hive most the time, as supervisors. The tutors sometimes commented by themselves and sometimes let the students answer each other; they also posted a correction if needed. This space gave the students liberty to comment/add posts and interact. As a result, The Hive introduced the students to their tutors through their posts and blogs, and gave the tutors the opportunity to receive feedback; in contrast, in the classroom, as one tutor reported, they could not receive feedback from their students. In addition, The Hive helped tutors to gain an insight into the students' learning. For example, one tutor reported the following about using The Hive:

The Hive helped me to know the way my students think .For instance, I found out how students learn from their posts, how much they are excited about the course. It also gave me an insight into their way of thinking. (Quote 7.2)

7.1.2 Student perceptions

The data analysis as explained in section 6.2.2 revealed the perceptions of students with regard to the affordances of the Hive-Elgg Social Networking Site. I explored in Chapter 5 the pedagogical affordances which emerged from Phase One of this study, for example sharing and stimulating. I found that certain themes which surfaced in this second phase are consistent with the findings found in Phase One. In this phase, the same themes emerged with some differences in frequency. Table 7.2 present the themes of the affordances of The Hive from the students' perspective. I will explain these pedagogical affordances in depth in this section.

Table 7.2: Pedagogical affordances of The Hive perceived by students.

Meta-theme	Corresponding sub-themes
Reflecting	Reflecting on their work, reflecting on the lectures, reflecting on their reading.
Stimulating	Stimulate to work (e.g. implement or design), think, search and read.
Sharing	Sharing articles, files, videos, codes, websites, and photos and sharing their feelings.
Enriching course materials	Enriching course materials, formal debates, linking with their experiences, new issues.
Collaboration and managing group work	Asking technical questions, organising group members, arranging group work, decision making, arranging face-to-face meetings, online meetings.
Online discussion	Establishment, engagement and interaction.
Other affordances	Voting, formal debates and e-tutorials.

7.1.2.1 Reflecting

When I analysed the posts on the Hive, I found that the students made few reflective posts compared to the number of participants in the study and the overall number of posts. Nevertheless, I did find some reflective posts; the students reflected on their learning, their work, the lectures and their reading, and reported their attitudes, whether positive or negative. I noticed that the students' reflections were mostly posted in their blogs. For example, in the interview, one student explained her perception of using her blog for reflection, by saying:

In my blog, I posted many useful things. For example, if we have a new phase I would post in my blog things such as [explanation/ reflections of my understanding of this phase] that helps the students go forward in this phase. (Quote 7.3)

It is clear from this quote that she was aware of the meaning of reflection and used her blog to reflection her learning. However, her blog did not have more than one reflective post. In addition, the students reflected on their work. I found a post in which a student reflected on her journey to design and build her website by posting "My project":

At the beginning, I had no background for the course, either in Web design or Web programming. Although the course was very enjoyable, it was very specific. This is my opinion about the course as a whole. For the project, firstly, I had lots of doubts about the web design. This is due to many reasons. First, because of my limited background in designing. Secondly, I often prefer simple designs rather than complicated ones. So far, I have covered over four stages of my project and the final stage still remains to be completed. The first stage: planning ... [she carried on reflecting on each stage] (Quote 7.4)

She posted a long post in which she started by reflecting on the course content and her background, then she described her learning while in the design process. It is noticed from this post there was no critical thought; her reflection was very simple and she did not reflect in depth.

Similarly, I found many posts that reflected on the lectures and labs. One student reflected on her learning from the lab session in posting a blog about the problems of lack of planning in building a website by:

These are only drops in the sea of common problems of designing and building Websites and, to avoid these problems, we discussed with Mrs.... in the lab last week, two issues... [Then she carries on reflecting her learning from these problems]. (Quote 7.5)

Also, in this above post, she just wrote about her understanding of the issues. In addition, I found that in many posts students wrote about their feelings and imagination. For example, this student wrote in her blog:

Honestly, I wish it was a figment of my imagination; I could go to any country through the internet without using any kind of transport. Also I could feel the things in the web as if they are actually in front of me, touch, smell and taste if it is food. (Quote 7.6)

An interesting post at the end of the term was in the group discussion entitled “*put your fingerprint*”, where the students reflected on the course, thinking about their learning and their attitude towards the course. In this thread I thought I would find many reflections; however, few posts were posted.

The data demonstrate that the students reflected on The Hive, but the students did not reflect much at the beginning of the innovation but did so more frequently at the

end. While there wasn't that much reflection in student posts overall, there were a few good examples of students' reflection on The Hive. The general lack of reflection will be discussed in more detail in the discussion chapter. While the tutors did not encourage the students to reflect, few students reflected on the environment of The Hive and perceived it to be an environment in which they could reflect. This finding concurred with the claim of Sharpe et al. (2010) that blogging supports reflection in pedagogy.

7.1.2.2 Stimulating

From analysing the data, I consider that The Hive offers good pedagogical affordances for stimulation. In this study, I found that interacting and working in The Hive stimulated students to work (implement or design), think, search and read. This finding is similar to Al-Jarf's study, in which it was found that the use of emails with English language teachers stimulated and refreshed their language development (Al-Jarf, 2005a). All the students reported in their interviews that interacting with each other on The Hive stimulated them. Many students agreed on that, even when they merely read others' posts and did not contribute to the discussion; they were stimulated just by reading others' posts. Many students commented in the interviews that they learned more within The Hive. I will show some examples from their interviews of how they acknowledged that the use of The Hive stimulated their learning in many ways. One student, for instance, reported her browsing of the social networking site by saying:

Some students upload posts, such as their projects, so I could enter the students' personal site through their blog and look at what they have done. Also some students posted useful media and links which helped me in the phases. Other students posted

their activities so that I could learn from their written style if I liked it. (Quote 7.7)

This student claimed that browsing The Hive stimulated her to work on the project (designing a personal website). She read other students' posts, browsed uploaded files, and explored their work. All students reported that they used The Hive to ask and answer questions; the students' posts stimulated other students to ask questions too. I noticed from analysing their interactions that they were stimulated to work from the answers/questions posted on The Hive; they stimulated each other and encouraged each other's thinking. Even if they had no questions or answers of their own, they were stimulated by reading other posted questions and answers. For example, one student said in her interview:

For sure, we read all posts related to this activity to get more guidelines and benefits from course mates. (Quote 7.8)

Another student indicated:

So, for example, the girls ask questions which I benefit from. Some of these questions I never thought of before. But when I read or see their questions, I think ... yes... that is what I need... (Quote 7.9)

The students' questions also stimulated others to generate new issues. For example this student said in the interview: *"The girls' questions are useful for me; they introduce new ideas."* (Quote 7.10)

The Hive stimulated many students to design and try things out; for instance one student comment on an uploaded video: *"Seriously, I'll take them into consideration from now on."* Another student commented in the group discussion about a post on how to design using HTML: *"this weekend I will try to do it"*.

In the posted activities I noticed that, after one student wrote and posted her response on the activity, a dozen posts followed on The Hive. I assume that the first post encouraged other students and was used as a guideline. I could clearly see that they were stimulated to work and think. The students were stimulated even at the end of the term, when I found some students posted new posts in their blog. For example one student posted a whole article at the end of the term.

In other cases, I realized from analysing their interaction that they were stimulated implicitly to search the same websites that were helpful in their specialist subject or to write or comment in the same style. Two students reported in their interviews that they benefited from other students in their style of writing as, in the interview, one of interviewees said: *"I liked the writing style of some girls, especially in English, so I benefited from that and followed their style"* (Quote 7.11). Similarly, Saudi students in another study (Al-Jarf, 2006a) had reported that their English improved as a result of reading posts by other students from another culture - Ukrainian and Russian students.

Finally, from the students' interviews and posts, I found more evidence that supported stimulating affordances; the students were stimulated by browsing and reading posts, from interacting with others and through questions/answers. The students in King Saud University confirmed that they had gained useful knowledge and experience from reading posted messages. They were stimulated to ask questions, search, design, as well as to post contributions.

7.1.2.3 Sharing

The data made clear that students shared a lot of resources in The Hive; they shared videos, photos, files, websites, their work, their thinking, their reading, their learning,

articles, and their feelings, even their ideas. Also, they extensively answered each other's questions. This extensive sharing of materials indicates that the students benefited from sharing posts in their learning. Some of the posted resources helped them understand the course subject better. Others explained some unclear issues. Furthermore, these posted resources saved other students time by offering to search the internet or the library.

When analysing the students' interaction on The Hive, I noticed that most of these shared resources were concerned with explaining the subject matter of the course. Most of these resources were videos, articles or websites e.g. how to design websites in HTML language. One of these posts concerned a student's feelings about her learning through Firefox add-ons:

Honestly, I'm so in love with Firefox add-ons. I've tried many of them, and I am always looking for new cool ones. I would love to share with you here some impressively helpful ones related to our course ... [she carries on describing each one]. (Quote 7.12)

Moreover, I found that there were a lot of Java script codes posted in The Hive to share with each other, where the students used Java script and HTML to create and design their website in this course. These codes were posted after being tested and used by the student. By this means, for example, one student reported in her interview that the most exciting aspect of The Hive was sharing codes:

It was difficult to search for codes on the internet, so I entered The Hive and found codes posted by my peer after she had tried it. (Quote 7.13)

I found that some students shared their ideas and thoughts in The Hive; for example one of the students said in the interview about The Hive: "*The Hive helps us to*

create an interactive environment between us and to share our thoughts” (Quote 7.14).

In addition, after analysing the students’ posts I realised that The Hive gave the students a space to share their questions and learning. Many students believed that when you asked a question you would definitely receive the answer shortly from tutors or fellow students. For instance one student said:

Put your questions, and they will be answered soon by a tutor or other students. Also you can see all the answers to your questions or even answers to questions you have not thought of.
(Quote 7.15)

To conclude, the sharing affordance emerged frequently from the analysis of students’ posts. I noticed that the students shared more actively in The Hive. In addition to their feelings and learning, they shared materials related to the course without any critical comments. I will discuss this finding further in a later section. In the interviews, I found that the students acknowledged the affordance of sharing; they believed that it saved them time in searching the library or the internet and helped them in their study for the course.

7.1.2.4 Enrichment

I found that one of the most commonly occurring themes was that of enriching the course materials. There were a lot of posts that enriched the course materials. The students posted articles, video and websites, for example: Common errors in the designing of Web pages, 10 basic skills for a web designer, Web designing steps, and 10 Steps To The Perfect Portfolio Website.

I noticed that all posts were copied from other sites or articles. I did not find critical thinking in their posts. This issue should be questioned and I will explore it in greater depth in the next chapter but, for now, it is important to report that the students copied the resources without any criticism. For example, one student posted in her blog a link saying: *“There are a few good tips in this website that you might want to check out”* while another student posted *“Here is a good presentation to learn CSS - I hope you find it helpful.”* Another student posted about PHP in *“What is PHP?”* She ended her blog by giving the reference and a link to more examples of PHP. Other students posted: *“Do you know that the default page for any website is index.html, so we never write it explicitly in the URL. For more about this read ‘what is the index.html page?’”* As I mentioned above, we can see from these examples that the posted messages were copied from other resources without any critical comments added or post with their own words.

In addition, the students and their tutors raised new issues, which helped open new discussions for in-depth understanding. Some students linked their posts with other courses, some of them engaged with an e-tutorial, and finally I found some students debated about the IE browser and how to test your browser in an interesting thread. These formal debates and e-tutorials enriched the materials related to the course. I will illustrate what I mean by these terms and demonstrate the affordances of The Hive later, in Section 7.1.2.7.

7.1.2.5 Collaboration and managing group work

The Hive was used to manage group work. I found that the majority of students used The Hive to do their collaborative activities and manage their group. I found 45 groups created for collaborative activity. The students used The Hive for group

communication, to arrange face-to-face meetings, arrange a face-to-face workshop, meet online and divide the work between group members. Most students considered that The Hive facilitated group work, supported their interaction and improved the quality of their work, so they wished to continue using it in the future. One interviewee asked to create a group in The Hive to help with other courses. In contrast, a few students disagreed with this. In addition to The Hive's facilitation of group communication, most students considered it superior to other media. For instance, this group believed that The Hive facilitated their group work; they reported that:

We have discovered that [the] Hive really has a lot of features. It helps us communicate with each other without meeting to make the translation [the collaborative activity].

Similarly, this group reflected their use by saying:

....at the site [there are] many tools [facilitate the] communication between members such as SMS, it [The Hive] has served us well so we do not need to use any other [communication tools] for keeping us in touch with each other anymore.

Furthermore, the students realised the power of using The Hive to organise their team work. This group reflected on using The Hive in group work by saying:

We used to send emails or meet face to face in other courses. But after using The Hive, it has become easier to contact and exchange information with others. Sometimes I would send an email, it is not received or it will be a missed email. Also I might forget to send to some students. But here in [the Hive] there is one group I send to so everyone reads and comments. Besides, it is clear who contributes, as well as the previous contribution.
(Quote 7.16)

While another group said about their experience in group work on The Hive: “we become in touch all the time.” Another reflection on using The Hive in group work was: “All the discussions are simultaneous without any interruptions; I can see all their responses” (Quote 7.17).

In contrast, one group had negative experiences with managing group work on The Hive. They perceived that The Hive did not facilitate their group work. As they revealed in their reflection report, they used Messenger instead of The Hive in their collaborative activity. As they reflected on their work in The Hive:

We met again on The Hive, and every student presented her part. We criticized it in an appropriate manner. We found The Hive very difficult to send and receive information [discuss] so we used the mobile phone and online chat-Messenger - as it saves time and effort.(Quote 7.18)

In the interviews, I discovered that the students in this group were all friends and were used to working as a group in other courses. Also they were used to doing their group work in their familiar way as their group members had not changed. I assume it may be that they did not need any new means for doing their work. However, when I analysed their group in The Hive, in contrast to their claim I found some discussion threads in their group and some interaction there.

Moreover I discovered the flexibility of The Hive in manipulating group work, where the students in the collaboration activity created groups in The Hive with different criteria. These groups differed in their type: some students created an open group which was not restricted to the members, while others created a hidden group and yet others a closed group, as I explained in the previous chapter. In the sub-groups,

the students benefited from the discussion in order to achieve their translation goal. More findings about these groups will be illustrated in the next section.

Reasons for sub-groups

In the interviews, more investigation on the use of private/public, closed/open groups was carried out. The reasons for these kinds of groups were explored and it was found that some students wanted to share their work with the other groups so they created an open group; in contrast, other students created a closed group to collaborate among the group members only. All closed groups agreed that they closed their group to prevent their work from being copied. Plagiarism is spread all over education websites; it is easy to copy and paste. Some groups used the same articles and, as the activity was assessed, they did not want anyone to take their work. For example, this student explained the reason for creating an open group:

Interviewee: Why is it closed! What is the benefit from the social networking environment? ... Is it to benefit from each other? I want to see what others do in their translation, how they translate, that is why we are taking advantage of them. That is why we create an open group for those who want to know how we started our work, and get benefit from our translation, or from something we add, such as a new word.

Interviewer: Did you get benefit from other groups?

Interviewee: Yes, we benefited from one group's work, their subject was close to ours, but I have forgotten the group name. We opened their group; it was open and realised that they were our college mates ...We know them, and benefited from their translation of some of the scientific words, and the special words which were translatable only by meaning. (Quote 7.19)

Another interviewee confirmed this idea by saying:

To participate more with other students in order to benefit. For example, if one group has the same article as ours and want to see our translation of certain words. Also in the criticism task, if they want to criticise our article they can go back to our discussion and read the reason why we translated some words as they appeared. (Quote 7.20)

In contrast, the private groups' members reflected on their group work type by saying:

In the collaborative activity we created our group. It had more privacy because there were some students who had the same translation ... the group was good and this is something new - we did not do it before. We felt that this helped us to upload the files during the discussion. However it [The Hive] does not support Arabic ... Because some students translated the same articles, and this activity will be assessed, so it was possible for some students to take our work. (Quote 7.21)

Another student gave the same reason and generalised it by saying: *“Closed! They fear for scientific theft [plagiarism] which is frequently found.”*(Quote 7.22)

Also this student emphasised the same idea:

In the translation activity some groups had the same article. So it is possible to take from our work. Some students used to copy and paste. (Quote 7.23)

It was noticed that each group created their sub-group space that satisfied their aims and needs, with the social networking site giving the students the facilities to set their group criteria.

7.1.2.6 Online discussion

The data in this study revealed that The Hive supported the students' engagement in online discussion. After analysis of their posts, I found The Hive gave them space to

discuss on an individual level or on a collaborative group level. In addition, The Hive demonstrated discussion affordances for practical as well as theoretical subjects. I found that the majority of the discussion took place in their created collaborative activity groups. Also some great discussions were carried out in the discussion section on the “*Web 2010*” group. Rarely did I find a discussion on their blog. The students were active in the group discussion more than on their blogs. Most students acknowledged that The Hive facilitated online discussion.

I explored the data for online discussion categories, as was mentioned previously in Chapter 6. First I reviewed the literature for indicators of the quality of online discussion. Then I assembled categories from Hawkey’s (2003) work, which is a revision of Salmon (2000) (See Figure 6.4 explain how I analysis these data). I used these categories to analyse the data because they simplified the data analysis, as I described in the previous chapter. It also facilitated examining the quality of the talk. Table 7.3 summarises the topics and categories of the online discussions that took place on The Hive.

Table 7.3: Topics and categories from analysis of online discussion on The Hive.

Topic	Categories
Establishment	Establishing ground rules. Asking for advice. Exploring difficulties. Offering new ideas. Identifying and describing problems. Inviting students to contribute. Giving own opinions and points of view. Asking challenging questions.

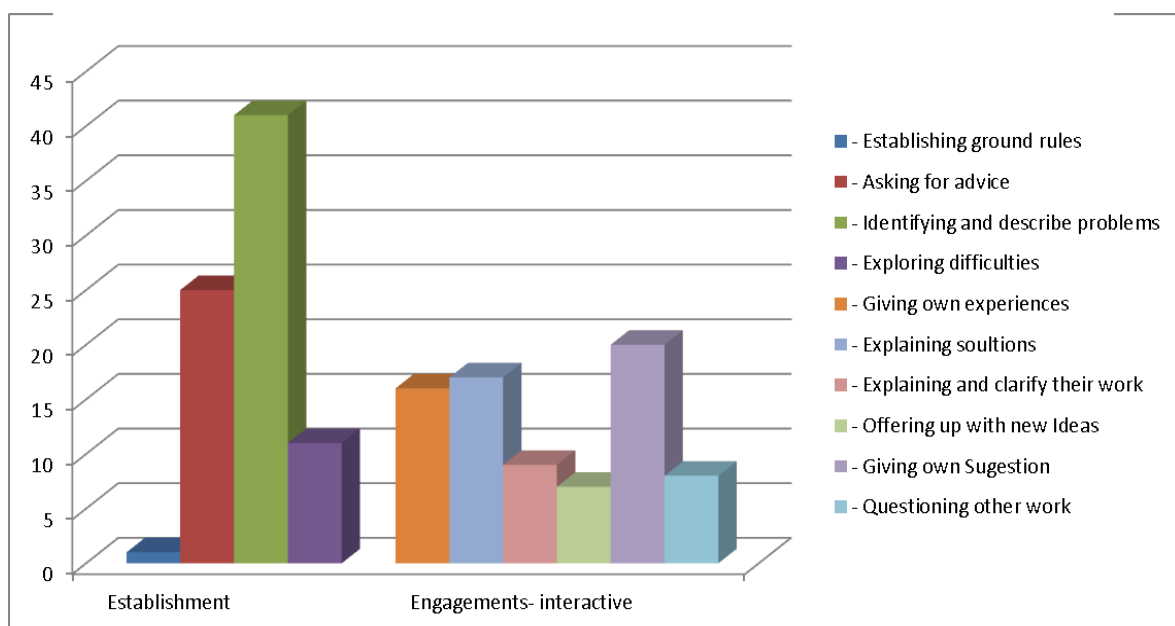
Engagement and interaction	<p>Offering solutions.</p> <p>Explaining and clarifying their work.</p> <p>Explaining solutions.</p> <p>Giving own suggestions.</p> <p>Giving own experiences.</p> <p>Questioning other work.</p> <p>Exploring and supporting issues.</p> <p>Summarizing previous contributions.</p> <p>Proposing actions based on ideas that have been developed.</p> <p>Revising work of others.</p> <p>Discussing and expanding ideas of others.</p> <p>Criticising the ideas of others.</p> <p>Evaluating and reviewing the work of others.</p>
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Although analysis of the quality of talk is beyond the scope of this thesis; nevertheless, I am concerned about the quality of the online discussion in The Hive so I will examine it in a brief way. I will analyse the quality of the online discussion based on Mercer’s three-part typology of talk: Disputational Talk, Cumulative Talk and Exploratory Talk. I explained these talk types in Chapter 3. Disputational talk challenges the views of others without justifying the challenge or offering new information; Cumulative talk builds on others’ contributions without critical comment; and Exploratory talk offers critical contributions with new information (Mercer, 1994, cited in Mercer and Littleton, 2007, p. 58-59). The analysis showed that the students engaged in online discussions in which they engaged in these three types of talk.

In the group “*Web 2010*” discussion space, the students interacted in an online discussion. I found in some threads that the students established the discussion by proposing ground rules. I was able to distinguish the following categories in their

discussion: establishing ground rules, presenting new ideas, asking for advice, exploring difficulties, raised or explored new ideas, identifying and describing problems. I characterised the students' posts as 'engagement in online discussion' when they questioned other work, or offered solutions (e.g. explaining and clarifying their work, explaining solutions, giving their own suggestions or giving their own experiences). Figure 7.1 shows these categories found in students' posts with the numbers of posts. From these categories emerging from the students' discussions I was able to classify their talk into: Cumulative talk where they built on others posts without criticism or disagreements, and Disputational talk where they questioned and challenge other work without explanation or clarifications. I categorised their talk as Exploratory when they constructively criticised and added to other posts.

Figure 7.1: Categories found in the students' discussion in the Web 2010 group.



In addition, The Hive's discussion space helped the students to collaborate on individual assignments. For example, in the "Web 2010" group, one student opened a new discussion thread, "The milestone #5", an example of a practical subject of

discussion. This thread demonstrates how the students engaged in discussion to achieve their individual assignments of designing and creating their own websites. One student opened this topic of discussion specifically for their individual project 'stage five'. She established this thread by posting:

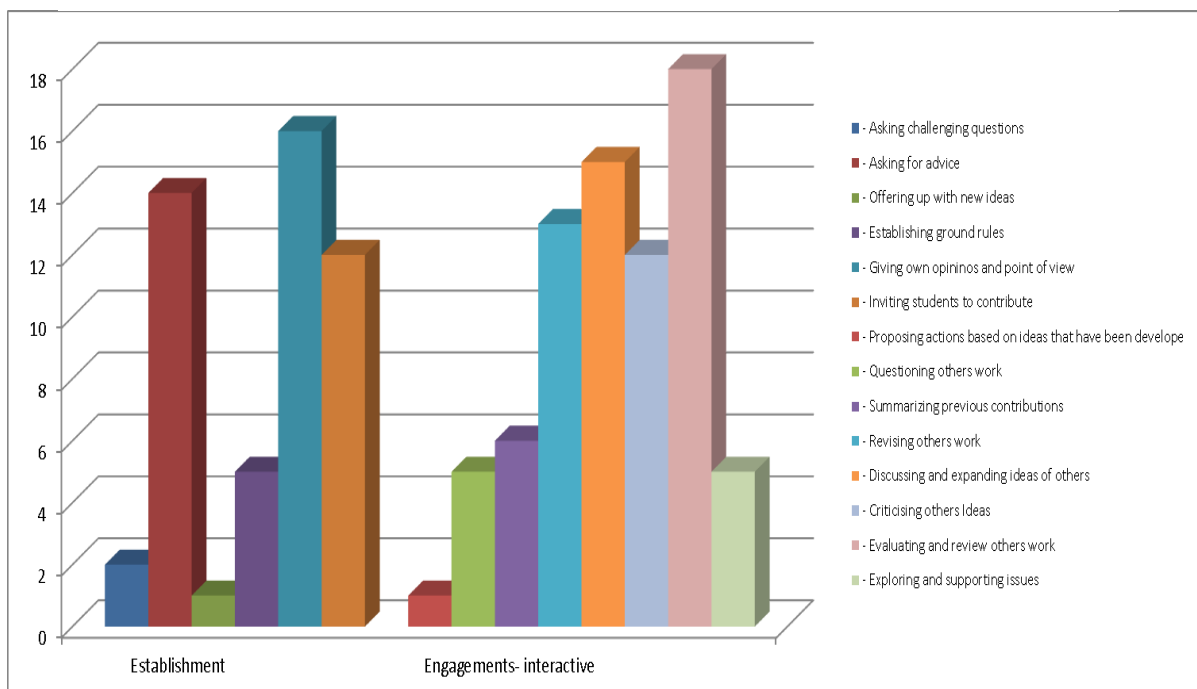
On behalf of all course students I open this post to discuss the final phase of the project; anything is possible to benefit from in this phase or any question that revolves in your mind, post it here. Insha'Allah this phase will be the easiest stage to achieve. This is due to our collaboration, Lord willing. (Quote 7.24)

Nevertheless, the project work was individual; the students interacted and collaborated in a discussion to accomplish this. Consequently, they demonstrated that participating in collaborative learning discussion is a skill for the new knowledge age in individual tasks, not merely in group tasks. They started the discussion by asking for and giving advice, then they shared a learning video and website. They described their own experiences, explained their learning, and worked towards the solutions for the programming problems they faced. I noticed in their postings there was an extensive discussion on coding: they presented their problems in coding, asked/answered questions about web design and shared their scripts. In this thread, because the students built on others' posts without critique, their discussion may be classified as Cumulative talk.

In the collaborative activity, each group of students created a new group space, as I explained in the previous chapter, to discuss this activity. The main aim of these groups was to accomplish their translation activity, which could be considered a theoretical subject for discussion. Exploratory and Disputational talk could be distinguished in their created group discussions; they proposed and justified until

new ideas were approved and agreed. I found, in their group posts, that the following categories emerged: establishing ground rules, asking for advice, inviting group members to contribute, coming up with new ideas, giving their own opinions and points of view, and asking challenging questions. Moreover, the students' posts explored and supported issues, summarised previous contributions, proposed actions based on ideas that had been developed, revised the work of others, discussed and expanded ideas of others, criticised others' ideas, evaluated and reviewed others' work and questioned the work of others. Figure 7.2 shows these categories of talk in their activity group and numbers of posted for each categories.

Figure 7.2: Categories found in the students' discussion in created groups.



As mentioned above, in these activity groups I found that each activity group opened by establishing the rules of the discussion, as this group posted:

So, any discussions or questions related to this activity will be posted here. It is also important to comment on each others' work

in order to make a better translation. Let's keep in touch with each other and share our knowledge. Good luck to all of us.

Furthermore, as an example of the finding that in the students' posts they encouraged each other to contribute, this student in her post invited her peers to respond:

Girls, I've already started translating part of page 1 and I want your opinion please + I have some questions on some medical words I'm not sure about. Here is the paragraph and its translation: ... I'm not sure about the word "unrelenting activism"?? So if you have a comment please write it down.

To illustrate these findings, I will present some quotes from students. After submitting their work, the groups described their use of The Hive to accomplish the activity and how The Hive helped them to collaborate and discuss. For example, one group narrated their use of The Hive in collaborative activity by trying to discuss at the same time as they reflected on their discussion:

We used The Hive to accomplish the translation activity. We created a new group that's called "....." to have our online meetings on, discuss and share our ideas, both asking and answering questions, and then revising our work to make the final document.

Another group reflected:

Via The Hive, we discussed the translation ... and we asked each other about the meaning of some words and how to get the correct translation. (Quote 7.25)

The majority of students acknowledged the discussion on The Hive and how it afforded an appropriate environment to discuss and collaborate. For instance, these students reported on the group work in The Hive as follows:

We almost used all its [The Hive's] tools which really helped us with collaboration, communication and decision making, instead of using the telephone, or meeting somewhere. It also helped us as a team to share information, work together, discuss ideas, and review different types of media.

Most students used The Hive and made it the only tool for discussion in their collaborative activity, as this group reported on their use of The Hive and how they made it the only tool to complete the activity:

We dedicated time for translation and we met online for the translation activity ... this time we met online... and we did not use any other tools. (Quote 7.26)

In contrast, a few students deprecated use of The Hive to facilitate online discussion and felt that it wasted their time. This group used traditional means of discussion and used emails to send their files, as reported in a previous quote (Quote 7.18).

In students' blogs I found that they rarely engaged in online discussion. However I found that, in some posts, they opened their work for criticism and discussion. For instance, one interviewee explained why she uploaded her project on The Hive; however, she had few comments in her blog:

I want to share with other girls, I want them to tell me if something needs revising, or if something is of interest to them, or if there is something they might benefit from as an example. (Quote 7.27)

In summary, it has been demonstrated that The Hive facilitated online discussion and supported students' discussion. In this study, students' discussions were distinguished by three types of talk: Cumulative, Exploratory and Disputational. Although the students were not used to discuss on online in educational context, I found that they did engage in online discussions in theoretical and practical subjects.

The students were more active on the discussion board than in their blogs; one reason may be that there was a notification on the discussion board for new comments or posts which was not the case in their blogs. Nevertheless, a few students preferred the traditional means of discussion since they were friends and they had worked together in previous terms, but the majority of students acknowledged the usefulness of online discussion on The Hive. Many students were in favour of having other courses on The Hive.

7.1.2.7 Other affordances

I discussed affordances theory in Section 3.2.2, where 'affordance' refers to the properties of an object, or an environment, which allows an individual to perform an action. This can be clearly found in the students' online discussions. In addition to the findings of the previous section, some further affordances of The Hive could be classified as e-debate, e-tutorial, and e-voting system, where they interacted with The Hive environment and used its affordances to their purposes. These affordances did not appear frequently; some of them appeared once only. I will address each one in turn in the following sections.

E- Debate

The data in the present study reveal that the students' blog afforded a space for debate; one student posted a blog about the IE browser and how to test your browser, which was followed by other students debating this subject. The debate about the "*Hate IE?*" post had twenty comments. In these threads the students' discussion may be classed as a formal debate; I found that they explained, criticised and asked questions. Each student commented in this blog by demonstrating why she used this kind of browser, with some evidence. In addition in this kind of debate

there is no need for take turn everyone can post and comment any time. It is noteworthy that this affordance found in Phase One of the study.

E- Tutorial

I found that the students used The Hive as an e-tutorial. They carried out a small tutorial with each other. Maha (pseudonym) posted in her blog a tutorial about designing a website using HTML languages. Many students engaged in this session by asking questions and exploring how this tutorial helped them in their design. Interestingly, the e-tutorial “*How to design a website*” motivated and stimulated other students to design their own website. One of the posts in this tutorial was: “*I wanna go back on Sunday and practice that for real*”. In the interview, Maha commented on this tutorial by saying:

I said to my friends, when they asked me on the campus, how to do this and that? I will explain it on The Hive. It is better than explaining to each one separately. I will post my experience: explain and demonstrate. Actually I explained via The Hive.
(Quote 7.28)

I notice that the e-tutorial motivated many students to engage to the discussion; also it is seemed to fulfill each student’s need at their own pace.

E-Vote

The students voted through The Hive; actually, I found that they used The Hive as a voting tool. In the group discussion one student posted:

This post is for requesting a postponement of the 3rd phase to Saturday the 11th of Dec...My fellow web mates: Please approve or tell us if you have a problem with postponing the phase to Sat. by commenting here.

After that, the students started to comment, for example: *“Yes ... me too, I vote for postponement of the submission.”* After that the tutors decided to postpone the submission date to 11th of December.

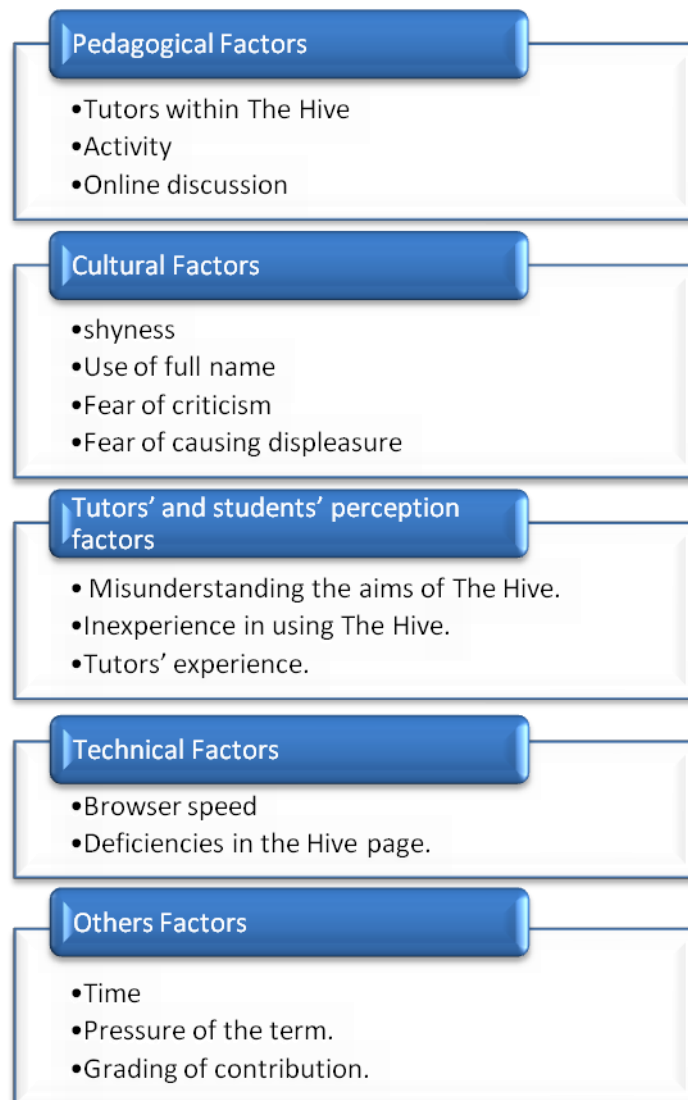
In the web there are many voting tools, but the way the students afforded The Hive to a voting tool is interesting. It is noticeable that this voting technique is primitive, but it is worthwhile to report it.

7.2 Factors impeding efficient use of SNS in higher education in Saudi Arabia

I realised from the analysis of the students’ posts in The Hive that there were some hindrances to making contributions. As a result of comparing the number of participants (165) with the number of their contributions, which were their posts extensively high and the number of valuable posts were low, I assumed there were some hindrances. Nevertheless there were good examples of their engagement and of the affordances of The Hive which are reported earlier in Section 7.1.2.

I explored this issue further in the interviews, where the students and their tutors revealed a lot of difficulty in using The Hive. Also, I found that some students had difficulty with their posts’ quality. After analysing the data, the most frequent themes were classified into four main factors: pedagogical, cultural, tutors’ and students’ perceptions, and technical factors. Figure 7.3 presents each of the factors and sub-factors that impeded the introduction of the social networking site in the course in higher education in Saudi Arabia. In the following section, I will explain these factors in more detail.

Figure 7.3: Factors impeding the innovation of The Hive



7.2.1 Pedagogical factors

The hindrances found which related to pedagogical factors were organised here. I classified them into sub-factors for the purpose of clarification. I will explain each one in the following sections. Many students claimed that they were not comfortable if the **teachers were with them** in The Hive and could read their posts and read the comments on their blog. So, for this reason, their contributions and interactions were limited. Fortunately, they created their own social networking site; that was one of

the reasons they created it. This student, for example, explained her attitude towards this situation by saying:

The teacher is with us, so we cannot be absolutely free. I know some girls feel that there is a restriction if the teacher is there [in The Hive], and this thing bothers me. (Quote 7.29)

Another student emphasised this point by comparing her use of The Hive with using a forum without a teacher in a previous course:

The teachers were not with us in the preparations [foundation course] so we were comfortable and felt free. (Quote 7.30)

All the students reported that they limited their contribution on The Hive because of the tutors. Some students explained their reasons in the interviews; for instance one student believed that students would write and post only the correct and positive information when the tutors were members of the group. While two students thought that if they discussed or objected in front of their tutor it may be considered as disrespecting her. As one of them said:

If we want to object to anything... because here in The Hive the teachers are involved ... that means we discuss in front of her... 'this is good'...'not that'... It feels like disrespect to the teachers. (Quote 7.31)

I found that the students' contributions were limited when the tutors were in The Hive. They believed that it would be impolite to discuss or be critical in front of tutors. I consider this an important hindrance. However, although I found a few excellent discussions on The Hive, I found that the students limited their contributions to positive posts without any criticism. The findings replicated those of Madge et al. (2009) and Crook (2012). Madge et al. (2009) found that 41% of the respondents

agreed or strongly agreed with not liking tutors to contact them for formal educational matters on Facebook. Crook (2012) raised the problem of social embarrassment; he found that some students did not welcome sharing Web 2.0 with their teachers and thus they rarely logged onto these spaces.

In addition, many students reported that the **activities** did not challenge them and did not support the course aims/objectives. Some students thought that the activities were a constraint or a limitation for them. They said they were not sufficiently challenged or encouraged to engage in The Hive. For instance, one student suggested:

If, for example, the activities were about searching or looking for a feature that we did not take in the HTML, this would encourage and excite me to search. For example, if each group of students took a part of the course syllabus and expanded on it and posted what they learned in The Hive. I think this would be more efficient.
(Quote 7.32)

This student suggested that the activities should be linked in depth for some of course subjects and be challenging to the students. On the other hand, many students claimed that the activities were over-loaded on them. They declared that if there were no activities they might interact more in The Hive.

Another issue was that the social networking site was a text-based interaction, and the students had not got the academic writing skills, and some of them did not like writing activities e.g. reflecting and criticising, which impeded their interaction. For instance, one student claimed that they did not interact well in The Hive because the activities were based on writing.

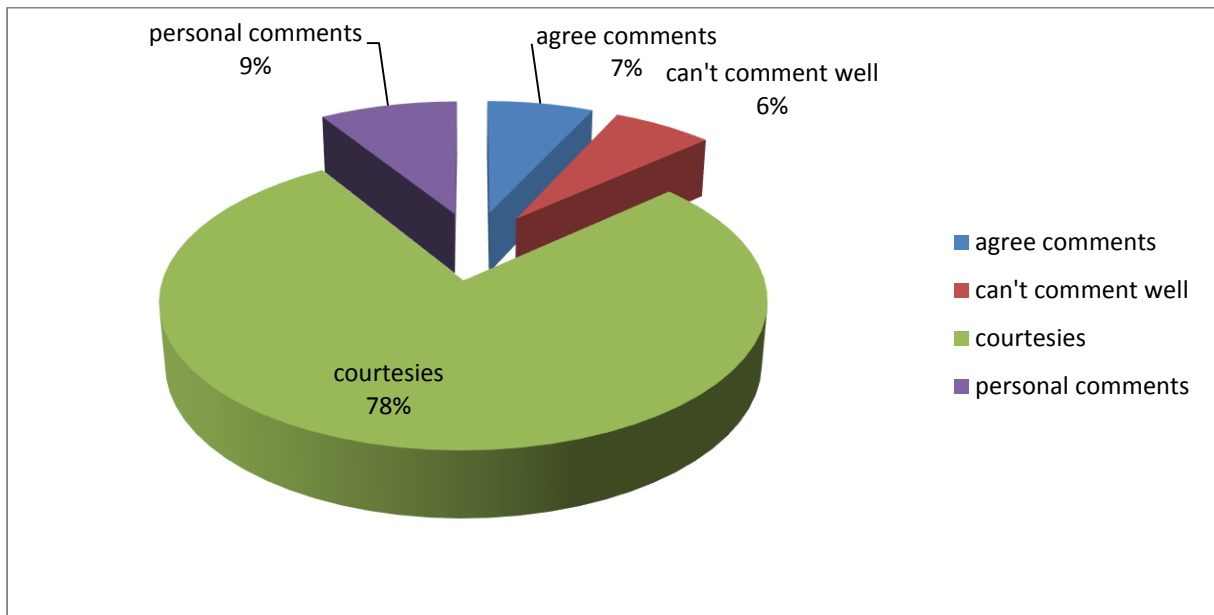
I found that students disagreed about the activities on The Hive; some students thought the activities' contents inappropriate, which did not encourage them, while others thought it restricted their contributions.

In addition, another hindrance was the students' **lack of discussion skills**; one of the problems I faced when using social networking in higher education in King Saud University was that the posted messages fell short in terms of the quality of the content and the number of good discussion threads. The students could not contribute effectively in the educational social network. This was in spite of the fact that the Saudi youth generation had 2.5 million Facebook users (as of August 2010) with a 10% penetration rate, according to Middle East statistics (Internet World Stats, 2001a). They still found it difficult to engage in a good discussion.

Although this study demonstrated how some students engaged in good discussions, as I explored in Section 7.1.2.6, nevertheless many of their posts were not of this kind or level. There were extensive thanks; indeed 78% of their posts added no value but were just courtesies, as Figure 7.4 shows. When the students' posted messages were analysed, it was noticed that they were in The Hive all the time, their posts and comments were regular and intense. However, when their comments were analysed, most of them were not valuable; they did not add any information, reflection or criticism. In addition, many of the students' messages were not challenging and they did not encourage their fellow students to comment; they were 'killing' the discussion. I noticed that, when one student's post was mainly a thanks comment, the others posts followed suit, which stifled any further discussion to this post. Al-Jarf (2006b) reported the same result; she described one of her study's shortcomings as that only 22% of the participants were active. She also reported that

90% of the responses in the discussion threads were “*compliments and not real comments*” (p.8).

Figure 7.4: Types of no added value comments



Many students in this study found they were ‘lurking’, expending a great deal of time reading others’ posts. ‘Lurking’ has been used (Suziki & Calzo, 2004, cited in Pempek et al., 2009) to describe the finding that visitors spend more time browsing and reading others’ posts than writing their own comments.

I found the students’ most frequent type of post was: courtesies. It was found that most discussion threads in their blogs were a sequence of agreement comments or courtesies. For instance, one valuable posted message had twenty-six comments, all of them courtesies. Another example of a student’s post was: “*I came across this really cool website. <http://www.web-geek.com> . Tell me what you think!!*” Despite the fact that the student invited her colleagues to add new ideas, more than seventeen comments were like this: “*Great website: D Thanks ...!*” Some of the students’

comments were not educational comments; they were only expressing their thanks. I will address their thanks comments' effectiveness in depth later in this section.

In addition, some students did not become involved in a good discussion even when the post was open for discussion. For instance, one student wrote a good post about "*Website Design Tips*"; the subject was very interesting, but there were no added value comments. For example, one student commented: "*Wow! Great tips and useful info!*" but this comment did not add new information, explain, expand or criticise; she did not add new value by her comments. I found that the subsequent post comments were similar to this, so I assume this comment had stifled any further discussion.

All the tutors reported in the interviews that they promoted the students in face-to-face lectures, encouraged them to post and interact in The Hive, and dissuaded them from just posting thanks. Also I found that in some cases the tutors in The Hive encouraged the students to contribute in their posts. As an example, one of the tutors uploaded a video and posted:

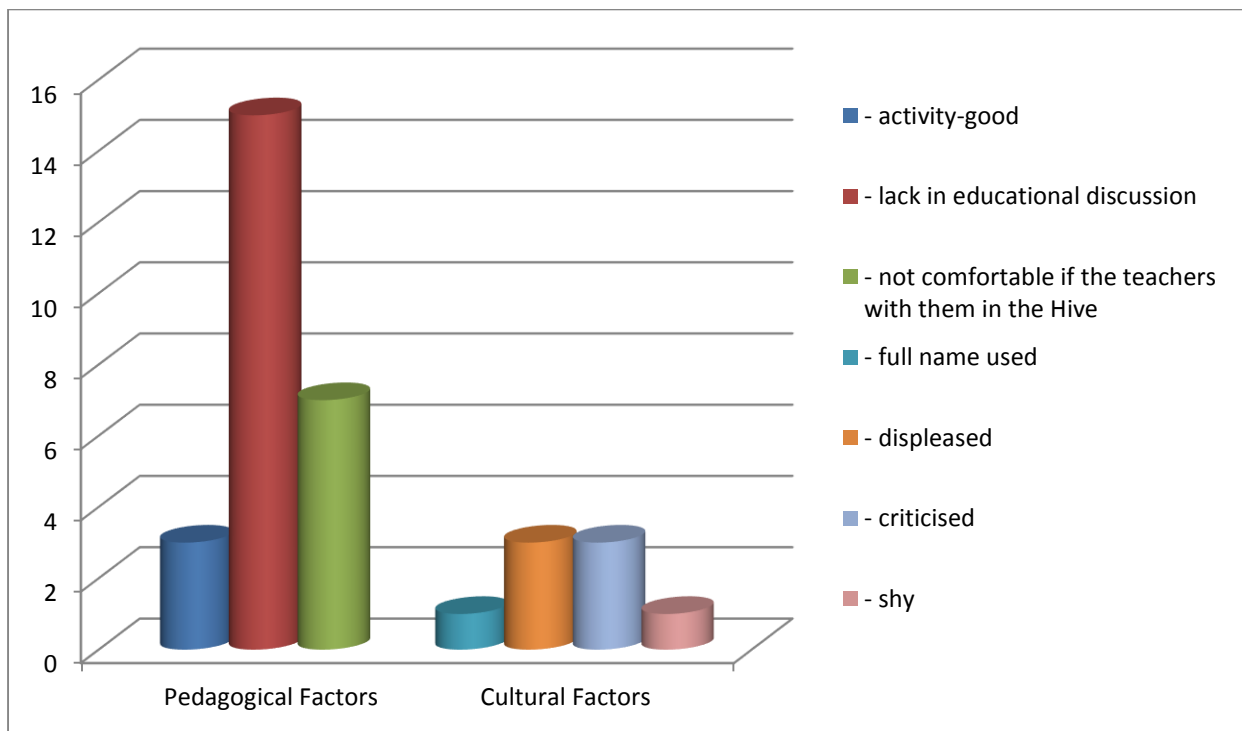
A great video showing how a web developer converts the wireframe into actual website template. Enjoy!

*Did you notice how he/she is designing the wireframe box by box?
And referring to a color palette every now and then? What else caught your attention?*

While in the previous quote the tutor invited the students to add new ideas, more than twelve comments were posted but all of them were thanks. Another example was that I found the tutor posted a message asking the students to reflect on a professional web design lecture and what they had learnt. All comments were like this one: "*It was a nice day*".

I found that the lack of online discussion was the most often reported of the impeding factors. Figure 7.5 illustrates the number of times each impeding factor was reported by the participants. I am aware that culture influences education and vice versa, and it is difficult to separate culture and education, but for clarity I raised this factor as pedagogical. The findings in this study indicate that most students displayed passive behaviours. Teclehaimanot and Hickman (2011) defined 'passive' as viewing or reading posts only. In their study, Teclehaimanot and Hickman found that students perceived passive behaviours as more appropriate than active behaviours.

Figure 7.5: Pedagogical factors impeding the introduction of The Hive



As a consequence of the extensive thanks and no added value comments found on The Hive, I explored this factor more deeply and the reasons for the lack of added value comments. On one hand, the extensive thanks comments may kill the discussion and may prevent other students from contributing or reading the posts. For example, one student reported being upset about these comments:

In the discussion some students were aware of how to discuss but they are few and their comments were good... but others were not aware For example, the tutor uploaded lecture slides; it is her duty but the students did not comment and only posted thanks. (Quote 7.33)

However, not all thanks comments affected the other students negatively. I found that three students admired the thanks comments and that these encouraged them to interact. Also I noticed that thanks comments promoted the students' interaction. It had been indicated in another study that the responses received on the users' post affected users' self-esteem (Valkenburg, Peter, & Schouten, 2006 cited in Pempek et al., 2009). Some students liked this kind of comment, one student declaring that because of the thanks comments she became more active: *"their responses encouraged me to post another post."* (Quote 7.34)

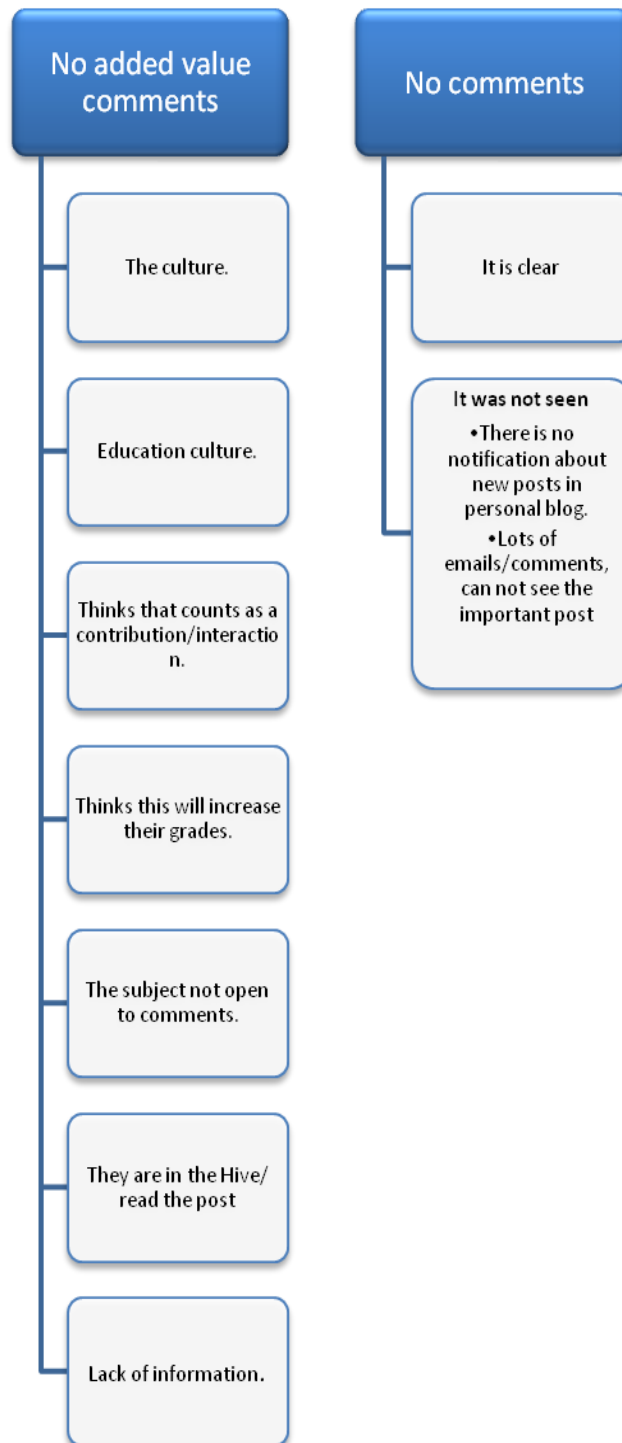
Also, few students realised what the educational comments meant and instead valued thanks comments. For instance, one student received a helpful comment on her post and, as she reported in her interview, gained a new friend through The Hive: *"after this comment ... I knew her face to face."* Another example was this student who had this sensible point of view about discussion:

I appreciate their thanks comments on my post, but I do not want all the students to thank me. I posted the subject about IE to develop their browser, READ the article and say this point means that... discuss with me ...I want to feel that they have actually read the post. (Quote 7.35)

In this case, more investigation took place in the interviews to discover the reasons for these comments. When I asked the students why it did not work well, why they did not comment or why their comments did not add value, even though their

attitude to using this website was very positive, they revealed a lot of hindrances that prevented them from giving added value comments. I summarise these reasons in Figure 7.6.

Figure 7.6: Reasons for lack of educational discussion on The Hive.



I found the reasons for posting thanks comments were:

- Lack of information and knowledge about the subject of the post.
- The subject was not open to comments, for example if the post was clear. There was no need for comments so they posted thanks.
- They used the thanks comments to show that they were in The Hive. In addition, thanks comments were a way of showing that they had read the post.
- Some students thought that thanks comments count as a contribution/interaction. They thought that posting any comment is a contribution.
- They believed that thanks comments gave them credit and that these counted as interactive and would increase their grades.
- According to Saudi educational culture, good students should not say or write anything wrong.
- According to Saudi educational culture, students should be polite and courteous. I will explore this further in Section 7.2.2.

In addition, I noticed that some posts in The Hive had received no comments. Further investigations were carried out to explore this case. Many students reported that some posts were not seen, especially the new posts in the members' blog; there was no notification of the new posts in the blog, unlike in the case of the group posts where there was a notification message. I assume this was one of the reasons. I noticed that a few messages were posted in the students' blog and then a link posted them to the group discussion. I had also found this to be true in the Exeter

University study which I discussed in Chapter 5. I assumed that the students wanted some comments on their posts so they posted them to the group also. One student reported another reason, that there were so many valueless comments that they could not see the important posts and comment on them. This student complained about the extensive thanks comments and how they caused her to miss valuable posts:

I feel that with the large number of emails we received; we could not pay attention to the important posts posted in The Hive. (Quote 7.36)

Accordingly, not all students used the comments sections appropriately; but limited their responses in the blogs and group to express thanks. I noticed that, as a result of the lack of added value comments or of any comments at all, The Hive did not motivate the students to submit more posts and so they did not engage in discussion.

One student complained of the lack of contributions:

...Because there is no interaction between each other. For instance I uploaded two videos, no one commented on them. If there were some comments, they would have encouraged me to contribute further. But there was no interaction. (Quote 7.37)

Another student complained of the lack of postings by saying:

They do not encourage me to contribute to The Hive, as I feel no one reads them. It seems like you post to yourself ... it is possible that they read but they do not comment. (Quote 7.38)

As I described in the previous section, there were some valuable comments and they carried the online discussion, but overall they were rather limited. The students commented only if they had a positive comment and did not criticise any posts by their tutor or post a contradictory comment. In addition, I found that these thanks

comments did not appear much in the collaborative activity's groups where the students knew that the assessment was on their products and not on how much they posted.

To summarise the pedagogical factors I found to be hindrances to use of The Hive: the students' lack of discussion skills; tutors being with the students on The Hive; and inappropriate activities. I had designed the activities together with their tutor to give them a start, to push them to contribute, and with careful consideration not to overload them. Also, we did not limit their contribution on The Hive to the activities only; instead the tutors encouraged them to contribute in face-to-face lectures and to post whatever post related to the course. I had assumed that the activities on The Hive would encourage students to contribute and I did not expect them to be considered a hindrance. In collaborative activity, I found that they contributed well. So I assume that some design factors e.g. tutors being with them on The Hive, hindered their contribution on the activities.

On other hand, I consider that students' lack of discussion skills should given greater emphasis; I will address this issue later, in the discussion chapter. I found that the students posted comments and discussion points if they felt they had a positive contribution to make. The main explanation is that they did not have the necessary skills to participate in academic discussions. Most of their posts were courtesies; this is problematic as it could imply that other students do not contribute to the discussion any more. However, few students' comments and discussions had much added value. Few students realised what the education comments meant and valued them. The added value comments implied positive learning.

In the case of the tutor being within The Hive, I found that the students limited their contribution to posting information from other sources or only when they were confident of their information. They believed that good students should only write correct information and that this was away to respect their tutor.

7.2.2 Cultural factors

When the interviews were analysed I found some hindrances that I classified as cultural factors: shyness about contributing; discomfort with using their full name; fear of criticizing other students; or fear of displeasing if they comment on other students' posts. From my point of view, these could be described as cultural barriers.

I found that most students were **shy** in The Hive. This is the first time they had used a social networking site for a pedagogic purpose. They were too shy to comment in front of others, especially as their posts were read by all students and tutors. For example, one student said:

The difficulty in The Hive was not how to write, the difficulty is in the writing itself. They did not try writing... it is possible that they were ashamed of writing: write about what is inside them or their style is not good, so others will not accept it. (Quote 7.39)

The tutors noticed this, however, and encouraged them to post:

I asked the students in the lab not to post thanks comments only; I feel that our society is a courtly society, and the students' shyness is building a barrier. (Quote 7.40)

In one of the interviews I discovered that they had been discussing on campus what was posted on The Hive rather than discussing it on The Hive, as this quote illustrates:

Interviewer: You see this video you uploaded, it is a good and beneficial video, but you had no comments on it, although you have a large number of friends (22 friends).

Interviewee: Maybe I uploaded it in the beginning of the course or I did not announce it. I expect they will see it but no one will comment on it. I even asked my friends on campus to see it.

Interviewer: Did you receive any comments from them on the campus?

Interviewee: Yes, they commented. They asked me about the websites, it is a computer science website, and they visited this site. (Quote 7.41)

From the above we can notice that the students interact on campus about the issues raised in The Hive. I found in the interviews that this was the case with many students. I assume that they were too shy to use The Hive to interact with their peers. Similarly, Al-Jarf (2005b) found a lack of interaction in her study because the students were shy, apprehensive and hesitant to register or interact.

Also I found that some students did not interact because they were afraid of **displeasing** other students when commenting on their blogs. Some students reported that they only commented on their friends' posts. For example this student explained her opinion:

I do not know if there is something that prevents me from commenting. It could be that I do not know that girl and maybe she says 'why are you commenting on that', or 'I do not want you to comment', for example. It could be she is sensitive to any comment or she dislikes my comments. I prefer to keep my opinion to myself. (Quote 7.42)

Similarly, this student explained that she could not comment on other students if they were not her friends. She said "*I cannot comment on other students' posts, I do not*

know her, maybe I'll be criticized." Other students were afraid of displeasing even if they were their friends, as one student said:

I read the posted messages but I did not comment on them. If I commented on one and did not comment on the others they would be displeased and would say: 'Why you did not comment on my post?' and it was difficult to comment on each post I read.
(Quote 7.43)

This student limited her contribution and comments because she was afraid of displeasing her friends if she missed commenting on a post. Crook (2012) point out that the critical voice of other users was not welcome, while some students' believed that they would not receive any constructive comments on their posts.

In addition, one of the cultural factors was misunderstanding the meaning of criticism. I found the majority of the students did not understand the meaning of criticism and how to criticize. Many students thought that 'criticize' meant saying negative things and that someone would take it personally. This idea was emphasised by one student when she declared her understanding by saying:

However, if you are asked about your opinion, you consider it as a subject and you should write pros not cons...I do not know even in the dialogue outside The Hive, pros are always remembered.
(Quote 7.44)

Showing a similar lack of understanding of the term 'criticism', one student explained:

It could be that because in our society we have not learned/dealt with situations/environments of the same nature as The Hive. E.g. I post something, it is read and criticized; this very rarely occurs even in educational situations.if it is the case in an educational site and official one, [you find] only thanks, no criticism. (Quote 7.45)

Concurring with this finding, Crook (2012) found that some students were anxious in Web 2.0 applications in education in case they were exposed as stupid, or in case they were judged based on the content of their posts. In addition, the researcher claimed that most students' posts were not critical and that they did not follow rigorous methods to check the validity of sources; it was also common to copy and paste information straight from the Internet (Hughes, 2009).

The students used their **full names** in The Hive. As a result I found some students thought that using their name in The Hive put pressure on them and limited their contribution. For example, this student explained her point of view:

Interviewee: We have to write our name and this is putting pressure on us.

Interviewer: Can you explain how it is a pressure when writing in your name?

Interviewee: That means I should be careful because the tutors will see it and I do not know who else might see it...

Interviewer: You mean that you are afraid of making mistakes, for example?

Interviewee: Almost, yes, I am afraid of writing something and then being questioned about it: why did you write this? And why did you say this? (Quote 7.46)

In the interview I discovered this fact disturbed some students and limited their posts. In contrast, I found some students were not affected; they believed that using their real names was an advantage in this social networking site. For example, one of the students said:

I could know the students and, some of them, I know their name only so I go further and go to their blogs and read their posts and read about them. (Quote 7.47)

Similarly, Al-Jarf (2006a, 2005b) found that the students' inclination was to conceal their real names when they interacted online. She was faced in her study (2006a) with the participants wanting to conceal their identity and use 'anonymous' instead of their real name; as a result, the number of students who enrolled on the online course was limited. Al-Jarf (2005b), in her other study, found the students used nicknames as they were afraid of writing in public.

Finally I found some students limited their interaction and contribution on The Hive because of certain cultural factors. They were shy and afraid of displeasing others or criticizing them and were uncomfortable with using their full names. Al-Jarf (2005b) reported the same finding that she described as 'cultural barriers':

They [participants] were passive rather than active learners. They read and checked the websites and posts only...and were afraid of making mistakes in public. They were afraid there might be critiques or negative comments. (p.8)

7.2.3 Tutors' and students' perception

In the interviews, some students claimed that the aims of The Hive were not clear to them; also how to use in the course was not clear to them. As a result they did not interact properly. For instance, one student commented when I asked her about the reasons for the lack of interaction: *"They [the students] did not understand how to use The Hive appropriately."* (Quote 7.48)

Some students claimed that they missed a lot of benefits when they did not understand the aims of The Hive. As this student suggested, the aims of the Hive should be introduced as a being a social educational environment:

Everyone knows how to use social environments, but the purpose of it? You should tell us, for example, 'you will benefit from each

other...discuss about the project ... discuss about the lecture...through your discussion you will reach the final solution or an idea. (Quote 7.49)

All the students agreed that if they used the social networking site again they would do more discussion than they did on this course. For instance, one student said: *“The familiarity of the tool, it is new and if we use it in another course we will benefit more from it”* (Quote 7.50). Similarly, Stacey (2002) found that students were motivated to continue using online learning.

Some students suggested that if there was a training session before using The Hive in a course that would be more efficient:

I feel that if there was training on The Hive before the course it would have been better, to know the functionality of it and the possibilities for this function. If we had an hour's training it would have been good. (Quote 7.51)

Despite the fact that the aims of The Hive and of the research were explained to the students clearly at the beginning of the term, they were new to using this technology in education. Most students were excited and their attitude towards using The Hive was very positive, as I noticed from their posts and answers in the interviews. Nevertheless, one student did not believe in it and suggested using Twitter, which, in her opinion, was more efficient in education. I also noticed that all of them had an account on a public social networking site. I assume the significant issue here is that the students were **new in using the Hive** for educational purposes. I will return to this issue later in the next chapter with further discussion.

The tutors' perception was one of the impeding factors in this innovation. Two tutors did not believe in the social networking site or see any advantage of using it in

pedagogy over other technologies e.g. emails. One of them said: *“I think it is a useless system”*. She carried on: *“The objective of a site or anything to serve the educational process is acting as a one-way communication”* (Quote 7.52). The tutor in the previous quote believed that the technologies used in pedagogy should only connect the tutor with the students in a one way channel. However, other tutors were happy to use The Hive with their students and admired the advantages of using it.

I assume that these tutors' experience of using other technology with their students, e.g. learning management systems, forums and blogs, affected their perception of The Hive. The long use of LMS/background and experience impeded their interaction in The Hive.

7.2.4 Technical factors

The most significant technical factors that were hindrances were found to be the problems of browser-connection speed and deficiencies in The Hive page itself, as most students and tutors reported in the interviews. Many students complained about the speed of exploring the pages and the speed of the browser. The **browser-connection speed** was a problem when browsing the website: there was a delay in opening the site. Some students complained that the connection was very slow, so they did not contribute well. This finding is similar to that of a study of the most common barriers against faculty members using Internet technologies in teaching, where one of these barriers was found to be the Internet connectivity (Al-Wehaibi, Al-Wabil, Alshawi, & Alshankity, 2008). Many students reported the slow speed in browsing in The Hive made it difficult to benefit from it. For instance, one interviewee said: *“The problem was the slow speed of the communication, so I did not want to open The Hive.”*(Quote 7.53)

In addition, a few students criticized the layout of The Hive website. They reported that they found The Hive very difficult for sending and receiving information; the interface and organisation of The Hive were not good. For example, one student said:

I am used to interacting in social networking website environments, but The Hive is not appropriate as a social environment, nor as a website. It was not a flexible site; many things in it I feel do not fulfill our need, but I benefited from the interaction between the students and our tutors. I think that it was better than if it were a normal blog, The Hive was better, but there were more options than The Hive. (Quote 7.54)

On the other hand, many students reported the notification technique in The Hive (sending an email to the members when a new post was made in her group) was a very helpful technique. In contrast, in the members' blog, there was no notification if anyone left a comment on your blog or wall, so they could not follow the new posts from their group members' blogs. There was a 'recent posts' section available to all members of The Hive. As a result, I found that some students in Exeter and Riyadh alike re-posted their posts in the group space after they posted them in their blog.

The same complaint was found in the study by Sait et al. (2007). In their study, Saudi users reported many problems when using the Internet; one of the 'big problems' was the slow speed of browsing (45.3%). Similarly, the study of Al-Shawi and Al-Wabil (2007), conducted with faculty members of Saudi higher education institutions, showed that slow or dropped connections were reasons preventing them from using the Internet. This problem with the Internet in Saudi Arabia was also reported in a previous study (Sait et al., 2003).

7.2.5 Other factors

Some students reported pedagogical problems that impeded their contribution and interaction in The Hive. These problems were limited to individual cases, but I will explore them to cover all the impeding factors. After that I will discuss the significant factors from my point of view and justify my argument. A few students claimed that the pressure of the term, shortage of time and the grading of their contribution were impeding them from interacting in The Hive.

The students were **overloaded** with courses in this term, while they had many courses in their own specialism as well. All students and their tutors agreed on this point. Some students claimed that this was the reason for their lack of contributions. This raises the question of how they found time for extensive thanks posts and messages in The Hive. Also, one student posted a new blog at the end of term; she wanted to share new information she had found with her colleagues. I agree that they were overloaded during this term, but it was not a good reason for their lack of added value contributions.

Furthermore, a few students said that **grading** their blogs and contribution in The Hive put them under pressure in their interaction in The Hive. As I mentioned in Section 7.2.1, the grading scheme affected their contribution. In contrast, I found that grading motivated some students to interact more. In Crook's (2012) study, he found there were pressures on students about assessment of their published works on Web 2.0. In contrast, Williams and Jacobs (2004 cited in Redecker, 2009) found one reason the students did not contribute to blogs was because they thought the additional marks were not worth the effort.

All students complained that there was **no time** in this term and they did not have enough time to contribute to the posted messages in The Hive. Almost all students explained that their lack of interaction was because of shortage of time. I also noticed that the students were in The Hive most of time, read all posts and comments, checked the group every day, and wrote extensive thanks comments. So, from my point of view, I consider these insignificant reasons.

Nevertheless, in this study I found a lot of hindrances to the introduction of the social networking site in the course in higher education. Some of these factors resulted from the students' education and culture, which are hard to separate. The most important pedagogical issue was the lack of discussion, considering the number of participants. I assume that the students' education and culture influenced their contribution. Moreover, students' and tutors' perceptions were another factor, with students using The Hive for the first time in education and some tutors not believing in its benefit for learning. Other technical and pedagogical issues were raised by some students, which I explored in order to be honest and to clarify my assumptions about them.

Finally, these factors found to hinder the introduction of a social networking site in a course in higher education, together with how to reduce these issues, will be discussed in more detail in the next chapter. Nevertheless there are pedagogical affordances to be found in this social networking site as mentioned in Section 7.1.

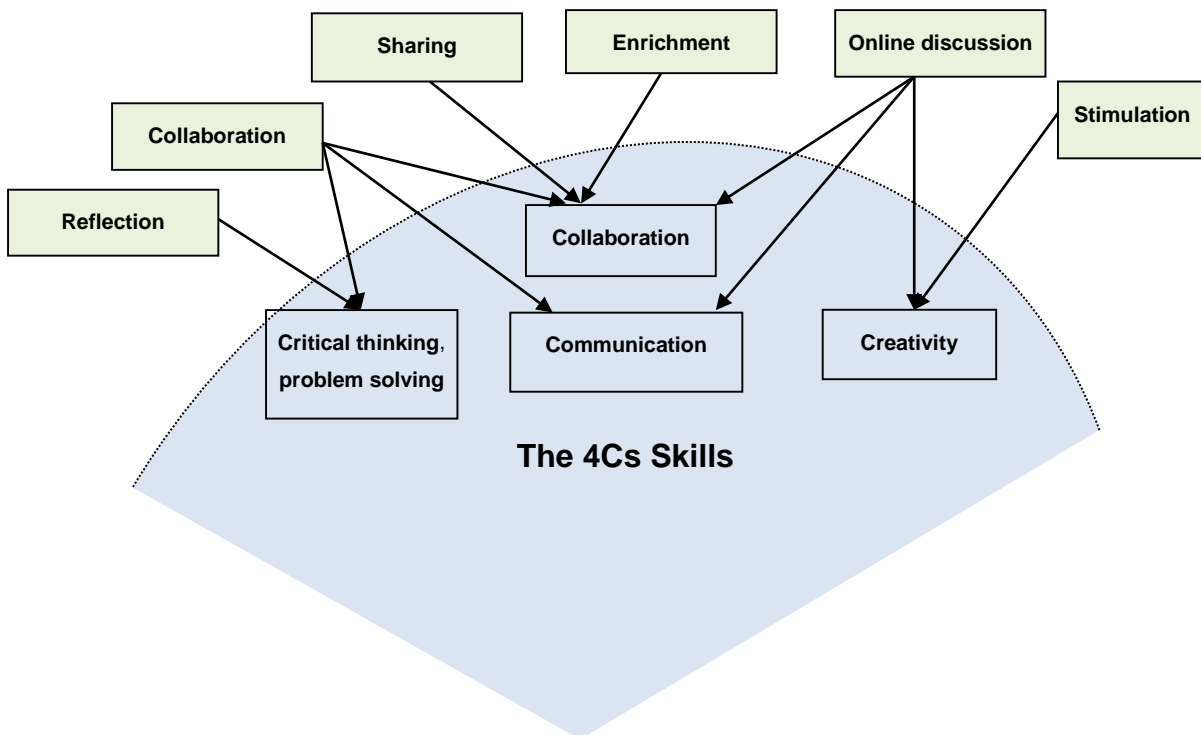
7.3 The added value of social networking sites for learning and teaching in higher education

This is a very important issue about which the data provided a lot of information. In the study I found evidence of pedagogical affordances offered by The Hive. In this

section I will explore the values that these affordances added to the course. It is important to notice that the values illustrated in this section derived from the both studies: the exploratory study at Exeter University and Phase two at King Saud University.

In previous sections I explored the pedagogical affordances of The Hive: reflecting, stimulating, enriching course materials, collaborating, and online discussion; these affordances support students' learning and help them achieve **new skills for the new knowledge age**. I explored new knowledge age skills in Chapter 3. The Partnership (2011) for 21st Century Skills advocated the 4Cs: Critical thinking and problem solving, Communication, Collaboration, and Creativity to support students' learning and innovation. In this study I found that the pedagogical affordances of The Hive developed these skills, there by supporting the 4Cs. Figure 7.7 illustrates how the affordances found in this study support the 21st century students' skills. To elaborate, students' questions about their work and other group members' work help them to be critical. Asking significant questions and challenging each other help the acquisition of problem-solving skills and critical thinking. Online discussions and collaborative activities could develop interpersonal and collaborative skills, self-direction, accountability, adaptability and social responsibility (Trilling and Fadel 2009). So it is likely that some of these skills for the new knowledge age were developed with the students' interaction on The Hive.

Figure 7.7: The affordances of social networking support 21st century knowledge skills



However, one of the values of this social networking site is that the students' discussion is **text based** on The Hive. The text based discussion potentially encourages a high level of thinking from the students.

In addition, since many of the current asynchronous online discussion forums are solely text based, students have to explicitly express their thoughts in writing. The very process of writing in itself encourages reflection, which helps to prompt higher level learning such as analysis, synthesis, evaluation, as well as clear and precise thinking. (Hew and Cheung, 2008, p.1112)

The text based discussion in the social networking site will affect students' learning while prompting high level thinking. Some students reported the advantage of text

based discussion in The Hive. For example, one student commented on her friend's learning by posting in The Hive in reference to their recent discussion on the campus:

Even my friends, when I tell them new information: 'We are busy!' [They do not bother to read or learn] but when I posted it in The Hive and I convinced them, I knew they would read it and try to do it... especially I usually convince them not to use IE because But after they tried this site [the post subject]..... At the beginning of the semester they used it but now nobody uses it. I feel there is a development; I convinced them and they got the information correctly. (Quote 7.55)

In addition, the students learned writing skills from reading and posting on The Hive, in a similar way to the findings of another study (Buffington, 2008). The findings of Al-Khalifa's study (2008b), also, showed improvement in students' writing and research skills. Even students who disliked writing learned some writing skills, as one student claimed that she "*hated writing*" but with the activities in The Hive she "*started writing and enjoyed it*".

All students reported that The Hive added most value in their communication and improvement in group work quality. They acknowledged The Hive as an environment in which to **collaborate and discuss**. All the students noticed the value of The Hive in group work; they reflected that The Hive facilitates the students' interaction from when they started to organise their group members until submission of their report/work. In addition, most students realised the value of The Hive as affording cooperative learning, even where the work was individual:

We used to have the projects as team work, but in this course our projects are individual projects. We were wondering. However The Hive came and we are connected as groups once again. And

*we started to discuss a particular topic and say our opinion.
(Quote 7.56)*

They also believed that it improved the quality of their collaborative work:

It [The Hive] was a useful and a beneficial tool. It also made us realize how the use of the social networking site can enhance the work's quality and how helpful it would be if it is used in future projects.

Similarly one interviewee of the University of Exeter reflected on her group work by saying:

I like it [The Hive] because... put your ideas together -other people can upload their work -we can look through it. The Hive enables us to work collaboratively.

Furthermore, all the students admired the social networking site environment, especially because of Saudi social values (see Chapter 2). Some Saudi families do not permit friends visiting so the students should meet on campus to work with their group only. Accordingly, The Hive gives these students the opportunity to interact outside the campus, as one student in Riyadh said:

On the contrary, I feel that The Hive is useful for us, because many girls in the university are not allowed to go out [to their friends]. In the last term, I had a project with girls and their mothers did not allow them to go out, which is the case for many girls in Saudi society. This was impeded. I could not communicate with them and I did not know how to do our group work. But with The Hive we can work as a group. (Quote 7.57)

This keeping in contact with course work on The Hive reveals flexibility for higher education students, not only for Saudi students but also for Exeter students. The students see the benefit of The Hive in enabling them to work online and stay in

touch with each other, especially when they are not on campus. For instance, this student from Exeter University said:

I think that it is brilliant. Last year in our first year we did a lot of [collaborative] work and if one of the group members went home at the weekend all the rest had to wait until s/he came back, but with this it doesn't have to be like that.

Another student from Exeter University raised a good point about group work in The Hive: even though she hated the technology she said:

Interviewer: Ok, when you compare your group work with The Hive and without it, what you can say?

Interviewee: I am surprising myself, I will say with The Hive. For this reason: the students can go home at the weekend, and The Hive keeps them in touch. The first year without The Hive I was the one who did not go back... 'Oh, can you do that'... and I want the project done... so I did that. So I did more than other people did just in fact I am there.

In addition, the majority of the students thought that The Hive, as a social networking site, **grouped the course** on one website. The students could discuss, find course materials and references, colleagues and tutors in one space, in this social networking site. The students acknowledged that using The Hive gathered the course together in one website. It brought together all the course documents, resources, discussions, and announcements in one place, as well as the students having their own blogs. This helped the students to concentrate on the course. Most students acknowledged that The Hive facilitated their contact with their tutors in the easiest way, which concurred with Crook's (2012) findings. For example, one student

reflected on this course using The Hive: *“This is the only course where I knew everything that related to it”* (Quote 7.58).

Another student reflected:

I feel that The Hive gathers us with our tutors, other students and the course content. It is possible to upload power point slides, articles [posts], possible to benefit from them. Such as videos, files, anything useful for this course. (Quote 7.59)

Similarly one student emphasised that:

Actually the web course is the only course I know everything about it. I can get help from others and help other students. If there is anything new I receive a notification message on email. It [The Hive] helped me. (Quote 7.60)

Also the students were aware of these values of the social networking site and wished to use this technology on other courses; for instance one student said:

I think that if The Hive is generalized to all subjects it will be better. I feel confident that I knew everything new that related to the course. (Quote 7.61)

Even in the matter of **asking and answering**, the students appreciated this great advantage of The Hive. The students found their answers without asking where other students had posted the same questions. In addition, some issues and comments they may have forgotten about were found in their colleagues' questions. One student reported on the value of that by saying:

... from other students ... in other courses the students sent their questions by emails. We did not benefit from their questions nor

the subject, but in this course the questions and answers became in my hand ... I can Know. (Quote 7.62)

Another student acknowledged that the space given to them in The Hive expanded their view:

The questions of Dr. ...opened up space to questions and interacting. Also the communication between Dr. and us was opened. (Quote 7.63)

I introduced the affordances of **e-debate** in Section 7.1.2.7 and explained its meaning. In this section I will explore the value of using The Hive as a space for debating. Some students acknowledged the e-debate afforded by The Hive and believed it had more value than a face-to-face debate. I found that the e-debate in The Hive had the advantage that the students could support their arguments with documents and evidence from the literature or they could link it to references. In addition, the students had equal opportunities to contribute, while this was not the case in the face-to-face classroom debate. This finding is in line with Beetham and Sharpe's (2007) argument about online discussion: "*the contribution becomes equal and turn-taking is eliminated; everyone can talk at once*" (p. 37).

These advantages of formal debates were also admired in Phase One of this study, as I mentioned previously, in Chapter 5. One student interviewee in Exeter acknowledged the value of the online debate by saying:

The Hive makes it [debate] easier than waiting your turn to speak. In modules that do not use The Hive you raise your hand and wait - sometimes you do not [get a chance]..., but in The Hive any time... whenever.

Furthermore, the social networking sites affected students' learning by **saving** their time and effort in searching for information. All students in both phases realised that, when they shared in The Hive, it saved them time from searching the library or the internet. That was acknowledged by the Exeter as well as Riyadh students. Students in Exeter acknowledged that The Hive saved them from going to the library for lengthy searches, while it took less time to read the same information directly on The Hive. Also, students in Saud University acknowledged that The Hive saved time and effort to search the internet and verify Java scripts. Moreover, all students acknowledged that the posts **summarised the resources**, e.g. books, articles and websites, related to the course. This great value was appreciated even by students who disliked technology, as one student in Exeter University said:

I like books; I am really, really old fashioned... I prefer to spend hours and hours in the library, but I have to be realistic; I have not got this time. The Hive's practical resource makes things available immediately. I can spend two hours in the Hive [reading], but it takes me all the day to do it in the library. In practical terms I think The Hive is great. But I prefer to have book based resources.

Two **tutors** reported the value of The Hive in giving them the opportunity to know their students well and monitor their learning. In addition, it saved them time and effort. The tutors acknowledged its usefulness for the tutor to answer students' questions, which limited redundant questions. For instance, one tutor said in the interview: *"I sent [a post in The Hive] once for all instead of each student coming to my office or sending an email to ask the same question"* (Quote 7.64).

I will finish this section with one student's reflections on the value of The Hive:

[The Hive] is a way to connect us with Dr. this is the easiest [medium] to send to her. The second - I appreciate the benefit

from the experiences of students and their questions; the questions are always repeated, instead of each student sending an email to tutors more than once they can read other posted questions, and it is possible to discuss more easily and save time instead of meeting somewhere, for example, in the house, outside campus or elsewhere, we can meet in The Hive as a group. I am thinking of setting up a group for other courses here [in The Hive] to share here, because we used to collect the students' questions and send them via email and we thought here will be faster and better. (Quote 7.65)

From the previous sections it can be confirmed that the social networking site can add value to students in higher education in many respects. It is noticeable that some of these advantages are not limited to this social networking site, but the significance of the social networking site is that it has all these advantages. These values can be noticed explicitly or implicitly. The most important values are those that enhance students' skills for the new knowledge age. It also has the value of economy: in saving time, summarizing other learning and reading, self-directed learning and peer support. In addition, the social networking site can add value implicitly to students' learning, e.g. where to search, useful websites in their specialist and learning style. For example, one student claimed that she hated writing but, with the activities in The Hive, she started writing and enjoyed it. It is a positive outcome that the students set up their own new social networking site and they asked to use The Hive for all their courses.

Summary:

This chapter has sought to evaluate the design of a course involving the innovation of a social networking site in a course in higher education in Saudi Arabia. I found some evidence of pedagogical affordances of the social networking site. The

innovation of this course was limited by some hindrances that were discussed in detail above.

In this chapter I tried to answer the research questions through the findings of the study. The first questions were answered from the theme which emerged from the students' interaction via The Hive and from the interviews. The affordances of the social networking site emerged from both students and tutors. Most students used The Hive to discuss, share ideas, access resources and upload files. In addition, students used The Hive for managing group work, collaborating, asking questions and answering each other, and benefiting from reading others' posts. It is demonstrated that the students neither commented nor commented well; however, the social networking site helped them construct their learning by reading and benefiting from others' posts. The students realized the benefits of using the social networking site in learning, especially in group work. The pedagogical affordances of the social networking site could be conceptualised as: reflection, stimulation, enrichment, sharing, collaborative learning and online discussion.

The data also show that few students reflected or offered a critique in their posts. Likewise, there was a lack of reflection or critique in the students' comments, demonstrating a lack of skills for the new knowledge age. They were more interactive in the discussion space in asking and answering questions than in their blog. Moreover, the findings highlighted some important hindrances to using the social networking site in a course in higher education in Saudi Arabia and I have explored these in detail in this chapter.

I found that the innovation of the social networking site supported the students' learning. It supported them with new knowledge skills, self learning and social

learning, encouraging dialogue and criticism, all of which are in line with the new policies of the Ministry of Higher Education in Saudi Arabia.

The findings of this research provide much valuable information which feeds into answering the research questions and its sub-questions which I described at the beginning of this chapter. I will deal with them in more detail in the discussion chapter, where I will also draw on the literature and the Saudi context, and bring together the whole of the thesis.

In addition, the findings in this study reveal valuable information that will help to construct a theoretical framework to design a course in higher education. I will explore and explain this theoretical framework in the next chapter.

Chapter 8 : Discussion

This chapter offers a discussion of how the social networking site could contribute to pedagogy in higher education in Saudi Arabia, based on the findings of this study. In this study I conceptualise the affordances of the social networking site in higher education based on the interactions and perceptions of the participants. Integrating Design Based Research with a case study methodology, I have sought to evaluate and revise a framework for an embedded social network site in a university course. I developed an improved course design framework and also proposed suggestions to eliminate the hindrances revealed in this study. This chapter will be organised into three areas: the affordances of the social networking site, how these affordances could support student learning in higher education in Saudi Arabia, and suggestions for applying social networking sites in Saudi Arabia. These issues correspond to the research questions. I will answer them through compiling insights from the literature, the context of Saudi Arabia, and the study findings as a whole. Finally, I will address the challenges of the use of SNSs and propose a framework for the pedagogical affordances of ICT in general.

8.1 The affordances of the social networking site

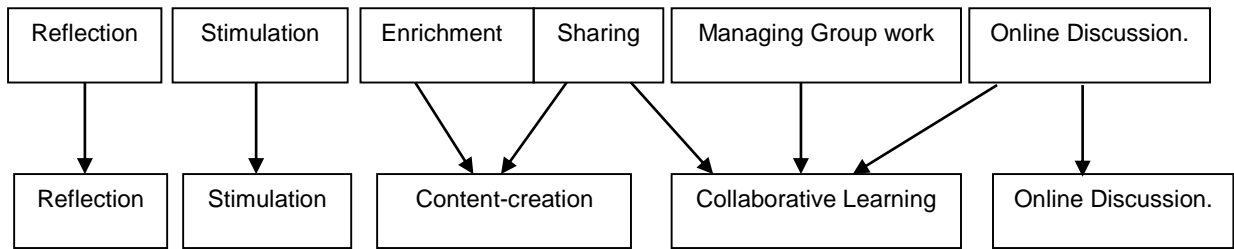
The main affordances captured from the participants in this study were: reflection, stimulation, sharing, enrichment of the course, managing group work and online discussion. I find that certain affordances that emerged in this study are consistent with the predicted affordances found in prior research, especially in Web 2.0 research as mentioned in Chapter 3. I may, therefore, infer that drawing on existing Web 2.0 research and the findings of this study, these pedagogical affordances

(reflection, stimulation, sharing, enrichment, managing group work and online discussion) can be conceptualised.

These pedagogical affordances of the social networking site were derived from the two phases in this study. Despite the cultural differences between the UK and Saudi Arabian contexts, the pedagogical affordances of the social networking are emphasised in the two contexts. I used these emerging affordances to conceptualise the pedagogical affordances of the social networking site under five main themes: reflection, stimulation, content-creation, collaborative learning and online discussion. I combined two affordances emerging from the study of The Hive, enrichment and sharing, into one theme entitled 'content-creation'. This combination results from my belief that they were related to each other and each one supports the other; the 'sharing' theme leads to enrichment of course materials. In addition, where one of them emerged, the other was also found. I title these affordances 'content-creation' as students can be producers as well as consumers in SNSs; I will discuss this issue further in the following section. When I reported the findings of the affordances of The Hive in an earlier section, Chapter 7, I separated them for clarification purposes.

Collaborative learning was afforded in The Hive by managing group work, sharing, and online discussions, so I added 'collaborative learning' instead of 'managing group work' and kept the 'online discussion'. I am aware of the differences of the two terms, I identified their discussion as 'collaborative learning' if the students had the same goal 'group goal', task to do, and each member had her responsibility 'individual accountability' and 'group accountability' (Slavin, 1988). In contrast, online discussion helped the students to interact and think together without any task to do. I will clarify these in more depth in the next sections. Figure 8.1 shows the conceptualised affordances. The next section will explore each affordance.

Figure 8.1: The pedagogical affordances of social networking sites.



8.1.1 Reflection

The pedagogical affordance of ‘reflection’ was found in the students’ interaction in this study. One of the skills needed for the students in the new knowledge age is reflection which helps students to be critical and to think together. Reflection could be defined as:

The ability to evaluate and critique one’s ideas, to attend to peers’ input, to consider the merits of different outputs, respond to feedback, collate evidence of performance, and set new goals (Sharpe, Beetham et al. 2010, p.220).

The reflection affordance was reported in both phases. While the students’ reflection was limited in KSU, by the end of the course the students were more attuned to reflecting. This contrasts with the Exeter study where quite a few incidences of reflection appeared. From the analysis of the KSU students’ posts, I found that their reflection was neither in-depth nor critical, indicating a problem in the students’ reflection skills. One potential reason for this is that the students had not been trained to use critical reflection in their academic studies, which would be consistent with their educational history as mentioned in Chapter 2. Comparing Phase Two (Saudi Arabia) with Phase One (Exeter), in the latter situation tutors encouraged their students to reflect by proposing a question for discussion and asking the

students to reflect on it or to reflect during the lecture, which was not the case in the KSU study. The nature of the course subject could be another reason for the lack of reflection, as the subject was a more practical one (Web Design) in the KSU study.

The social networking site afforded a space for students to reflect on their learning, on others' posts and on the lectures. Nevertheless some students did not have this skill. The course designer could improve students' reflection by designing activities that support reflection and by giving instructions and guide lines on how to reflect; this may require some training for the tutors.

8.1.2 Stimulation

On the social networking site, I found (as presented in section 7.1.2.2) that students were stimulated by other blogs and posts even if they did not contribute any of their own or interact with each other. The students stimulated each other to search or to work. The social networking site stimulated silent students, as these reported in their interviews; while their colleagues interacted they were stimulated by reading the posts and the online discussion. On the basis of what some participants said about their experiences of using The Hive and posts, the stimulation was explicit in their learning while at other times it was implicit. For example, they got stimulated by searching specific websites or in their writing style. These pedagogical affordances were perceived positively in both phases of the study.

8.1.3 Content-creation

One of the important affordances of the social networking site is content creation, as demonstrated previously in reporting the finding that students and tutors contributed by uploading new materials related to the course. Some of these posts explained issues, while others expanded in more detail or presented new issues. In the KSU

study, I found many posts explaining course content, varying from video or photo to text. As a result, I used the terms 'enrichment' and 'sharing' rather than 'content-creation'. I argue that SNSs can afford students to participate and create course content with the help of their tutor to guide them and keep their participation up to standard. However, in this study I cannot argue that the students created content or shared any authorship.

In addition, in KSU as I reported earlier, all posts were copied from other sites or articles. There was no critical thinking in their posts as the students copied the resources without any criticism or use of their own words. When reviewing their educational culture, I found some explanations for this lack of criticism. One of them is the students' previous education; the type of exams and the courses they were taught, because the students could not build their own content or use their own words. The students were not given a space to contribute to their own learning. This issue should be questioned; the teachers' role should be changing in higher education. The teachers should encourage their students to contribute positively to the course. I will explore how to improve this skill later.

8.1.4 Collaborative learning

The social networking site affords collaborative learning, which one of the important skills in this age. The collaboration could be on the level of all the group's members. The mobility of the collaboration process is evidenced in the data from this study where the students could keep working together even on holiday or off campus.

Different approaches to co-operative and collaborative learning have been proposed by different educators and researchers. There is an overlap between collaborative and cooperative learning; some use them as the same term but others distinguish

between them. Panitz (1996) presents a definition of the terms 'collaborative' and 'cooperative' as:

Collaboration is a philosophy of interaction and personal lifestyle where individuals are responsible for their actions, including learning, and respect the abilities and contributions of their peers. Cooperation is a structure of interaction designed to facilitate the accomplishment of a specific end product or goal through people working together in groups. (p. 1-2)

I disagree with the above definition; from my perspective, cooperation and collaboration are alike in having a group goal but, in cooperation, individual accountability is emphasised more than group accountability. In cooperation, the task is divided between the group members based on their skills and preferences, where each one does the sub-task individually; then they bring their work together to accomplish the overall task. On the other hand, in collaborative learning they work with each other in their group to do the task; in this method, individual and group accountability are equally important.

I found that student collaboration was one of the affordances of the social networking site. Interestingly, based on the findings of the study, I found a different approach to collaborative learning in this social networking site. The students collaborated with each other in a way I call '**individual-cooperative**' in which each one had her own task, to 'develop a personal website project', with the same goal (as with cooperative learning) but they did not assemble it together; they interacted and discussed on the social networking site to do the task. The interesting aspect of this approach is the individual accountability, where they carry out individual activities but they discuss to reach their goal and accomplish the task. Concurring with this argument, Benfield and De Laat (Sharpe et al. 2010) distinguish two kinds of

collaboration: 'on task' and 'around the task', where in this study the students cooperate around the task. As they help each other and learn from their peers through their discussion.

I argue that this is collaborative learning rather than online discussion, though I am conscious of the overlap between the two concepts. I think that where discussion is a method of collaborative learning, there should be a goal for the discussion; if there is a task to be accomplished, I define it as collaborative learning.

Moreover, based on what some participants said about their experiences with collaborative learning on the social networking site, the quality of the collaborative work was improved and made easier by using the social networking site. From observations of students' interaction on The Hive, it was apparent that all students had utilised the social networking site in their group work. This trend was noticed by Barden (2012) who found that the students in his study tended to use a combination of face-to-face work and ICT tools to finish their group work if they had the chance.

The social networking site has many tools that facilitate students' collaboration, e.g. personal blogs, group discussion, video, files, and photos. Furthermore, the social network site gives the students the flexibility to manipulate their group. The students can create their own collaborative groups with their own criteria. They can manage and organise their group work. Also they can use the social networking site to upload videos or files, share articles to help them to understand, facilitate, and accomplish their work. The social networking site supports students' collaborative learning. In the same line, McLoughlin and Lee (2007) suggested that data sharing is enabled through personal and group blogs which facilitate 'collaborative information discovery and sharing'.

8.1.5 Online discussion

The findings of the study (see Table 7.3) show that the social network site's environment facilitates online discussion with all types of talk. As I explained earlier, I utilised Mercer's (1994, cited in Mercer & Littleton, 2007) three talk topology of online discussion based on Disputational Talk, Cumulative Talk and Exploratory Talk. There is evidence in the data that the site is flexible to open new threads for discussion and there are different tools and spaces for the students' discussion. Also, based on the interview data, I found that the students acknowledged that social networking facilitated their discussion; it provided a variety of tools that could be used in their discussion, e.g. videos and pages to help students understand the topics clearly. Additionally, the site had the advantage of discussion without any interruption; everyone can post in her/his own time, and keep a history of their discussion. In the interviews, some group members reported that they used The Hive to discuss their group activity and made it the only place to discuss their activity. Concluding these arguments in favour of online discussion: *"the contribution becomes equal and turn-taking eliminated. Everyone can talk at once. Also the content of discussion is explicitly presented for all members to review and reflect on."* (Beetham & Sharpe, 2007 p. 37)

Although the students perceived the great affordances of discussion on The Hive, the data in the study of the KSU context revealed that, in participating in the discussion, there was a lack of reflection and criticism. In the students' posts I noticed that some of them could not express their thoughts clearly, nor criticize, but that there were extensive thanks and courtesy posts. Some of the students' comments did not add value. I explored the reasons for this lack of added value comments in Section 7.2.1. I found that the students could not criticize others' posts.

They did not criticize anything either in education or in social situations. It could be that the students' educational culture had an impact on online learning interactions. I identified three potential reasons for this: the role and position of the teacher, the learning system in Saudi Arabia, and cultural understandings about pedagogy, e.g. it is not acceptable to criticise or appear critical. Al-Jarf (2005b) used 'cultural barriers' to describe this as one of the hindrances to online courses at two Saudi universities.

In addition, the students are used to studying in a one-way education system. They do not contradict or discuss any information from the teacher and take everything from her as a fact. In this system the students believe that they should contribute positively or not contribute at all. They have not been taught to express their opinions. As a result, from twelve years or more of studying in this way I assume their education and culture has had an effect on their engagement in online discussion. It is difficult for them to criticise or express their opinions. I think that, if the students were trained and encouraged to discuss and be critical, this would reduce the posts where no value is added.

I also noticed, from the extensive thanks found in their posts, that students believe that in a discussion we need a thanks comment to encourage others' contributions. On other hand, based on some participants' experience, if these comments exceed the valuable information they could cause the reverse effect. They reported that the main reason for the thanks comments was thinking that posting thanks comments counted as a contribution and added to their grades. So they were posting thanks posts because of the grades. I argue that the grading scheme affects contributions in online discussions, as with Al-Jarf's (2005b) findings. She claimed that the students were not motivated to participate in the online course because the activities were not part of the course mark or because the grades were not worth the effort (Williams

and Jacobs, 2004 cited in Redecker, 2009). I assume that it was not clear to them in my study what counted as a contribution and what did not. It could be that the tutor had not clarified the grading scheme, or that one student started thanking and the rest followed suit because thanks did not need reflection or criticism. Additionally, it could be that the students used to discuss informally in social networking sites e.g. Facebook and they just kept the same style. Another reason could be because of the nature of the course subject, which was practical, so sharing and explaining were more salient than criticism and reflection. There is a difference between the themes of discussion in theoretical subjects and practical subjects.

The variety of ways students discussed on The Hive (some of them being very active and engaged while others were not) is questioned in this research. Subsequently, these issues raised a problem in the students' comments. There were a lot of students in The Hive, their cultures were the same and they had the same background. Therefore I expected a lot of messages and a very good discussion as long as the students were working hard. Nevertheless, I found some discussion but it was limited. If it were down to the educational culture only, I would not have seen any discussion at all. I found that some students had developed many skills by using Web 2.0 applications informally, whereas others had not. I assume that their background skills had changed with regular use of the internet. In agreement with this, Franklin and Harmelen (2008) claimed that students were entering higher education with new background skills which they had developed from Web 2.0 use. It has been argued that these skills are totally ignored by the education system (Prensky, 2001).

Consequently these students are lacking in discussion skills. However, the findings of this study demonstrate that, even if some students made no comments, the social

networking site helped them construct their learning by reading and benefiting from others' posts. The same problem has been reported where young adults use a one-to-many communication style on social networking sites, and its benefits have been acknowledged (Pempek et al., 2009).

Nevertheless, it is important to address the problem of lack of added value posts and this should be taken into account when using social networking sites in Saudi Arabia. I believe that students need to acquire the skill of positive critique, of how to think together and discuss. This emphasises the importance of training the students, as well as tutors, to discuss in educational contexts and how to engage and prompt discussion in order to help them think together. I suggest some training sessions be held for students before introducing a social networking site in a course. Notwithstanding these problems, the social networking offers many pedagogical affordances in higher education, as mentioned above.

8.2 The affordances of social networking sites in supporting student learning in higher education in Saudi Arabia

The pedagogical affordances of the social networking site which have been found in this study, which I explored in Section 8.1, lead to support of the students in many ways. As has been pointed out in Section 8.1, the affordances of social networking sites are expected to enhance students' learning processes in a number of ways, as well as achieve the aims of higher education. The added value of the social networking site and Web 2.0 could help to develop Web-based instruction, as has been articulated by several authors (e.g. Kirschner & Paas, 2001). In the following sections I will explain how my findings can be used to demonstrate this assumption.

8.2.1 Enhancing new knowledge age skills

The pedagogical affordances that emerged in this study - Reflection, Stimulation, Content creation, Collaborative learning and Online discussion - lead to the support and development of new skills for students while they interact in the social networking site as Figure 7.7 demonstrates. I claim that applying the social networking site in a course helps the students to acquire and develop the new knowledge skills of Critical thinking and problem solving, Communication, Collaboration, and Creativity and innovation (Trilling and Fadel, 2009).

Based on what the participants said about their learning experience, and on the evidence of the study findings, I argue that the affordances of the social networking site support students' skills development, as Figure 7.7 shows. Online discussion and reflection help the students to acquire communication skills and critical thinking. These communication skills will be improved when the students interact with each other in the social networking site. In addition, as I mentioned in Section 7.1.2.5, there is evidence in the data that the social networking site supports collaborative skills, even if there was not a collaborative activity, as all the members of the group course cooperated to finish their individual projects. The creativity skill may be acquired by students in online discussion, interaction and stimulation from others' posts. Several researchers have supported the same argument by claiming that Web 2.0 facilitates the acquisition of communication skills and influences creativity by engaging in creative learning (Coenen, 2005 cited in Redecker, 2009; McLoughlin & Lee, 2007).

8.2.2 Supporting women education in Saudi Arabia

Collaborative learning on social networking sites is appreciated in our Saudi culture, especially for female students. I mentioned in Chapter 2 the special situation of

women in Saudi Arabia, for those whose families object to their daughter going to peers' houses or meeting outside the campus. So the social network affords a space for female students to collaborate and interact with each other whatever the time and location. This facility, which is a special advantage in Saudi culture, is not restricted to Saudi culture, nor is it exclusively a gender issue; its mobility is appreciated by other students at Exeter University to keep them working together over weekends and holidays.

8.2.3 Self learning

Based on finding reported on section 7.1.2, I claim that the social networking site supported students' **self learning and social learning**. Self-learning was emphasised when students reflected on their learning and proposed new issues in the social networking site, as well as criticised the work of others. This self-learning could be enhanced on their blog. Social learning is prompted in discussion and collaboration as well as in thinking together. This kind of learning is enhanced in the social networking site as a whole. It agrees with my argument that social networking sites are expected to encourage independent, autonomous and self-directed learners; use of these sites can lead to the acquisition of many social skills that can help students to interact socially with others (Redecker, 2009). London and Hall (2011) indicated that Web 2.0 enhances and supports learners to process their own learning. This style of learning will support universities' aims to create independent learners: "*self-directed learners who are able to set their own learning goals; develop strategies and plan how to achieve those goals; work towards realising the goals, either on their own or with others; and reflect on their learning processes and outcomes*" (Franklin & Harmelen, 2007, p.21).

8.2.4 Dialogue and criticism

Moreover I claim that the social networking site supports the students' **dialogue and criticism** as it is afford online discussion for the students presented in Section 7.1.2.6. In the social networking site the students' posts are open to others so this opens space for dialogue or critique. Hemmi et al. (2009) claims that by using blogs students become more aware of different viewpoints and think at a deeper level. Also, group discussion prompts students' dialogue. I agree with Wegerif's (2007) claim that online learning prompts students' dialogue when properly supported by pedagogy.

8.2.5 Electronic documents

The social networking site provides the students with electronic documents. From the results of the study as Section 7.1.2.1 presents, I argue that in a social networking site each student can document his/her learning in his/her blog and make his/her e-portfolio. In this sense I would concur with Downes' conclusion that:

The portfolio can provide an opportunity to demonstrate one's ability to collect, organize, interpret and reflect on documents and sources of information. It is also a tool for continuing professional development, encouraging individuals to take responsibility for and demonstrate the results of their own learning. (Downes, 2005, para.35)

Thus the tutor can assess students' learning and students can monitor their own progress. Because students can post easily on the site, reflect on their learning and discuss it with others, all course activities could be on the one site, as participants agreed in their interviews. In addition, they could use their profiles to document their learning, using their own personal place to upload and show their own work. Similarly, Childnet International (2008, cited in Redecker, 2009) suggests the

potential uses of social networking services in education as *"developing e-portfolios as online spaces where learners can record their achievements and collect examples of their work, exploring and promoting their talents and interests."* (p.32). E-portfolios were found to enhance students' literacy skills (Hughes et al., 2011 cited in Barden, 2012) as well as increase professional engagement (Albion, 2008).

8.2.6 Active learners

Social networking sites encourage students to be **active learners**. The affordances of the social networking site (see section 7.1.2), found in this study, support this claim in that students became active by sharing and contributing to the course content with their discussion and posts, and by active participation with peers, instructors, experts and community. In a social networking site used in educational context, tutors could set up the syllabus of the course and plan the course activity. Then the students would be able to share the construction of the course content with the tutors. They could introduce the materials of the course through their discussion, sharing, and thinking together as in a Wikipedia site. In social networking sites, the students will no longer be mere consumers of content, as McLoughlin and Lee (2007) pointed out that Web 2.0 applications support student content creation. Franklin & Harmelen (2007) discussed the argument of whether students can create course materials using Web 2.0 applications. They followed up this argument by some evidence of students' content creation: some university course work was to create or modify Wikipedia articles, as in Wikiversity, and the Open University's OpenLearn project. Finally, it is worth reiterating that social networking sites support the new generation of students' needs, as discussed in Chapter 3.

8.2.7 High quality collaboration

In the social networking site, students could improve the quality of their **collaboration**. As I mentioned earlier, the students reported in the interviews that when they worked collaboratively in the social network site they noticed a difference from their previous collaborative learning. They reported that the quality of their work was better than when other media were used to collaborate. This is in line with the study by Childnet International (2008, cited in Redecker, 2009), who found that one of the potential uses of social networking services is “*fostering collaboration and group work*” (p.32). I assume that it is the transparency of online work that helps to improve its quality. I argue that this technology changes learning to being collaborative rather than competitive.

8.2.8 Transparency and Facilitation

The students submit their task assignments in the social network site where every member can see it; there is transparent learning. The “**transparency**” occurs where all comments, teachers’ answers, students’ work...etc. appear to every member of the group. As I found in this study, it encouraged the students to interact with each other and to collaborate.

Facilitation: the social network site has many tools in one site. For example, The Hive contains a lot of applications and Web 2.0 features (e.g. blogs, group discussion, personal profiles, files, videos and photos, book marks). As a result there is only one site to concentrate on, with all the applications which help to facilitate the students’ learning, so there is no need for other sites. This was acknowledged by all the students in this study.

Finally, I conclude this section with the following summary from Deal's (2007 cited in Norton & Hathaway, 2008) study to be representative of my arguments related to social networking sites, although it relates specifically to podcasts:

Does podcasting enhance education? The answer to that question depends entirely on the educational context, including goals and appropriate learning activities, and on how the tool is implemented. Podcasting does not contain any inherent value. It is only valuable in as much as it helps the instructor and students reach their educational goals, by facilitating thoughtful, engaging learning activities that are designed to work in support of those goals. (p. 12)

In this section I have presented the ways in which the affordances of the social networking site could support student learning in higher education in Saudi Arabia. However, the educational context is an important factor to consider when applying this technology in education, which I will discuss it in next section.

8.3 Applying a social networking site successfully in a higher education course in Saudi Arabia

The findings of this study demonstrate that Social networking site has valuable pedagogical affordances for a course in higher education in Saudi Arabia. These pedagogical affordances, as I argued in a former section, will support students' in higher education. In addition, they will support the new higher education policy as I mentioned in Chapter 2. To apply the social networking site successfully in Saudi Arabia we should take into account several issues and apply some strategies to eliminate the hindrances that were found in the present study. In this section I will present the main issues for successful course design using social networking. Following from the evaluation of this innovation in a course in Saudi Arabia, I

suggest a revised framework for designing a course that applies this technology in Saudi Arabia. Britain and Liber (1999, p.3, cited in Conole and Dyke, 2004a) point to the importance of the design framework:

Amongst the factors that are slowing the uptake [is] ... the lack of a coherent framework within which to evaluate both the pedagogical benefits and the organizational changes required to effectively implement it. (p.113)

This framework, in Table 8.1, can help to develop an improved course design and give some suggestions that could eliminate the hindrances found in this study in more detail.

The principles established from the study at Exeter University in Phase One are revised and new principles suggested, as illustrated in Table 8.1. I am aware of the differences between the two contexts; nevertheless it is clear from the findings that the affordances are the same, so these principles are not restricted to higher education in Saudi Arabia.

Three issues should be considered when applying a social networking site in a higher education course: activities, students and tutor. Figure 8.2 illustrates these issues, where these components are based on each other in the social network. These main components should be taken into account when designing a course with a social networking site, in which they are shaped by and benefit from the affordances of the social network.

Figure 8.2: A framework to apply a SNS in an HE course.

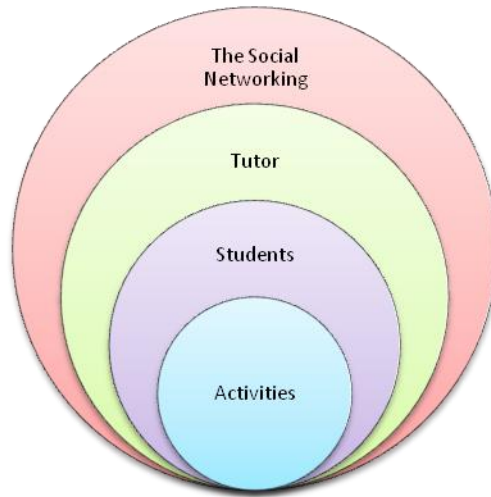


Table 8.1: Findings from study 2 used to develop Design Framework 2

Design Framework 1	How to test	Findings	Design Framework 2
<p>Students should be encouraged to reflect.</p> <p>Designing course activities that support reflection.</p>	<p>Individual post in each blog.</p> <p>Ask the students to write the activities on their blog.</p> <p>The students asked to document their learning and create e-portfolio in their space.</p>	<p>Students' reflection was limited and their reflection was neither in-depth nor critical.</p> <p>Some students lacked the ability to generate authentic content, lacked writing skills, and were unable to criticize or produce added value posts.</p>	<p>The course designer could improve students' reflection by designing activities that support reflection.</p> <p>Giving instructions and guide lines on how to reflect and encourage students' reflection; this may require the tutors supporting.</p> <p>Training students how to criticize.</p> <p>Give some guide lines how to write academic writing.</p> <p>I suggest that the activities should encourage students to develop their skills, e.g. critical thinking and self-learning.</p>
<p>Students should be encouraged to share their work on the social networking.</p> <p>The tutors should encourage their students to contribute positively to the course.</p>	<p>Write their tasks and activities on the social networking site.</p> <p>Asked the students to post any subject or questions related to the course.</p>	<p>Students and tutors contributed by uploading new materials related to the course.</p> <p>Students post their activities on the social networking site.</p> <p>Identified the challenges when using electronic resources: privacy, plagiarism, and sharing authorship.</p>	<p>The tutors should encourage their students to contribute positively to the course.</p> <p>Tutors could set up the syllabus of the course and plan the course activity.</p> <p>The students should be made aware of their new role in social networking, where the learner participates in the learning process.</p> <p>Encourage students to contribute as well as acquire information.</p>

			<p>It would be necessary for the students to have some online consensus about privacy, plagiarism, and sharing authorship.</p> <p>Help and support students in how to identify /evaluate information on Web 2.0.</p> <p>The tutors should keep their students' posts at a suitable standard of academic writing and to prevent plagiarism.</p>
<p>Encourage students to read others blogs and comment on it.</p> <p>Students' interaction on the social networking site should be assessed.</p> <p>New assessment methods should be implemented.</p>	<p>Comments on three post each week.</p>	<p>The students were stimulated by other blogs and posts even if they did not contribute any of their own or interact with each other, stimulated silent students.</p> <p>Posts lot of thanks comments as a contribution to the course.</p>	<p>Encourage students to read others blogs and comment on it.</p> <p>A clear statement should be presented to students of what is expected of them and to what standard.</p> <p>Students' interaction on the social networking site should be assessed to help them take the online course more seriously.</p> <p>The students' contributions and interactions should be assessed as part of the overall course assessment.</p> <p>New assessment methods should be implemented to assess the students' contribution on the social networking site.</p> <p>The new assessment approaches should emphasise critical engagement and reflection.</p>
<p>Encourage debate and discussion.</p>	<p>Ask question each week as activities to post on the social networking.</p>	<p>The social networking site facilitates online discussion with all types of talk.</p>	<p>Students should be prepared with a training session. For example, the preparation in how to discuss in an educational context and how to</p>

<p>Teacher role should be encouraging students to discuss and criticise and challenge each other. Also open space for discussion.</p>	<p>Explain to the students that they are free to upload or open new threads for discussion.</p>	<p>The site had the advantage of discussion without any interruption; everyone can post in her/his own time, and keep a history of their discussion.</p> <p>There was a lack of online discussion skills e.g. could not express their thoughts clearly, nor criticize.</p> <p>There were extensive thanks and courtesy posts.</p> <p>Their interaction and contribution was limited to certain subjects and to their friends; they were shy and afraid to criticise other students or to critique others.</p> <p>Prefer to use nicknames in online interaction.</p> <p>Giving full names stifled discussion and made students nervous.</p> <p>The students cannot discuss in front of their tutors.</p>	<p>engage and prompt discussion in order to help them to acquire the skill of positive critique, think together .: e.g. asking well-constructed, relevant questions, inviting others to discuss, challenging other students' work, asking for clarification, explaining and expanding others' contributions.</p> <p>The social network site and how to use it in the educational context should be introduced to the students in pre-sessions before the course.</p> <p>Students should be guided in how to criticise, reflect and think together. E.g. criticise the post not the personal.</p> <p>Teacher role should be encouraging students to discuss and criticise and challenge each other. Also open space for discussion.</p> <p>It may be advisable to divide students into small groups to keep the discussions on track, to give them goals to reach, to explore their expectations and to guide them to reach the same goal.</p> <p>Tutors should encourage students to use their actual names in social networking site and to speak as they speak in campus.</p> <p>Students should be encouraged to maintain and express clearly their student identity in SNS.</p> <p>Establish a tutor-students relationship built on discussion and dialog.</p>
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<p>Encourage group work.</p> <p>Prompt students' collaboration by given to students group work.</p>	<p>Give students a group project.</p> <p>Ask students to use the social networking space in their group work.</p>	<p>The mobility of the collaboration process is evidenced in the data from this study where the students could keep working together even on holiday or off campus.</p> <p>Affords a space for Saudi female students to collaborate and interact with each other whatever the time and location.</p> <p>A different approach to collaborative learning in this social networking site. The students collaborated with each other in a way I call 'individual-collaborative'</p> <p>The quality of the collaborative work was improved and made easier by using the social networking site.</p>	<p>Encourage group work via the social networking site.</p> <p>Give the students activities that present material as problems to be solved, and allow consideration of multiple solutions. The activities should encourage thinking together and collaborative learning, and open up spaces for dialogue and discussion.</p>
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8.3.1 Activities

The activities performed in a social networking site are the core of students' interaction. It helps students to get started with the social networking site, prompts students' interaction and opens space for interaction. In this study we designed the activities based on the principles developed from the first phase (see Table 5.3). They were designed based on the principles of critical thinking, reflective learning, group work, and problem solving.

In the second phase of the study I found that some activities did not motivate the students even if it was based on these principles; and students reported that some of the activities did not help them to interact. From the students' perspective, the activities should be related to the course objectives and should be challenging. The activities should link with the course aims and the students should understand the importance of them.

It should be emphasised that, to apply social networking successfully within educational practices, the course activities should be designed well. Bennett et al. (2012) argue that it is challenging to design a task supported by Web 2.0 by which the students can achieve their learning outcomes.

8.3.2 Students

An important aspect to consider when applying this technology in a course in Saudi Arabia is the nature of the students. They are at the core of the interaction on the social networking site. As I mentioned previously, their skills, needs, attitudes and experience are important to consider when they interact on the social networking site. I agree with Hew and Cheung's (2008) warning:

Although asynchronous online discussions can afford certain benefits, such benefits can only be reaped if participants are

willing to participate in the discussions in the first place.
(p.171)

In this study I found that the students at University of Exeter were more likely to reflect than students in KSU. Furthermore, the latter students did not have the confidence to search for or present new information, or to contribute to a discussion, and lacked critical thinking skills. This could result from the students' lack of certain skills, for example reflecting, criticizing, and critical thinking. So I assume that acquiring these skills is important to enable students to interact on the social network.

The activities should fulfill the students' needs. The students will interact with each other on the social networking site, and the activities will be the basis of their interaction. In this study, as I mentioned earlier, I found that Saudi students are skillful in using technology, and their attitude towards using social networking site is positive, as they posted in The Hive or reported in the interviews. Nevertheless, their interaction and contribution was limited to certain subjects and to their friends; they were shy and afraid to criticise other students or to critique others. I assume that their previous educational experience affected their interaction.

These underline the importance of educating students and preparing them for dealing with social networking site environments in education. I suggest that, to benefit from a social networking site in a course, students should be prepared with a training session. The social network site and how to use it in the educational context should be introduced to the students in pre-sessions before the course. It is important to highlight that students need to be prepared with some new knowledge age skills (critical thinking and problem solving, communication, collaboration and creativity and innovation). They also need

preparation in how to discuss in an educational context: e.g. asking well-constructed, relevant questions, inviting others to discuss, challenging other students' work, asking for clarification, explaining and expanding others' contributions.

This concurs with the findings of many researchers (Selwyn et al., 2008; Rudd et al., 2006a cited in Redecker, 2009) who have emphasised the importance of designing social networking sites within the educational system that motivate students to be active and to engage in the learning process, that enable the students to control the learning process, and put the students at the learning-centre; also they underline the necessity for supporting students' needs and interests and to make students' voices heard.

8.3.3 Tutors: experience, values, beliefs, skills and perceptions

The tutors' experience, values, beliefs, skills and perceptions might be a barrier to applying social networking. While I found in Exeter University that the tutors supported students' reflection by proposing an argument at the end of each lecture to reflect on and discuss on The Hive, in Riyadh the tutors likened the social networking site to a course management system, emulating LMS. In addition, the teaching approach in higher education in Saudi Arabia, as mentioned in Chapter 2, is a traditional model where the students are passive and the teaching is based on lectures and final exams. In the interview findings, some tutors revealed a belief in one-way teaching, where the tutor is the source of the information and the students receive it. As a result, the students in King Saud University did not interact in the same way as students in Exeter University. Therefore we need to reform the tutors' role so that they can guide the students' learning when using social networking sites.

Thus there is evidence in this study to support the assumption that the tutors' expectations, experience, values, beliefs, skills and perceptions affect the students' contribution on the social network site. So, to successfully apply social networking in higher education, tutors as well as students should be introduced to social networking. Hughes (2009) asserted tutors' crucial role in the technologies area, where the tutors "*are central to the design of courses and hence of learners' experiences*" (p.38). The new role of tutors will be to assist and encourage students to interact and use this technology and to support their learning, and this is in agreement with Luckin's et al. (2009) suggestion. Another study asserting the tutors' essential role in online interaction is Al-Jarf's (2005b) recommendation that class discussion of the online subjects before or after the posting will prompt students to interact and contribute. However, Harmelen (2008) suggests the possibility of a tutor skills and/or culture crisis arising in using Web 2.0 applications.

I suggest that a Career Professional Development (CPD) program is required for the tutors. To use the social networking site successfully in the learning process, they should be prepared for their new role as supervisor, facilitator and guidance. Changing the learning to student-center will be presented as a challenge to applying social networking sites in education in the next section.

8.4 Challenge to designing courses with social networking sites SNSs in SA

Applying new technology in education needs careful consideration. The three issues presented in earlier sections present some challenges in their application. These challenges arise from the findings reported in Chapter 7. Bennett et al (2012) highlights the problems of using Web 2.0 in educational practices, and discusses whether or not these problems can be overcome.

8.4.1 Educational Culture

The main challenge of applying social networking sites in education is the educational culture of the students. From this study it has been concluded that, while a wide range of factors impact on Saudi students' readiness to get involved in an online discussion using the social network, evidence from the data suggests that the main factor causing their reluctance is their educational culture as Figure 7.5 reveals. The educational culture of these Saudi students could be one of the factors preventing their engagement in academic discussion. Al-Jarf (2005b) described, in one of her studies, finding the 'cultural barriers': the students were afraid of making mistakes in public; they were afraid there might be criticism or negative comments; they read and checked the websites and posts rather than contributing; they were passive rather than active learners (Al-Jarf, 2005b).

As previously mentioned by the participants of the study, the cultural expectation of educational discourse is that you can only criticise and comment on your friends' posts; because in their social discourse they were open and friendly and they could challenge each other as friends. I noticed an interesting difference between social and educational dialogue; that they are not able to share and discuss in educational spaces but only in social spaces. I believe this arises from students' educational assumptions: in educational contexts, they do not have space to think or express their thoughts; they learn from textbooks and take everything as fact.

8.4.2 Lack of new knowledge age skills

In the literature review, Chapter 3, I highlighted some of the skills that learners need in order to engage in the new arena with use of Web 2.0 technologies for learning. While the social networking site supports new knowledge age skills,

the students need to acquire some skills beforehand in order to interact with the social networking site. In this study I found some students lacked the ability to generate authentic content, lacked writing skills, and were unable to criticize or produce added value posts. As mentioned earlier in Section 7.1.2.4, when I explored their posts I noticed that most were copied from other sites or articles. The social networking site is text-based; participants have to express their thoughts in writing so they need “*good standards of written language*” (Beeham & Shape, 2007, p. 37). As mentioned in Chapter 2, the students do not critique or write in their own words in their usual educational lives; they have a lack of writing skills. They have only one academic subject where they write in their own words and produce content themselves, the subject called ‘Inshaa’. Otherwise they memorise facts from textbooks in order to answer the final exam questions. Moreover, the education system in Saudi Arabia does not give the students the opportunity to critique or to put their point of view; everything has to be taken as fact. It is not only for higher education students to be aware of the skills needed for this era and acquire them, the policy makers for primary and high schools should take into account the need to prepare and guide students to acquire the skills for the new knowledge generation. Accordingly, I address the issue of students’ lack of skills as the greatest challenge to using social networking sites in education.

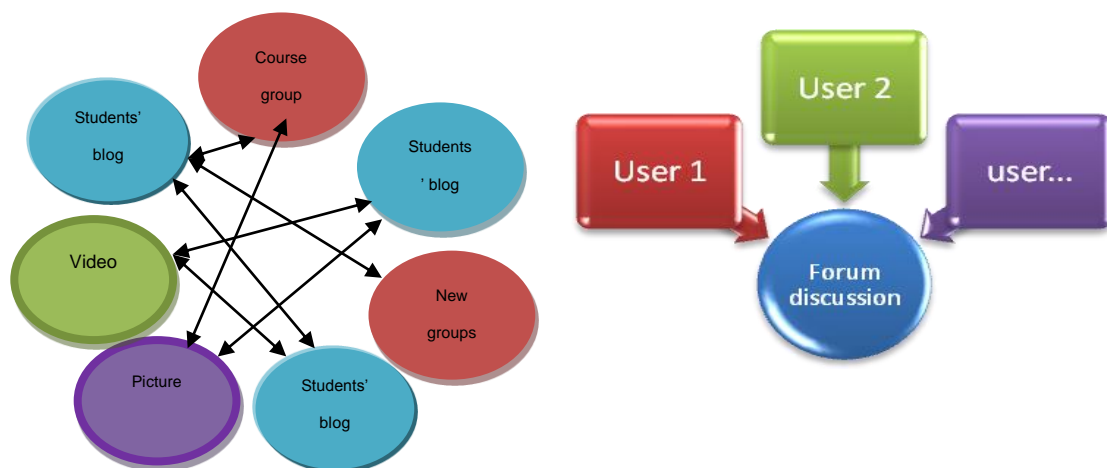
8.4.3 Social network

One challenge facing the application of social networking in a course in Saudi Arabia is the educational social network concept. In this study I found the students preferred to post and interact in group discussion space rather than their own space (blog) or other spaces. As a result, most discussion threads were found in group discussions and in their collaborative groups, while there

were few discussions or posts in other spaces such as their blogs. I assume that the concept of a social network was not very clear to the students, who were new to using this technology in higher education. It could also be due to their long experience in use of forums, which I call ‘forum culture’.

Whereas, on the forum, all its members interact with each other in one space where they discuss and interact under their user name, on social networking sites there are many spaces to interact with others and others can comment and discuss in your profile or blog. I have simplified these concepts in Figure 8.3.

Figure 8.3: Differences between social networking and forum discussion.



8.4.4 Actual identity

Students’ virtual identity presents a challenge when using social networking in education as presented in Section 7.2.2. How the students should express their identity in the virtual space of a social networking site is questionable: should they present the same identity as in their daily life, their actual identity? It is argued that the difference between virtual and actual identity is not clear (Geffer, 2006 cited in Schuck, 2010), and that the virtual world and actual world are psychologically connected (Subrahmanyam et al., 2008). Nowadays the students use social networking sites extensively in their daily life (Miniwats

Marketing Group, 2012) where that encourages them to engage under their virtual identity. Social networking sites encourage students to represent themselves in their space and maintain their profile (Selwyn et al., 2008). It is argued that social networking sites help to explore, reflect, and develop facets of students' identity (McLoughlin & Lee, 2007; Pempek et al., 2009). In an education context, it is required to maintain a student's identity where the virtual is the same as actual identity.

It is noticed in this study that there was a conflict between the two identities. I found the students interacted and discussed more on the campus than on the social network sites. Also, some students reported unease when using their full names on the social network site. A study in a similar context found that the students wanted to conceal their identity, i.e. use pseudonyms, in the online discussion (Al-Jarf, 2005b), while in the present study the students expressed anxiety about using their full names on The Hive. Al-Jarf (2006b) argued that the participants in online discussions can use a nickname - which helps those who do not feel comfortable - to post and respond to the discussion. The participants in the current study used the internet extensively; the majority had their virtual identity and virtual name. Most of them used Facebook and Twitter a lot, as they reported in the interviews. I assume from that they were happy to have two identities. The conflict of actual and virtual identities could result from their being heavy users of online applications under their virtual identity which differs from their actual identity. Additionally, it could be, as Al-Wehaibi et al. (2008) reported, that the concern is with the loss of privacy in online applications, which is one problem for the faculty members of using internet technology in their teaching. Alternatively, it could be, as Selwyn (2009a) argued, that social networking applications lead students to present only that

part of themselves that they think is appropriate to the situation, or present just part of their faces so that they cannot be identified by others.

Nevertheless, in the current study in an educational context where students' actual and virtual identity is the same, they did not contribute well. This is in line with a previous study by Crook:

Personal identity can be protected (and shaped) in the processes of deciding what to make visible to whom, and in what manner. However, the visibility that arises from publishing within a school context may lack this dimension of control and therefore may be less attractive. For some students this simply reflects an aspiration to manage identity in a way that does not suggest they are keen students. (Crook, 2012, p.74)

This issue should be taken into account and students should be encouraged to maintain and express clearly their student identity in virtual spaces. There is a risk where virtual identity differs from actual identity in the educational context.

8.4.5 New assessment methods

New assessment methods should be implemented to assess the students' contribution on the social networking site. Selwyn et al. (2008) pointed out the importance of new assessment tools and processes with using Web 2.0 applications. This agrees with my argument that new pedagogies with new technologies demand new assessment methods (Franklin & Harmelen, 2007).

On the social networking sites, the students learn from each other, stimulate each other, and upload their work and tasks on the site as presented in Section 7.1.2. This means that tutors need new methods to assess this new way of learning. Group work, for example, on the social networking site needs new methods of assessment to be fair to individuals (Harmelen, 2008; Collis &

Moonen, 2008). In addition, students' interaction on the social networking site should be assessed to encourage them to interact and discuss in the online activities more seriously; e.g. "*it must be part of the final exam and course credit*" (Al-Jarf, 2005b, p.10). Crook (2012) presented two concerns on the difficulties of assessment of publishing online: open door for cheating and author legitimate.

8.4.6 Plagiarism

The students in my study do not have courses about academic writing and plagiarism (see Section 2.3), so there is a challenge when using electronic resources where it is easy to copy and paste. Harmelen (2008) refers to 'new teen copy-and-paste culture' when students share and reuse material in Web 2.0 without any concern about plagiarism or the legitimacy of the contents. The issue of the ownership of content in Web 2.0 is also a concern; it is found that students in Web 2.0 are very relaxed to re-compose others' content (Franklin & Harmelen, 2007). This challenge was identified by most participants in the interviews. Sait et al. (nd) argue that plagiarism on the internet exists and spreads between Saudi students because it is so easy to copy and paste. The tutors' challenge is to keep their students' posts at a suitable standard of academic writing and to prevent plagiarism, which is difficult to monitor or detect (Ala-Mutka, 2008 cited in Redecker, 2009).

On the other hand, working on the social network site helps the students to become aware of plagiarism and electronic theft of their work as reported in Section 7.1.2.5. As a result of the transparency of submissions to this site they may be able to avoid plagiarism and copying others work because all the site members will be able to see their work and their comments. However, I did find that some students in the interviews were aware of these academic writing

standards. Wang et al. (2012) concurred with the same argument that “Facebook users are much more responsible for content and privacy” (p.13). In the same line, Childnet International (2008, cited in Redecker, 2009) reported that potential uses of Web 2.0 in education could support “*learning about data protection and copyright issues*” (p.32).

8.4.7 Teacher’s Role

It is not enough to set up a social networking site for students to interact, as the tool does not afford these features all by itself, but requires the input of the teacher. With applying technology in formal learning, the role of the teacher changes and becomes a more sophisticated one (Beetham & Sharpe, 2007). The new role is to supervise and support students’ learning, guide them to learn how to learn or, as Sessa and London (2006 cited in London & Hall, 2011) called it, ‘guide on the side’. It is no longer the teacher who is the sole source of information and therefore the relation between students and teachers becomes more of a partnership (Hughes, 2009). In this study, I found that the tutor may be a hindrance if s/he acts in the traditional role (e.g. the source of information) or resists the change to new technology, as I found in this study in Section 7.2.3. The resistance could be because the teacher perceives that technologies are difficult to implement in practice (Collis & Moonen, 2008). It has been suggested that instructors need to act as facilitators more than as teachers (London & Hall, 2011). In addition, teachers need to encourage and sustain learners’ interaction with technologies, otherwise students get lost and feel the need for more structure in the learning process (Al-Khalifa, 2008b; Huang & Nakazawa, 2010; Wheeler, Yeomans, and Wheeler, 2008 cited in Lim et al., 2010). I agree with Selwyn et al. (2008) who point to the crucial and sophisticated role of the teacher in the Web 2.0 arena. He argued that:

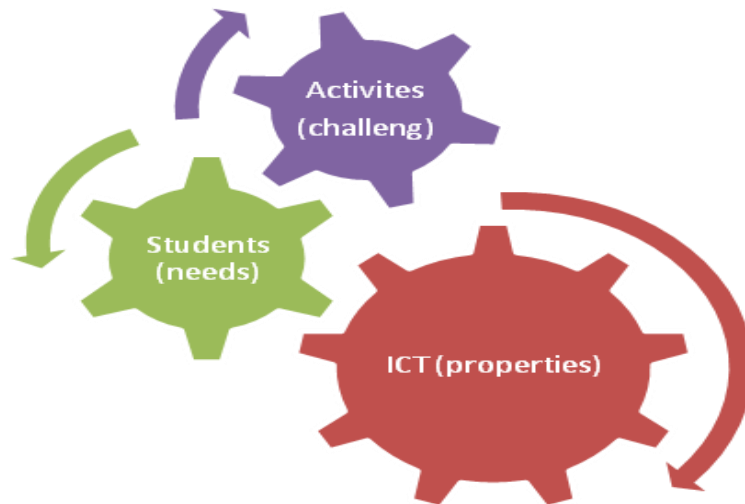
Collaborations need to be orchestrated if they are to be more than mere co-ordinations. The exposure of publication can be stressful as well as empowering. Confidence in reading the representational richness of the internet demands fluency in new literacies, which calls for careful tutoring. Research inquiry must be grounded in confident judgements about authority. All of these issues demand adjustments in the teacher's role. (p.25)

It is important when applying social networking sites in education to emphasise the new role of the teacher in supporting students' interaction. The challenge is in how the teacher acts as a facilitator and sustains learners' interaction with the social networking site.

8.5 The pedagogical affordances of ICT technology (in general)

Nowadays, we are faced with the production of new technology every day. Many educators use them for educational purposes with individual strategies and trial-and-error learning. My findings suggest some ground rules for the innovation of the intended technology in everyday teaching. Based on this study, I will illustrate some suggestions which could be generalized to any innovation. Figure 8.4 illustrates how to emphasise the pedagogical affordances of the ICT. We should balance three components when innovating new technology in education: students' needs, the properties of the ICT, and the activities. I claim that if these three components are properly considered when applying new technology in pedagogy, which will support and prompts students' learning and afford this technology to pedagogy.

Figure 8.4: How to emphasize the pedagogical affordances of the ICT.



8.5.1 Properties of ICT

I suggest this is the component to begin with. Norman's (2002) definition of affordances can be stressed at this stage. I refer to it as 'initial affordances', those for which the course designer adopts this technology. These affordances should be based on the properties of the ICT. At this stage, the educators should discover the action possibilities that s/he can apply for their students to use in this technology, based on the properties of the technology. But one should also consider what cannot be done using this technology, as Gibson argued in reference to the natural world: *"the affordances of the environment are what it offers the animal, what it provides or furnishes, either for good or ill"* (Gibson, 1979, p.127).

8.5.2 Activities

The tutor should create and design activities for the course that challenge the students as well as achieving the aims of the course. When the students start to interact with ICT environments, new affordances will emerge. The tutor should be open-minded enough to adopt the new affordances that could apply to new challenges. These activities may reveal new affordances as the students

interact with this environment. In addition the participants' needs will prompt the affordances, as I will explain next.

8.5.3 Students

The students' experience, values, beliefs, skills, attitudes, perceptions and abilities shape the affordances of the technology. As illustrated in Chapter 3, the affordances of the technology are based on the individual's experience, values, beliefs, skills and perceptions. The *"affordances are always in relation to an individual and their capabilities. This also includes the individual's past experience, values, beliefs, skills and perceptions. Therefore a button may not have the affordance of pushing if an individual has no cultural context or understanding of the notion of buttons or related objects and what they are for"* (Conole, 2013, p. 86).

In addition, I presented in previous sections how the social networking site brings minds and ideas into contact with each other. The students should be enabled with skills to collaborate and learn from each other while interacting with technology. Furthermore, these skills will develop and new skills will be introduced.

The affordances of the technologies are shaped and perceived based on the student's ability and capability. As a result, before the innovation of a new technology the students should be trained and motivated to use it. This will help to allow them to interact and shape the pedagogical affordances of the new environment.

Summary:

In this chapter I have raised and discussed three issues: how can the affordances of a social networking site be conceptualised? How can the

affordances of social networking support student learning in higher education in Saudi Arabia? And how can social networking sites be applied successfully in Saudi Arabia? I have also explained some challenges that should be taken into account when designing other courses with social networking sites in higher education. Finally, I have presented factors which should help to develop an improved course design and given some suggestions that could eliminate the hindrances found in this study. I have justified my discussion from the literature and from the whole of my thesis findings. I have explored the answer to the questions and discussed them in detail.

I have conceptualized the pedagogical affordances of the social networking site and presented revised principles. These principles will shape the activities of a course applying social networking. In addition, I have discussed some issues that I think support students' learning when introducing a social networking site into a course in higher education. It should be noted that these issues will not support students unless tutors promote these issues and guide the students, and unless policy makers and practitioners plan to provide students with the necessary skills to help them benefit from this environment. In this respect, the students should be prepared with the skills that I will discuss in the next chapter.

Chapter 9 : Conclusion

This chapter presents the conclusions of the study. It summarises its achievements in the form of several contributions to research, makes recommendations and draws out implications based on the study findings. Further research is recommended which would follow on from this research. Finally, a summary of the challenges to the study and its limitations are outlined.

9.1 Contributions

The aim of this study was to investigate the pedagogical affordances of the social networking site as perceived by the students and their tutors. The study has drawn out the findings by utilising a qualitative approach to educational research. This study constitutes one contribution to this field and to the new and limited field of qualitative educational research in Saudi Arabia.

In addition the thesis offers the following contributions to research in the field of education and educational technology:

- The Elgg social networking site offers some pedagogical affordances in higher education. This study reveals some of these affordances to be: Reflection, Stimulation, Learner-created contents, Collaboration, and Online Discussion.
- Students' new knowledge age skills (critical thinking and problem solving, communication, collaboration, creativity and innovation) can be improved by using an Elgg social networking site in combination with appropriate pedagogy.
- Social networking sites can be used effectively to support learning in higher education in Saudi Arabia. The study shows evidence of the way

the site supports students in many ways: self learning, dialogue and criticism, e-documents, active learning, and high quality collaboration.

- A set of principles has been derived for the design of a course using a SNS in higher education in Saudi Arabia see Table 8.1. The course embeds reflective learning, critical thinking, problem solving, collaborative learning, and criticism.
- The findings of the study point to the support to female education in Saudi Arabia that the social networking site affords. The special position of women in the K.S.A. is characterised by the limited range of movement allowed her; but with the social networking site her mobility is expanded. The study has shown how female students can contact and participate with each other without leaving the house.

9.2 Implications for educational practice

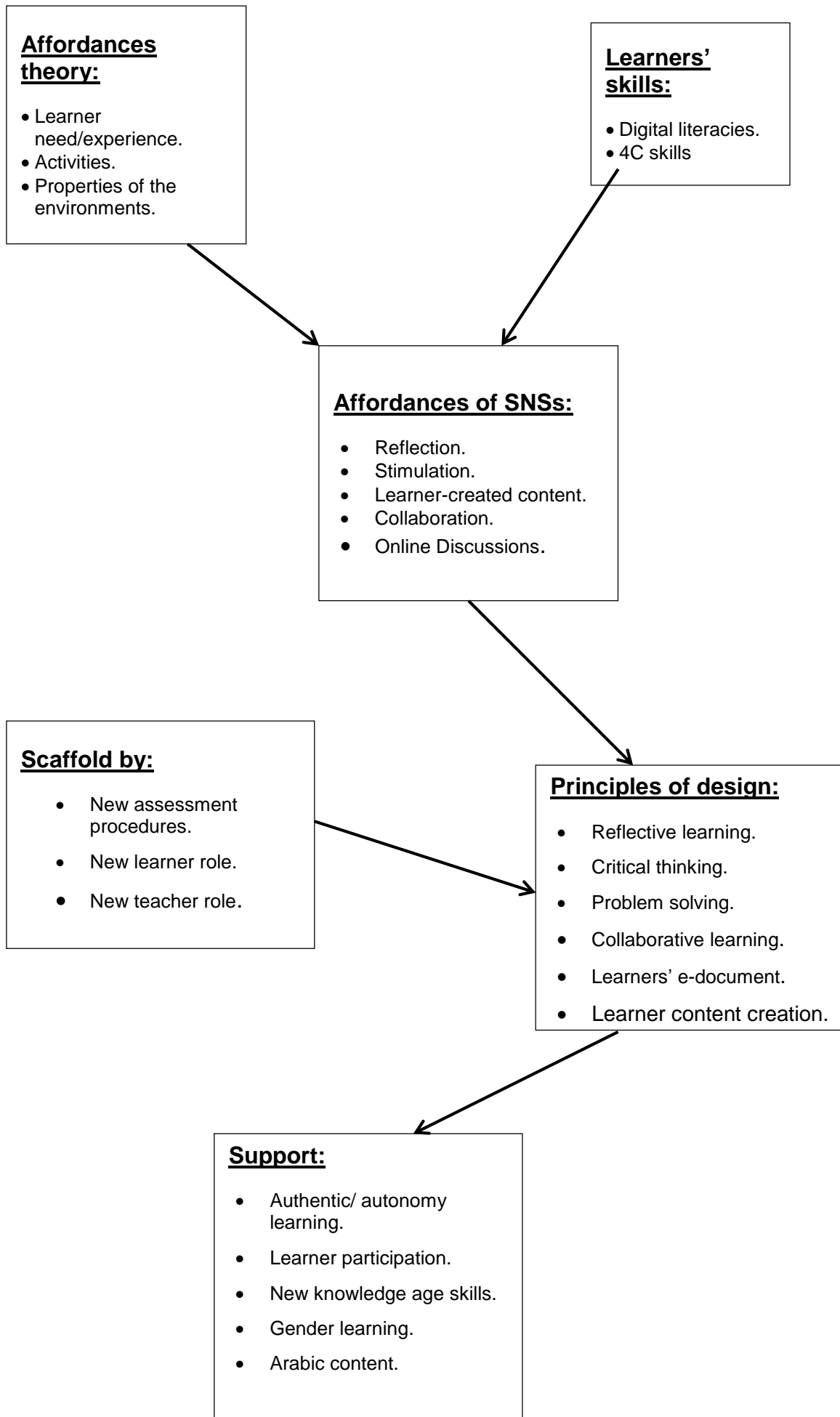
The aims of this study were to investigate the pedagogical affordances of a social networking site and to explore good practices to ultimately benefit from this technology in higher education. The study has suggested a conceptual framework to apply a social networking site in an educational context.

As a result of this study, some theoretical principles of how to apply social networking sites (Figure 9.1) have been constructed. These should help to design a further course with the innovation of a social networking site in higher education in Saudi Arabia. The pedagogical affordances of the social networking site, as seen through the lens of affordances theory, were made plain and they enhanced the learners' skills. The development of an improved course design was shaped through the principles shown in the diagram. These were derived from the study findings which formulated the proposed framework

in Chapter 8. The theoretical framework suggests some changes are required in the tutor's role, the students' role and the assessment procedures if it is to be effectively applied. Within an appropriate educational context, namely appropriate goals, appropriate learning activities, and suitable ways for the tool to be implemented, the course with social networking could support: authentic/autonomous learning, learner participation, new knowledge age skills, gender learning, and Arabic content. This framework will hopefully help the educationalist to apply this technology in educational practice. The new theoretical framework is highly recommended to be evaluated.

To apply the social networking site successfully in Saudi Arabia we should take into account several issues and apply some strategies. This framework for design highlights three main issues: students, tutors, and activities. It underlines the importance of **educating students** and preparing them. Students should be prepared with training sessions on how to use SNSs in an educational context. It is important to highlight that the students need to be prepared with some new knowledge age skills. The students should be guided in how to criticise, reflect and think together, as well as how to discuss in an educational context: i.e. well-constructed, relevant questions, inviting others to discuss, challenging other students' work, asking for clarification, explaining and expanding others' contributions.

Figure 9.1: Principles for applying the social networking.



The new role of **tutors** includes assisting and encouraging students to interact and use this technology to support their learning. Tutors should be prepared in this new role by training them to supervise, facilitate and guide their students in their learning with social networking.

I suggest that the **course activities** should allow reflection and encourage students to develop their skills e.g. critical thinking and self-learning. The activities should present material as problems to be solved, which allow consideration of multiple solutions. The activities should encourage thinking together, and collaborative learning and they should open spaces for dialogue and discussion. The students should be encouraged to maintain their blogs as e-document learning. The activities should be designed and related to the course aims and students' needs and not restricted to the principles which the study has presented.

9.3 Recommendations

This study indicates the undeniable support to learning aims and the needs of the net generation of students that social networking provides in higher education. However, it is not easy to embed this technology in institutional practice unless some pre-requisites are in place.

The undeniable advantage of social networking sites supporting new knowledge age skills in higher education will hopefully encourage its implementation in all universities. In addition, as discussed in Chapter 2, policymakers have proposed new strategies which aim for students' acquisition of new knowledge age skills. Higher educational institutions in the K.S.A. are planning to introduce a foundation year with these aims in view; however, this one year would not be enough to help students acquire these knowledge age skills. These plans

should be applied to the following years, as well as at all earlier educational stages (primary and high school) and guide the teachers to emphasise these skills in everyday learning. The challenge is to utilise these skills in students' education. The new plans should focus on improving and developing students' new knowledge age skills, such as critical thinking and problem solving, communication, collaboration, creativity and innovation, and thinking together approaches. Moreover, there are plans to develop students' formal writing skills. These plans should be continuous and consider the students, teacher training and classroom curricula.

In the present study, I have found that, although the social networking site developed and supported new knowledge age skills, the students needed to acquire more skills than these, notably, the critical evaluation of content. The study also showed that more educational support in digital literacy is urgently needed. Consequently, the policy maker should develop plans to prepare students with digital literacy as well as new knowledge age skills. Digital literacy was defined by the JISC Learning Literacies for a Digital Age (LLiDA) Project as "*practices of effective learning in contexts dominated by digital forms of information*" (Beetham et al., 2009 cited in Sharpe et al., 2010, p157).

In this study, I found that some students had developed many skills by using Web 2.0 applications informally, whereas others had not. In this respect, careful consideration should be taken by educators; it is important to develop strategies to eliminate the gap between students' skills. Without specific care being taken to address these issues, some students will fall behind with the technology and, as a result, there will be inequalities in the education system. Additionally, the internet connection and browser speed are not available at the same level to all students. Therefore the educational institution should take this into account by

opening its resources and allowing access to all students on campus. The Government should plan to ensure internet access for all students. Interestingly, an earlier study identified the gap between the experience and skills of students and of tutors (Collis & Moonen, 2008), which was not apparent in this study. However, it is still worth supporting and developing teachers' skills and experience on social networking sites.

The social networking site gives students space to be free to interact, to contribute and to modify content, as well as to read existing content. However, unless the students have the skills needed to interact and contribute, they will not ultimately benefit from this space. So the students should be given an offline session before the course begins to guide them in how to use this space profitably. Moreover, the students should be made aware of their new role in social networking, where the learner participates in the learning process. Students should contribute as well as acquire information. It would, however, be necessary for the students to have some online consensus about privacy, plagiarism, and sharing authorship. In this respect students need help and support in how to identify /evaluate information on social networking sites.

Similarly, the tutors' new role should be introduced and supported by teacher-training and continuing professional development programs. The tutors should have the skills to facilitate and support their students' interaction and discussion in online environments. Tutors should guide the students in how to use this social networking in education. I suggest these programs should aim to identify and spread best practice in the use of social networking sites in pedagogy, such as in new ways of assessing the students' interaction and course activities, and in ways of introducing this technique into a course so that it leads to authentic practice in the classroom.

Furthermore, there is a need to revise pedagogical practices in higher education in the light of students' engagement with digital innovation, particularly social networking sites. These all entail changes to the roles of students and teachers, and to assessment and interaction in the classroom.

In Saudi Arabia, the learning system is competitive rather than collaborative, while the curriculum inhibits the development of the knowledge and skills that are needed in the new knowledge age. The curriculum should promote problem-solving, collaboration and other necessary skills. The curriculum needs to facilitate the affordances of SNSs and the new skills which can be developed from their use.

There is evidence from this study that assessment of the interaction on a social networking site has an impact on students' engagement. A clear statement should be presented to students of what is expected of them and to what standard, and new assessment approaches should be implemented to emphasise critical engagement and reflection. The students' contributions and interactions should be assessed as part of the overall course assessment.

The pedagogical affordances of the social networking site, e.g. reflection and collaboration, need to involve development of teaching and learning processes that fulfil these affordances and support learning. For example, a pedagogical approach should be adopted where students create some of their own learning resources.

Consequently, innovation of the social networking site in any course should not be driven just by the technology; the course designer should take into consideration the students' needs, the course content, pedagogical practice, as

well as the affordances of the technology. The focus should be on what the digital native students want to learn, rather than on the technology.

It is worthy of mention that the principles which I suggest in this study are only guidelines for designing a course, they should not be restrictive. The need for some structure and direction for group work is evident in the findings of this study. The need for discussion and interaction on the social networking site in the educational context should be made clear to the students. It may be advisable to divide students into small groups to keep the discussions on track, to give them goals to reach, to train them, to explore their expectations and to guide them to reach the same goal. This suggestion concurs with Harmelen's (2008) argument that it is not desirable to institute unplanned group work, in light of the finding that Web 2.0 applications enhance group work.

9.4 Suggestions for further research

While exploring the answers to the research questions that the study outlined, some new questions were raised that might need to be pursued further. I present some of them here in order to open up new research areas.

As the methodology approach utilised in this study was a case study inherent to Design Based research, the theoretical framework that was its outcome needed more evaluation and revision. However, it was found that social networking sites do support learners in higher education.

The social networking site has valuable advantages for students in higher education. However, the question of whether there are any features of social networking that give it advantages over other ICT application/software should be the subject of further study. In addition, to implement a course using a social networking site that affords LMS within the design would be recommended.

Some of the students' posts were in Arabic, and that not only enriched the course materials but they could be used to increase the amount of digital Arabic contents on the internet. While the students are contributing in the social network they will be creating content related to the subject of the course, in Arabic. The proportion of digital contents in Arabic does not exceed 0.3% of global digital contents for other languages (King Abdullah Initiative for Arabic Content, 2009). As we live in Arabic-speaking states we need to enrich the Arabic contents of the internet. These contributions from students should be dealt with in such a way as to enrich these Arabic contents. Questions needing more investigation and research include: How can one extract from student posts to enrich Arabic content? How can social networking help to enrich the Arabic content? How can tutors supervise these contributions to ensure their quality and keep them up to an acceptable standard?

More research is needed to provide insight into the virtual identities of the new generation and the discussion threads that could be effective in pedagogical practice, specifically in Saudi Arabia. Where the students use the internet extensively they have their virtual identity; they are used to interacting on Facebook and Twitter. I suggest further research on how to encourage the students to use their student identity in online learning.

9.5 Challenges and limitations

The lack of literature in the context of this study was one of the challenges I encountered. To the best of my knowledge, only a few studies on Web 2.0 applications, particularly social networking sites, have been conducted in Saudi Arabia. Therefore I based my literature review on research in other contexts. Another difficulty I faced was the rapid publication of research in the ICT field. Applying Design Based research in my study, with the constraints of time and

lack of earlier research, was challenging. However I coped with this challenge by evaluating an existing course integrated with a social networking site from a different context. Based on this first half iteration I constructed the second iteration.

Moreover, to the best of my knowledge, very few studies have adopted a qualitative approach in the Saudi context. Thus the use of qualitative interviews to elicit the experiences of the participants in this study was new, leading to participants having some difficulty in understanding the research. For example, they were confused over the meaning of the Consent Form. One student told me that we had forced them to write in The Hive, which contrasts with the wording of the Consent Form we gave them. She explained her point of view in the interview by complaining that in the introductory session I had explained that participation in the study was voluntary. But after a while there was a grading scheme for contributing to The Hive and there were marked activities that had to be posted to The Hive.

More challenging was the students' mother tongue of Arabic. Sometimes they used English to post, as they were free to use English or Arabic, and sometimes they used a dialect language. Consequently, some quotes needed to be translated into English. From my point of view, some translations may lose their original meaning and my concern was to retain this meaning. As a result, the collected data was in both languages and the data was analysed in its original quote. So I used the original data during data collection and analysis to keep the participants' meaning in the original quote and then translated the quotes when reporting the findings in the thesis (See Appendix 12 for the equivalent quotes in Arabic).

The limitations of Nvivo software should be highlighted here; it does not have the facility to import the posted messages on the social networking site or other software, so I spent a long time transferring the data to Nvivo. Also it does not support Arabic which consumed a lot of effort and time as most of the collected data was in Arabic.

I acknowledge the use of stimulated recall and how I benefited from it. One of the valuable benefits was expanding and validating data from the participants. For example, one of my interviewees complained that they did not use The Hive in the group work and there was no value in using it in the collaborative work:

Participant: We did not use The Hive in our work. We met face to face and we used our mobile phones also. After we finished our work we posted some little posts to print out to demonstrate that we had used The Hive in our collaborative work.

Researcher: Can you enter your group? You said you use The Hive only for grading! What about these comments? Are these spontaneous? (Quote, 9.1)

But there was a thread of discussions and posts, so I showed her the comments that demonstrated their collaboration on The Hive and asked her to comment on that. She replied:

To be honest, we said instead of each one sending her translated word document and the second comment and send it and so on... Post it on The Hive and comment on it, which will be better in front of all instead of each time you send ...yes, this right. (Quote 9.1)

As I mentioned in Chapter 4, the stimulated recall technique was used if needed in the interview and it should be acknowledged.

9.6 Summary of the main themes of the thesis

This study has revealed the pedagogical affordances of a social networking site in higher education as perceived by students and tutors. These may be listed as: Reflection, Stimulation, Learner-created content, Collaboration, and Online Discussion. These affordances of the social networking site were elicited by applying it in two different contexts: the United Kingdom and Saudi Arabia. While the first study, in the UK, was applied in a theoretical HE course, the second study, in the KSA, was applied in a practical HE course; however, the affordances of the social networking site were found to be the same in both phases. Moreover, the affordances perceived were the same despite the difference in cultural context of the participants. Significantly, the SNS innovation in Saudi Arabia (The Hive) succeeded in delivering some of the MoHE's aims as well as in supporting the new knowledge age skills. It is also anticipated that SNSs strongly support HE strategies and fulfil the needs of 'digital native' students. In my view, social networking sites with their pedagogical affordances, as found in this study, have the potential to induce radical change in the education system.

An additional benefit was that the social networking site could be used without any further cost or change in computer infrastructure. It gave the students their own space to be creative and to collaborate, as well as delivering course materials and instructions. However, some students did not interact or post on the social networking site but they benefited from other students' posts and discussion. Thus this environment improved the learning of 'silent students' as well as those who were more active and expressive, as demonstrated from the study findings.

Furthermore, the tutor can shape the affordances of the social networking site, which depend on the nature of the activities to be done. For example, I found in this study that in Exeter the main stimulus to students' reflection was the issue raised by the tutor at the end of each lecture, who asked students to reflect on it in The Hive, taking advantage of the space afforded on the social networking site for reflection. In contrast, the tutors in KSU emphasised the use of The Hive in group work. The KSU tutors also perceived the LMS as affordances of the social networking site which did not work well.

The principles established in this study can act as guidelines to designing further courses incorporating social networking sites. These principles were obtained from both a theoretical subject (Phase One) and a practical subject (Phase Two). Nevertheless, future courses should not be obliged to follow these principles exactly; some of these principles would need to be emphasised more than others, depending on the students' skills and needs, and the activities of the course.

Appendices

Appendix 1

The public universities and the founded dates

University	Founded	City	Website
King Saud University	1957	Riyadh	www.ksu.edu.sa
Islamic University of Madinah	1961	Madinah	www.iu.edu.sa
King Abdulaziz University	1967	Jeddah	www.kau.edu.sa
Imam University	1974	Riyadh	www.imamu.edu.sa
King Fahad University	1975	Dahran	www.kfupm.edu.sa
King Faisal University	1975	Hasa	www.kfu.edu.sa
Umm Al Qura University	1979	Makkah	www.uqu.edu.sa
King Khalid University	1998	Abha	www.kku.edu.sa
Taif University	2004	Taif	www.tu.edu.sa
Taibah University	2005	Madinah	www.iu.edu.sa
Qassim University	2005	Qassim	www.qu.edu.sa
Jouf University	2005	Jouf	www.ju.edu.sa
Jazan University	2005	Jazan	www.jasanu.edu.sa
University of King Saud for Health	2005	Riyadh	www.ksauhs.edu.sa
University of Hail	2006	Hail	www.uoh.edu.sa
Al-Baha University	2006	AL-baha	www.bu.edu.sa
Najran University	2006	Najran	www.nu.edu.sa
Tabuk University	2006	Tabuk	www.ut.edu.sa
Alhudod Alshamalia University	2007	Arar	www.nbu.edu.sa
Dammam University	2009	Dammam	
Al-Kharj University	2009	Al-Kharj	
Al-Mujma University	2009	Al-Mujma	
Sugra University	2009	Sugra	

Appendix 2

The specific objectives, implementation policies and projects regarding ICT in education and training (MoCT 2005).

Specific Objective (15): Employment of ICT in supporting education and training and adoption of e-learning	
Implementation Policies	Projects
Establishment of a reference agency for e-learning.	Setting up a national centre for e-learning.
Development of educational curricula so as to include e-learning and increase the interactive digital content.	Employment of ICT and the Internet in supporting general education.
Specific Objective (16): Preparation of all people involved in the education process (teachers, administrators, students) for the use of ICT in education.	
Implementation Policies	Projects
Prepare students and education-related staff for the use of ICT.	Introduction of ICT subjects in school curricula. Train education-related staff on the use of ICT.
Consider knowledge of ICT basics a factor in screening for admission or promotion in educational institutes.	Issuing regulations for appointment, admission and promotion requirements for teachers.
Specific Objective (17): Development of the infrastructure in educational institutes.	
Implementation Policies	Projects
Raise the level of electronic readiness in all educational institutions.	Dissemination of ICT systems in all educational institutions.
Facilitate access to information and libraries.	Providing digital libraries.
Secure the necessary funding to support ICT projects in education and training.	Provide the necessary budgetary allocations for ICT projects in education and training.

Appendix 3



Graduate School of Education

CONSENT FORM

Amal Al-Ibrahim PhD research project on the pedagogical affordances of Social networking Site the Hive.

I have been fully informed about the aims and purposes of the project.

I understand that:

There is no compulsion for me to participate in this research project and, if I do choose to participate, I may at any stage withdraw my participation.

I have the right to refuse permission for the publication of any information about me.

Any information which I give will be used solely for the purposes of this research project, which may include publications.

If applicable, the information which I give may be shared between any of the other researcher(s) participating in this project in an anonymised form.

All information I give will be treated as confidential.

The researcher(s) will make every effort to preserve my anonymity.

.....

(Signature of participant)

.....

(Date)

.....

(Printed name of participant)

If you have any concerns about the project that you would like to discuss, please contact me:

amabdull@ksu.edu.sa

OR

aaa224@exeter.ac.uk

Data Protection Act: The University of Exeter is a data collector and is registered with the Office of the Data Protection Commissioner as required to do under the Data Protection Act 1998. The information you provide will be used for research purposes and will be processed in accordance with the University's registration and current data protection legislation. Data will be confidential to the researcher(s) and will not be disclosed to any unauthorised third parties without further agreement by the participant. Reports based on the data will be in anonymised form.

Appendix 4

Field notes (Student form)

Interviewee name:

Date/Time

Interviewee ID:

email:

Theme	Suggestion questions	Notes
Social Networking Site environment in learning	<ul style="list-style-type: none"> After using The Hive in your course, how can you define this educational environment? The Hive - what is it? 	
	<ul style="list-style-type: none"> Is The Hive a flexible environment? What about its use in learning? 	
The student perspective on The Hive	<ul style="list-style-type: none"> What actions do you like most: adding to your blog? Commenting on blogs? Contributing to discussions? Other? 	
	<ul style="list-style-type: none"> When do you browse The Hive and post on the Hive? If you post less than the minimum required by the course, when and why do you feel prompted to browse or post? 	
	<ul style="list-style-type: none"> What do you expect from The Hive? Does it meet these expectations? 	
	<ul style="list-style-type: none"> Have you found any new ways to use (afford from) The Hive in this course? 	
The Hive's Attractiveness	<ul style="list-style-type: none"> What are the most attractive/unattractive aspects of The Hive for you? 	
	<ul style="list-style-type: none"> Do you feel The Hive helps you in this course? In what way? Or Do you think that it takes up time and is not helpful? How? 	
Reading the posted blogs	<ul style="list-style-type: none"> Do you read the posted messages in the course area and, if so, is this useful? Do you benefit from the other posts? How many blogs do you read? Is this useful to you? 	
Interaction with other students	<ul style="list-style-type: none"> Who do you interact with most? Did you have any interaction with this/these student(s) before the course? Do you meet and talk outside of the course as a result of the message interaction in The Hive? 	

Appendix 5

Field notes (Teacher form)

Interviewee name:

Date/Time

Interviewee ID:

email:

Theme	Suggestion questions	Notes
Social networking site environment in teaching	<ul style="list-style-type: none"> Do you feel The Hive has helped you in this course? In what way? Or did it increase your workload? How? 	
	<ul style="list-style-type: none"> When you designed The Hive, what does it afford for? 	
	<ul style="list-style-type: none"> What is the role of the teacher in this environment? 	
	<ul style="list-style-type: none"> What are the criteria for assessment? 	
The teacher's perspective on The Hive	<ul style="list-style-type: none"> What actions do you like most: adding to your blog? Commenting on blogs? Contributing to discussions? Other? 	
	<ul style="list-style-type: none"> When do you need to contribute to students on The Hive? 	
	<ul style="list-style-type: none"> When do you browse The Hive and post on The Hive? When and why do you feel prompted to browse or post? 	
	<ul style="list-style-type: none"> When do you browse The Hive and post on The Hive? When and why do you feel prompted to browse or post? 	
	<ul style="list-style-type: none"> What do you expect from The Hive? Does it meet these expectations? 	
The Hive's Attractiveness	<ul style="list-style-type: none"> Have you found any new ways to use The Hive? 	
	<ul style="list-style-type: none"> What are the most attractive/unattractive aspects of The Hive for you? 	
	<ul style="list-style-type: none"> Do you see students' engagement/ interaction in this course differing from last year? How? 	
Reflection on the lectures	<ul style="list-style-type: none"> What is the aim of this reflection? How is this aim achieved? 	
Writing assignments	<ul style="list-style-type: none"> What is the aim of writing student assignments in The Hive? How is this aim achieved? 	

Appendix 6

Field notes (Student form)

Interviewee name:

Date/Time

Interviewee ID:

email:

Research questions	Theme	Suggestion questions	Notes
How can the affordances of social networking site be conceptualised? students perceived	Social networking site environment in learning	<ul style="list-style-type: none"> After using The Hive in your course, how can you define this educational environment? The Hive - what is it? 	ماهي استخدامات الهايف هل استفدتي من الواجبات على الهايف وكيف؟
		<ul style="list-style-type: none"> Is The Hive a flexible environment? What about its use in learning? 	
	The student perspective on The Hive	<ul style="list-style-type: none"> What actions do you like most: adding to your blog? Commenting on blogs? Contributing to discussions? Other? 	
		<ul style="list-style-type: none"> When do you browse The Hive and post on the Hive? If you post less than the minimum required by the course, when and why do you feel prompted to browse or post? 	
		<ul style="list-style-type: none"> What do you expect from The Hive? Does it meet these expectations? 	
<ul style="list-style-type: none"> Have you found any new ways to use (afford from) The Hive in this course? 			
the real added value, in higher	The Hive's	<ul style="list-style-type: none"> What are the most attractive/unattractive aspects of The Hive for you? 	غيرها عن جديد اضافة الهايف؟ وهل من الفائدة ماهي

education	Attractiveness	<ul style="list-style-type: none"> • Do you feel The Hive helps you in this course? In what way? Or • Do you think that it takes up time and is not helpful? How? 	البرامج من
	Reading the posted blogs	<ul style="list-style-type: none"> • Do you read the posted messages in the course area and, if so, is this useful? Do you benefit from the other posts? How many blogs do you read? Is this useful to you? What the scheme you used to read others blogs? 	وكيف؟ الجماعي؟ العمل في ساعدت هل
	Interaction with other students	<ul style="list-style-type: none"> • Who do you interact with most? Did you have any interaction with this/these student(s) before the course? Do you meet and talk outside of the course as a result of the message interaction in The Hive? 	
What factors might impede the use of social networking in higher education in Saudi Arabia?		<ul style="list-style-type: none"> • What is the problem: Preperation to discussion. Course contents(stress in the course, the elgg enviroments) Assesments. What about your contributions in the Hive?why you did not contribute will? 	الهاييف؟ في تكتبين لا تجعلك التي المعوقات ماهي

Appendix 7

(Teacher form)

Interviewee name:

Date/Time

Interviewee ID:

email:

Research questions	Theme	Suggestion questions	Notes
How can the affordances of social networking site be conceptualised? Teacher perceived	Social networking site environment in teaching	<ul style="list-style-type: none"> Do you feel The Hive has helped you in this course? In what way? Or did it increase your workload? How? 	
		<ul style="list-style-type: none"> When you designed The Hive, what does it affords for? 	
		<ul style="list-style-type: none"> What is the role of the teacher in this environment? 	
		<ul style="list-style-type: none"> What are the criteria for assessment? 	

	The teacher's perspective on The Hive	<ul style="list-style-type: none"> • What actions do you like most: adding to your blog? Commenting on blogs? Contributing to discussions? Other? 	
		<ul style="list-style-type: none"> • When do you need to contribute to students on The Hive? 	
		<ul style="list-style-type: none"> • When do you browse The Hive and post on The Hive? When and why do you feel prompted to browse or post? 	
		<ul style="list-style-type: none"> • When do you browse The Hive and post on The Hive? When and why do you feel prompted to browse or post? 	
		<ul style="list-style-type: none"> • What do you expect from The Hive? Does it meet these expectations? 	
the real added value, in higher education	The Hive's Attractiveness	<ul style="list-style-type: none"> • Have you found any new ways to use The Hive? 	
		<ul style="list-style-type: none"> • What are the most attractive/unattractive aspects of The Hive for you? 	
		<ul style="list-style-type: none"> • Do you see students' engagement/ interaction in this course differing from last year? How? 	
What factors might impede the use of social networking in higher education in Saudi Arabia?	Reflection on the lectures	<ul style="list-style-type: none"> • What is the aim of this reflection? How is this aim achieved? 	
	Writing assignments	<ul style="list-style-type: none"> • What is the aim of writing student assignments in The Hive? How is this aim achieved? 	

Appendix 8

Screen shot from NVivo illustrate the free nodes codes.

The screenshot displays the NVivo interface with the 'Free Nodes' view selected. The left sidebar shows a tree structure of nodes, and the main window displays a table of node details. The table includes columns for Name, Sources, References, Created On, Created By, Modified On, and Modified By. The data is as follows:

Name	Sources	References	Created On	Created By	Modified On	Modified By
agree comments	12	17	11/29/2010 14:51	RSU	12/16/2010 11:39	RSU
announcement	10	10	3/8/2011 15:12	RSU	3/10/2011 11:13	RSU
answer questions	6	17	12/1/2010 12:32	RSU	3/10/2011 13:57	RSU
arrang group work	1	3	11/29/2010 14:23	RSU	11/29/2010 14:24	RSU
arrange face to face discussion	1	1	3/9/2011 12:06	RSU	3/9/2011 12:06	RSU
arrange lecture time	1	1	3/10/2011 11:13	RSU	3/10/2011 11:13	RSU
arrange Vote	1	1	3/10/2011 11:30	RSU	3/10/2011 11:30	RSU
ask questions	12	37	12/1/2010 12:31	RSU	3/9/2011 12:02	RSU
asking & answering	1	8	2/14/2011 13:56	RSU	2/15/2011 14:57	RSU
Benefit from reading others posted an	1	3	2/14/2011 15:01	RSU	2/15/2011 14:41	RSU
can't comment well	9	15	11/8/2010 13:11	RSU	3/10/2011 15:24	RSU
courtesies	48	191	11/10/2010 14:08	RSU	3/10/2011 15:44	RSU
describe the project	1	1	3/10/2011 13:56	RSU	3/10/2011 13:56	RSU
encourage the students	14	14	11/10/2010 14:17	RSU	5/20/2011 12:07	RSU
enrich course materials	32	56	11/8/2010 14:57	RSU	5/20/2011 12:03	RSU
enrich course materials(tutor)	3	6	3/7/2011 16:37	RSU	3/8/2011 14:49	RSU
facilitate group work	1	24	2/14/2011 13:39	RSU	2/15/2011 14:54	RSU
facilitate the communication	1	4	3/2/2011 13:56	RSU	3/2/2011 13:58	RSU
formal debate	1	1	11/11/2010 12:09	RSU	11/11/2010 12:09	RSU
learning instruction	1	1	3/7/2011 14:59	RSU	3/7/2011 14:59	RSU
linked with other courses	1	2	11/11/2010 13:22	RSU	11/11/2010 13:22	RSU
marking criteria	1	1	3/7/2011 14:44	RSU	3/7/2011 14:44	RSU
negative attitude	1	2	2/14/2011 14:09	RSU	2/14/2011 14:49	RSU
new issues	14	20	11/8/2010 13:21	RSU	3/10/2011 15:35	RSU
personal comments	20	22	11/8/2010 14:12	RSU	3/10/2011 15:34	RSU
Positive attitude	5	26	2/14/2011 13:49	RSU	3/10/2011 15:44	RSU
present thier work	1	1	11/24/2010 13:10	RSU	11/24/2010 13:10	RSU
reflecting their learning	2	2	11/25/2010 15:14	RSU	3/10/2011 15:44	RSU
repost their assignements	3	14	3/7/2011 15:31	RSU	5/20/2011 12:01	RSU
sharing	1	1	2/14/2011 14:57	RSU	2/14/2011 14:57	RSU
sharing articals	6	9	11/9/2010 15:15	RSU	3/8/2011 15:16	RSU
sharing ideas	1	4	2/14/2011 13:50	RSU	2/15/2011 14:55	RSU
sharing their feeling	11	63	11/10/2010 13:29	RSU	3/8/2011 15:41	RSU
sharing their learning	7	12	11/11/2010 12:16	RSU	3/10/2011 15:47	RSU
sharing their reading	16	19	11/10/2010 14:45	RSU	3/2/2011 14:59	RSU
sharing their thinking	3	3	11/29/2010 11:26	RSU	12/15/2010 14:39	RSU
sharing their work	2	2	11/29/2010 14:37	RSU	12/1/2010 17:37	RSU
sharing videos	19	27	11/10/2010 14:02	RSU	3/10/2011 15:44	RSU
sharing websites	21	32	11/10/2010 14:18	RSU	3/10/2011 15:46	RSU

Appendix 9

Screen shot from NVivo illustrate the tree nodes codes.

The screenshot displays the NVivo interface with a tree view on the left and a data table on the right. The tree view shows a hierarchy of nodes, including 'Practical activity', 'Engagements- interactive', 'Theoretical activities', and 'Establishment'. The data table provides quantitative information for each node, including the number of sources, references, creation and modification dates, and the user who created or modified the node.

Name	Sources	References	Created On	Created By	Modified On	Modified By
Discussion	0	0	3/23/2011 14:50	RSU	3/23/2011 14:50	RSU
Practical activity	0	0	3/23/2011 14:51	RSU	3/23/2011 15:43	RSU
Engagements- interactive	0	0	3/23/2011 14:59	RSU	3/23/2011 15:21	RSU
Offering Solution	0	0	3/23/2011 15:02	RSU	3/23/2011 16:51	RSU
Explain and clarify their wor	1	9	3/23/2011 15:04	RSU	3/25/2011 11:51	RSU
Explain soultions	1	17	3/23/2011 15:01	RSU	3/25/2011 11:49	RSU
Give own Sugestion	1	20	3/23/2011 15:04	RSU	3/25/2011 11:56	RSU
Given own experiences	1	16	3/23/2011 15:04	RSU	3/24/2011 14:54	RSU
Offering up with new Ideas	1	7	3/23/2011 15:03	RSU	3/25/2011 11:52	RSU
Question other work	1	8	3/23/2011 15:03	RSU	3/25/2011 11:54	RSU
Establishment	0	0	3/23/2011 14:58	RSU	3/23/2011 15:43	RSU
Asking for advice	1	25	3/23/2011 15:07	RSU	3/24/2011 14:52	RSU
Establish ground rules	1	1	3/23/2011 16:13	RSU	3/23/2011 16:15	RSU
Explores difficulties	1	11	3/23/2011 15:07	RSU	3/25/2011 11:56	RSU
Identifying and describe probl	1	41	3/23/2011 15:06	RSU	3/25/2011 11:53	RSU
Theoretical activities	1	1	3/23/2011 14:50	RSU	6/15/2011 17:54	RSU
Engagements- interactive	0	0	3/23/2011 15:00	RSU	3/23/2011 15:21	RSU
Critiscise others Ideas	4	12	3/23/2011 15:13	RSU	6/14/2011 19:37	RSU
Discussing and expanding id	5	15	3/23/2011 15:13	RSU	6/14/2011 16:59	RSU
Evaluate and review others w	4	14	3/23/2011 15:12	RSU	5/4/2011 12:40	RSU
Proposing actions based on i	1	1	3/23/2011 15:14	RSU	5/3/2011 15:56	RSU
Questioning others work	2	5	3/23/2011 15:15	RSU	5/3/2011 16:07	RSU
Revised others work	4	13	3/23/2011 15:10	RSU	5/4/2011 12:49	RSU
Summarizing previous contrib	4	6	3/23/2011 15:15	RSU	5/4/2011 12:39	RSU
Establishment	0	0	3/23/2011 15:00	RSU	3/23/2011 15:44	RSU
Asking challenging questions	1	2	3/23/2011 15:16	RSU	5/3/2011 16:10	RSU
Asking for advice	3	14	3/23/2011 15:17	RSU	5/3/2011 17:00	RSU
Establish ground rules	3	5	3/23/2011 15:19	RSU	5/4/2011 12:37	RSU
Exploring and supporting issu	3	5	3/23/2011 15:17	RSU	5/4/2011 12:49	RSU
Given own opininos and point	4	16	3/23/2011 15:18	RSU	5/4/2011 12:45	RSU
Inviting students to contribute	4	12	3/23/2011 15:19	RSU	5/4/2011 13:19	RSU
Offering up with new ideas	1	1	3/23/2011 15:17	RSU	5/4/2011 12:32	RSU
impeded	0	0	6/13/2011 12:31	RSU	6/13/2011 12:31	RSU
cultural Factors	0	0	6/13/2011 12:36	RSU	6/13/2011 12:36	RSU

Appendix 10

Screen shot from NVivo illustrate the transcript of one of the interview

The screenshot shows the NVivo software interface with the following components:

- Menu Bar:** File, Edit, View, Go, Project, Links, Code, Tools, Window, Help.
- Toolbar:** Standard software navigation and editing tools.
- Sources Panel (Left):** Lists various data sources including Internals (group bookmark, group discussion, group pages, group video, students reflection on gro, students interviews, the student's blog, translation-created groups, tutors interview), Externals, Memos, and Search Folders (All Sources, All Sources Not Embedded).
- Search Bar:** Located at the top, with 'Look for:' and 'Search In' dropdowns. The search term is 'students intervie'.
- students interviews Table:**

Name	Nodes	References	Created On	Created By	Modified On	Modified By
WS320049	15	18	6/9/2011 16:26	RSU	6/15/2011 19:04	RSU
WS320050	0	0	6/9/2011 16:27	RSU	6/15/2011 19:04	RSU
WS320053	10	13	6/9/2011 16:27	RSU	6/16/2011 13:02	RSU
- Transcript Table:**

Timespan	Content	speaker
0:00.0 - 0:16.9	ماهي استخداماتك للهاتف	الباحثه
0:16.9 - 1:03.6	انا بشكل عام دائما استخدم البيانات الاجتماعيه في التحليل، لكن الهاتف ما أحسن أنه موفض ليس كبيئته اجتماعية ولكن كأختيار موقع مكان مره من الموقع، كثير اشياء ما أحسن انها أدت الخرض التي أحدا نبيه، لكن أنا استعدت من الهاتف كاتراكتف بين البنات والاسنادات أحسن أنه أفضل من لو أنه بلو عادي، كان الهاتف أفضل ولكن كان هناك خيارات اكثر من الهاتف.	المشتركة
1:03.6 - 1:07.1	طيب انتي ومن استخدمتي الهاتف بصورته الحاليه	الباحثه
1:07.1 - 1:28.1	استخدمت البلق والغروب التي سويتهاها لترجمة كنا نستخدم رسائل الهاتف للتواصل بين الاسنادات وبين الطالبات. لكن اني أتزل بلو كامل عكشان أشرح كلمنين ما أدري مهوب خفيف زي التويتر أحسن ان فيه تكلف، وهذا ما يمنح اني استخدمته في البدايه، لما بدينا نستخدم	المشتركة
1:28.1 - 3:06.2	قلت لصديقاتي وكانوا بالجامعه يسألون كيف أسوي كذا قلت لهم بالهاتف عكشان أحسن من أشرح لكل وحده على حده قلت بأنزل خبرتي ع لي الهاتف، وأصير كل شيء أطبق وأشرح لك كيف سويته، فغلا صرت أشرح لهم بالهاتف	المشتركة
3:06.2 - 3:35.8	أها زي ماأنت شاريفه في موضوعك هذا اي فيه 20 تطبيق وصلتك، بس التي مستخريته أنه واحد فقط أصاف شي جديد بس، والباقي كان شكر	الباحثه
3:35.8 - 4:09.4	أحسن أكبر فائده هي أستفاده مجموعه من الطالبات من بوست واحد انا سويته في البلق حفي وهذا ميزه البيئه الاجتماعيه. حتى صديقاتي لما أهزل لهم فيه موقع، يقولون ايه فاضين ندخله، ولما أحطه لهم ويشوفونه أني منحسه عرفت انهم جربوها، خصوصا أني كنت دارم افهم مايبستخدمون اي اءي لانه.....	المشتركة
4:00.6 - 4:40.6	... بداية التسميتر كانوا بسخدمونه الحين ولا وحده تستخدمه فانا حسبته انه تطور شوي، أفهمهم وأخذوا المعلومه بشكل جيد	المشتركة
4:40.6 - 5:08.1	وفيه بوست ثاني	

Appendix 11

Certificate of Ethical Approval Form

UG STUDENT
RESEARCH/CASEWORK



Graduate School of Education

Certificate of ethical research/casework approval

UG STUDENT RESEARCH/CASEWORK/FIELDWORK/CASEWORK AND DISSERTATION

You will need to complete this certificate when you undertake a piece of research/casework

To activate this certificate you need to first sign it yourself, then have it signed by your Tutor.

For further information on ethical educational research/casework access the guidelines on the BERA web site: <http://www.bera.ac.uk/publications/guides.php> and view the School's statement in your handbooks.

READ THIS FORM CAREFULLY AND THEN COMPLETE IT ON YOUR COMPUTER
(the form will expand to contain the text you enter).
DO NOT COMPLETE BY HAND

Your name: Amal AL-Ibrahim

Your Student Number: 580008111

Degree/Programme of Study: Doctorate in Educational, Information and Communication Technology
ICT

Your Tutor's name: Rupert Wegerif, Judith Kleine-Staarman

Title of your research/casework:

The pedagogical affordances of social networking web technology in higher education

My research will focus on investigating the potential learning achievement by using social networking applications (e.g. Face book, MySpace and Linked-in) in higher education. This study will explore the pedagogical affordances of using social networking web technology in higher education and innovations as a framework course for undergraduate students. This study will consider affordances theory, social constructivism theory and activity theory in designing the course. This study will be applied as a case study for one course in higher education in King Saud University in Kingdom of Saudi Arabia. First, I will conduct a pilot study in Exeter University using the Hive (social network) with undergraduate students. Then, I will collect data through Hive's messages observations, and teachers' and students' interviews. The data messages (after the course is available) will then be organized and analyzed to explore the impact of interaction via the Hive. Next, this information will be used in the main study in King Saud University to innovate a course that teaches female students the use of social networking technology.

Who are the participants in this research/casework?

Phase one:

The sample will be five undergraduate students in Exeter University, UK. This sample will be chosen purposely to cover the different backgrounds of the participants.

Phase two:

The main participants will be undergraduate students. All these are female and their ethnic background is Saudi. They are students in King Saud University in Riyadh, Saudi Arabia. The sample size for the main study in Saudi Arabia will be 20 undergraduate students and their teacher. The students will volunteer to engage in the research. The researcher will select participants in each group carefully, and conduct introductory sessions to introduce the technology to the students and the teacher. These will familiarise the participants with the technology and identify their backgrounds.

Give details of how you would address the following ethical issues:

- Informed consent, anonymity and confidentiality (**with special reference to any children or those with special needs**).

I will be following the BERA (2004) ethical guidelines. Issues regarding respect, confidentiality, informed consent will be carefully considered. It will be essential to obtain informed consent form participants; ensure that they are aware of what that will involve.

Participants will be reminded that they have the right to withdraw from the research at any given time.

- **Harm, detriment or unreasonable stress during data collection.**

The data will be obtained through semi-structured interviews and observing messages entry. The interviews will be recorded and transcribed. This will then be coded thematically. In phase two a questionnaire will be used to sample the attitude of the students towards ICT. This questionnaire will involve ratings scales, given options and allow for fuller responses if required. Also, I will operate a balance of the principles of not to do harm and right to know for my participants.

- **Storage of confidential material** (videos/recorded interviews/photos/completed questionnaires).

The data in this study (questionnaires, audio recordings, observation records, and interview data) will be securely stored in a locked and secure place. Electronic information in NVivo program will only be accessed by the researcher. Electronic information will also be stored on a secure system. It will be destroyed when it is no longer required.

This form should now be printed out, **signed by you below and sent to your Tutor to sign. This certificate will be returned to you to be included at the back of your assignment/dissertation.**

Note: you should not commence your research/casework until you have the signature of your/tutor.

I hereby certify that I will abide by the details given above and that I undertake in my assignment/dissertation to respect the dignity and privacy of those participating in this research/casework.

Student Number: 580008111  **date:** 10th July 2010

Tutor's signature:  **date:** 19th July 2010

N.B. To Tutor: Please ensure that these ethical issues are addressed with your students before they complete this form.

Appendix 12

Quotes in Arabic

(Quote 7.1)

ان داخله على النظام بالميند ست استخدمه كليرنق منجمت سستم ...النظام ما ساعدني في ذلك ولكن حاولت ان اطوعه علشان يساعدني في هذا الشي. كنت احاول اقولبه الى ليرنق مانجمت سستم.

(Quote 7.2)

فادني في اني عرفت تفكير الطالبات كيف ياخذون المادة من البوست الي يكتبونها وعرفت الي متحمسه للماده، وعرفت منحي تفكيرهم

(Quote 7.3)

مثلا انا في نفس البلق حقي انزل استفاده للبنات معين، مثلا فيز انزل على نفس البلق حقي أشياء تفيد البنات أخذنا فرضا .علشان يقدرن يساعدنهم على نفس الفيز

(Quote 7.4)

او المواقع برمجة سواء المادة عن خلفية اي عندي ماكان بداية عن رأيي هذا جدا دقيقة انها الى جدا ممتعه انها على المادة التصميم هو كثييير فيه احترت شي اكثر عام بشكل المشروع عن ككل اما المادة انا الثاني والشي ابدا التصميم عن خلفية ما عندي لأن الديزاين اولا باقي مراحل بأربع الان الى مر جدا، مشروع البسيطة التصاميم افضل النهائية المرحله

التخطيط: الاولى المرحله

(Quote 7.5)

الالكترونية المواقع وبناء لتصميم الشائع المشاكل بحر في قطرات هذه الفانت الاسبوع معمل في ... الاستاذة مع ناقشنا المشاكل هذه ولتجنب :وهما مهمات نقطتين

(Quote 7.6)

استطيع لو الخيال اتمنى نسج من انه ولو الشيء هذا اتمنى بصراحة بالشيء الحاليه واشعر النقل وسائل بدون الشبكة ل خلا من دول لاي الذهابطعاما كان ان وذوق ولمس شم من حقيقيا كان لو كما امامي الذي

(Quote 7.7)

مثلا مشاريعهم، بعض الاحيان ادخل على وبعض الطالبات ينزلون موقع الطالبه من خلال البلق حقها، اشوف وش سوت فيه، وبعض الطالبات ينزلون اشياء تفيدني كثلا في الفيزا اللي بعده روابط افتحها نفس الشيء، بعض البنات ينزلون الاكثفتي مثلا واشوف طريقة كتابتها وأنا احاول اذا اعجبني استفيد منها.

(Quote 7.8)

طبعاً، كنا نقرأ كل البوست وخاصة للاكثفتي، تعطينا توجيهات ونستفيد ممن زميلاتنا.

(Quote 7.9)

حتى مثلا ان البنات يسالون اسئلة استفيد منها ويمكن ما تطرا علي اني اسال د هند لكن لم اشوفها اقول ايه هذا سؤالي... ايه هذا شيء ناقصني

(Quote 7.10)

أسالت البنات فادتني يدخلون على افكار جديدة.

(Quote 7.11)

فيه بنات عرفتهم اسلوبهم خاصه في الانجليزي اعجبني كتاباتهم، فاستفدت منه زي اتبعتهم في اسلوبهم.

(Quote 7.12)

فيه بنات عرفتهم اسلوبهم خاصه في الانجليزي اعجبني كتاباتهم، فاستفدت منه زي اتبعتهم في اسلوبهم.

(Quote 7.13)

في بعض الاكواد ابحث وشويه البحث معطله، فادخل هنا في الهايف،
بنات فاهمين الشئ وحاطينه.

(Quote 7.14)

احس انه اكثر شي عجبني فيه انه فيه تشارك اراء فيه تشارك
اسئله هذا اكثر شي استفدت منه.

(Quote 7.15)

احط بوست في القروب لو بسال سؤال البنات علي طول راح يجابون
اساله واجوبه لاسئلتك اجوبه بتلقين... الطالبات او الاستاذة
فيها مافكرتي.

(Quote 7.16)

كنا نتعامل بالايميلز في المواد الاخرى او وجها لوجه، لكن مع
استخدامنا للهايف احس انه ريحنا كثير يعني ممكن ارسلها ايميل
مايوصلها واحيانا يصير فيه لخبطه انس ارسل لبعض الطالبات لكن
هنا في قروب واحد ارسل للقروب والجميع تقرأ والتعليق واضح
للجميع وكذلك مين شارك والمشاركات السابقة.

(Quote 7.17)

// كان المحادثات في نفس الوقت مافيه مقاطعات أشوف ردها.
أصبحنا على اتصال طوال الوقت

(Quote 7.18)

اجتمعنا مرة اخري على الهايف وقامت كل طالبه بعرض جزئيتها
علينا وقمنا بانتقاها بما نراه مناسب وجدنا ان الهايف متعبه
في تلقي المعلومه فاستخدمنا المسنجر لانه افضل للوقت والجهد
كذلك استخدمنا الهواتف النقاله.

(Quote 7.19)

ليش مغلق وش الفايده من البيئه الاجتماعيه... علشان نستفيد من
بعض، كان ودي اشوف وش سووا في الترجمة، كيف ترجموا، علشان
نستفيد احنا منهم. علشان كذا سوينا قروب مفتوح علشان الي

يبغي يشوف ويستفيد. كيف بدائل نشتغل، يستفيدون من ترجمتنا أو شي اضعناه مثلا ترجمة كلمة هي تسال عنها

هل استفدوا من مجموعات اخرى

ايه فيه قروب احنا استفدنا منه، كان موضوعهم قريب من موضوعنا، بس ما ادري اي قروب نسيت، فتحنا قروبهم وكان القروب مفتوح وكانوا صديقاتنا بالجامعة يعني نعرفهم، وفقحنا واستفدنا من ترجمة بعض الكلمات العلمية، بعض الكلمات ماتترجم حرفيا تترجم بالمعنى ما لقيناها فلقيناها عندهم

(Quote 7.20)

لاشراك الطالبات بالفائده، لو احد مثلا يبي يشوف ماخذ نفس جزئيتنا في الترجمة وحاب يشوف ترجمة كلمة معينة ياخذ نفس وكذلك في النقد، اذا جاء ينقدون مقالنا بيرجعون الى الكلمة. النقاشات الخاصه فينا ويعرفون ليش حاطين هذي الكلمة.

(Quote 7.21)

في القروب ورك سويانا قروب وكان لها خصوصية أكثر لانه فيه بنات نفس الترانسليشن.....وكان القروب مره شي حلو وهذا شي جديد علينا ما سويناه من قبل واحس انه ريحنا في رفع الملفات وفي لان كان بعض بس انه...النقاش مع انه ما كان يدعم العربي الطالبات مأخذين نفس المقالات وكان عليه درجات ممكن البنات ياخذون من شغلنا

(Quote 7.22)

مغلقه: يخافون من السرقة العلمية الموجوده بكثره.

(Quote 7.23)

لان الترجمة بعض المجموعات نفس الموضوع وممكن ياخذون حقنا، وخاضه بعض البنات يسون نسخ.

(Quote 7.24)

لمناقشة النقاش هذا افتح المقرر هذا طالبات من طالبه كل بأسم اي او الفيز هذا بخصوص فيدنا ممكن شي اي المشروع من الأخيرة المرحلة اسهل من الفيز هذا يكون راح الله وانشا هنا حطيه ببالك يدور سؤال المولى بأذن تعوننا على يعود وهذا فيها مرينا الي المراحل

(Quote 7.25)

عن طريق الهايف تناقشنا حول امور الترجمة...وسالنا بعضنا البعض عن معاني بعض المفردات وكيفية الحصول على الترجمة الصحيحة

(Quote 7.26)

هو انه خصصنا هذا الوقت للترجمة ونتقابل اون لاين للترجمة، فكل وحده فرغت نفسها الا اذا كان هناك ظرف طارئ، خصصنا هالوقت نقعد على الهايف، بس ما استخدمنا شئ ثاني.

(Quote 7.27)

كنت ابي اشارك البنات، يعلموني اذا فيه شيء يحتاج اعدله، او كنتي: شيء معجبهم فيه، او شئ يستفيدون منه مثلا. الباحثه محتاجه للنقد والفائده لك ولهم.

(Quote 7.28)

قلت لصديقاتي وكانوا بالجامعه يسالون كيف أسوي كذا قلت لهم بالهايف علشان أحسن من أشرح لكل وحده على حده قلت بأنزل خبرتي ع لى الهايف، وأصير كل شيء أطبق وأشرح لكم كيف سويته، ففعلا صرت أشرح لهم بالهايف

(Quote 7.29)

ويمكن ما فيه الحرية المطلقة لان الاستاذة تكون معنا، مادري فيه بنات يحسون اذا فيه استاذة كأن فيه قيود فهذا الشيء يضايقني،

(Quote 7.30)

في التحضيريه كنا ماخذين راحتنا لانه مافيه استاذات

(Quote 7.31)

إذا نبغي نعترض على شي لان هنا بالهايف ذا تيتشرس ار انفولف رسبكت ذا يعني نجلس نتناقش قدامها اجل هذا ولا هذا أحس انه دس تيتشر.

(Quote 7.32)

فلو مثلا كان البحث او الاكتفتي انه نبحت عن فيتشر ما اخذناها في الاتش تي ام ال شي يخليني ابحت واتحمس، اني اتعلم هذي المادة احس انه بيصير احسن... فمثلا كل قروب من الطالبات يمسكون جزئية من المادة ويتوسعون فيها وينزلون ماتعلموه في الهايف ممكن تكون أكثر جدوى.

(Quote 7.33)

ممكن تنحط في الدسكشن ان بعض الطالبات واعين ولكن قلة منهم وحتى اضافتها جیده "مافيه تثقيف للطالبات، مثلا الاستاذة تنزل سلايد هذا واجب الاستاذة أنها تنزل المحاضرات، تجي بنت وتقول شكرا يااستاذة...

(Quote 7.34)

ردودهم حمستني اني انزل مواضع (بوست) ثاني.

(Quote 7.35)

انا لما انزل شيء ويجي أحد يقول شكرا أنا أقدر هذا اللي يشكرني، بس ما أبي كل الناس يجون يقولون لي شكرا، أنا نزلت موضوع عن اي اء انهم يطورون المتصفح حقهم، أقرأي المقال وقولي هذا النقطة يعني كذا...ناقشيني عنها...حسيني انك قرיתי المقال

(Quote 7.36)

أحس من كثرة الايميلات اللي تجي مانقدر ننتبه لاشياء المهمة اللي تنزل في الهايف

(Quote 7.37)

يمكن لان كل واحد ينزل ما يحس فيه تفاعل مع الثاني زي نزلت ٢
فديو ما أحد علق عليها، يمكن لو أحد رد تحمست أنزل اشياء اكثر
بس مافيه تفاعل

(Quote 7.38)

مايحمسون الواحد المشاركه، او تحسین مافيه احد يقرأ فكأنك
تنزليين لنفسك او ممكن يقرأون بس مايعلقون

(Quote 7.39)

ما كان صعوبه في الهايف نفسه وشلون تكتبين، يمكن الصعوبه في
الكتاب، انهم مازد جربوا أنهم يكتبون. وممكن انه يخجلون انهم
يكتبون ما بداخلهم أو اسلوب غير جيد ومايتقبله الاخرين.

(Quote 7.40)

مع اني نبهت في المعمل انه مايشاركون فقط شكرا، احس ان
مجتمعنا مجتمع مجامل، الطالبات يستحون ويبنون حاجز

(Quote 7.41)

الباحث: رفعتي فديو رائع جدا ومفيد ولم تتلقي اي تعليق عليه
مع ان عدد الاصدقائك كبير (22 صديقه)

الطالبه: يكن لاني رفعته من أول الكورس، أو لاني ماسويت إعلان
له.

كنت اتوقع يطلعون عليه بدون تعليق عليه... حتى قلت لصديقاتي
في الجامعه وقتلتهم شوفوه

الباحث: طيب جاك تعليق في الجامعه خارج الهايف.

الطالبه: علق عليه في الجامعه حتى سالوني عن الموقع اللي جبتة
منه... الموقع عن علوم الكمبيوتر... وصاروا يروحون له

(Quote 7.42)

ما أدري فيه شيء يمنعني اني اعلق يمكن البنت ما أعرفها وتقول ليش علقتي على هذا الشيء، او ما ابغاك تعلقين مثلا او ممكن ..تتحسس من اي تعليق او ما يعجبها تعليقي. فاحتفظ برأي لنفسي

(Quote 7.43)

الطالبه: كنت اقراء المواضيع بس تعليق لا، يمكن اعلق على وحده وتزعل الثانيه ليش ما علقتي، وكان صعب اعلق على كل بوست أقراه .

(Quote 7.44)

اما اذا كان رايك، فان نعتبرها ماده فلزام نكتب الايجابيات ما ادري حتي في الحوار خارج الهايف دايمًا يذكرون...مافيه سلبيات الايجابيات،....

(Quote 7.45)

يمكن لان مجتمعنا ما تعلمنا مع مواقف نفس طبيعة الهايف. اني انزل شيء، أقرأ المواضيع وانتقدها، قليل جداً، حتى مو شرط انه تعليمي. اي مجال حتى ممكن انه اجتماعي، انزل موضوع نادر ما تجد النقد، ولما يكون موقع تعليمي ورسمي، بس شكرا مافيه نقد أبدا.

(Quote 7.46)

.ولازم نكتب باسمنا، وكان شوي ضغط

.قلتي ضغط علشان تكتبين باسمك ممكن توضحين

يعني لازم أكون حريصه لان استاذتي راح تشوفه، وما ادري من بيشوفه يعني لازم انا خلاص...

يعني كنتي تخافين من الغلط مثلا

تقريبا ايه، أخاف اكتب شيء انتقد عليه. انت ليش كتبتني كذا و ليش قلتي كذا

(Quote 7.47)

تعرفت على الطالبات من خلال الهايف ، فيه بنات اعرف اسماءهم فقط اروح للبلق حقها واتعرف عليها اكثر.

(Quote 7.48)

احس ان البنات مافهموا كيف يستخدمونها صح

(Quote 7.49)

الكل يعرف يستخدم البيئات الاجتماعيه، الغرض منه انكم تستفيدون من بعض. مثلا ينزل مرحله تتناقشون فيه واي محاضره تتناقشون ووصلوا فيها الى حل نهائي او فكره وحده

(Quote 7.50)

بس يمكن احنا ماتعودنا، يعني ممكن لو تجي ماده ثانية ونستخدم الهايف، اتوقع بنبدع أكثر، لان الهايف ما كنا نعرفه.

(Quote 7.51)

ايه احس لو كان فيه تدريب على الهايف قبل الكورس أفضل، علشان نعرف وش الفنكشن اللي ممكن نسويها، لو اخذنا ساعه وش نقدر نسوي فيها احس حلو.

(Quote 7.52)

الهدف من وجود موقع او اي شي لخدمة العملية التعليمية أوضفها التواصل باتجاه واحد

(Quote 7.53)

المشكلة الاتصال كان بطيء جدا لدرجة ما أبغى افتحه

(Quote 7.54)

انا بشكل عام دائما استخدم البيئات الاجتماعية في التعليم، لكن الهايف ما أحس أنه موفقن ليس كبيئة اجتماعية ولكن كأختيار موقع ما كان مره مرن الموقع، كثير اشياء ما أحس انها أدت الغرض اللي أحنا نبيه، لكن أنا استفدت من الهايف كانتراكتف بين

البنات والاستاذات أحس أنه أفضل من لو أنه بلق عادي، كان الهايف أفضل ولكن كان هناك خيارات أكثر من الهايف

(Quote 7.55)

حتى صديقاتي لما أقول لهم فيه موقع، يقولون ايه فاضين ندخله، ولما أحطه لهم ويشوفونه أي متحمسه عرفت انهم جربوها، خصوصا أي كنت دايم أقنعهم ما يستخدمون أي اءي لانه... بس لما جربوا هذا الموقع.... بداية السمستر كانوا يستخدمونه الحين ولا وحده تستخدمه فانا حسيت انه تطور شوي، أقنعتهم وأخذوا المعلومه بشكل جيد

(Quote 7.56)

كانت المشاريع جماعيه لكن هذي الماده فرديه وكنا مستخربين فجاءت الهايف وكاتها ربطتنا بمجموعات مره اخري وصرنا نحط موضوع معين ونقول وش راككم

(Quote 7.57)

بالعكس احس ان الهايف مفيده لنا، لان كثير بنات في الجامعه ما يطلعون، ان الترم الماضي كان معي برجكت مع بنات امهاتهم ما يرضون انهم يطلعون وهذا كثير في المجتمع السعودي وكان هذا معوق ما اقدر اتواصل معهم وما ادري كيف اتواصل معهم، احس مثل الهايف يمكن يخلينا اتواصل معهم. ربط مع جامعه اكستر.

(Quote 7.58)

أعرفه بالماده ويتعلق جديد شي اي اللي الوحيده الماده

(Quote 7.59)

احس ان الهايف جمعنا مع بعض الاستاذات والطالبات ومحتوى الماده لانها ممكن تنزل سلايدات وممكن تنزل اشياء نستفيد منها مثل فيديو، ملفات اي شيء يفيد الماده.

(Quote 7.60)

صراحه الوب المادة الوحيده اللي أعرف كل شي صار فيها، اقدر اساعد بنت وبنت تساعدني واذا نزل شي رساله تجيني على الايميل، مره ساعدني.

(Quote 7.61)

احس انه لو يتعمم على جميع المواد أحس أفضل، اللي مريحني أنه اي شي جديد ويتعلق بالماده أعرفه.

(Quote 7.62)

من اسئلة البنات الثانيين أول كانوا البنات يرسلون ايميلز عن الاسئله، فما تستفيد وش سالت عن اي شى تكلمت، لكن الحين صارت الاسئله والاجوبه قدامي و؟أعرف.

(Quote 7.63)

والاسئله حقت الدكتور همد احس مره فتحت مجال للاسئله والتواصل بينا وبين الدكتور صار مفتوح

(Quote 7.64)

يرسل مره واحده للجميع بدل ما كل واحد يجي ويسال في المكتب وكذا

(Quote 7.65)

هي طريقة تواصل بينى وبين الدكتور هذا اسهل شي اقد ارسل لها، ثاني ششي أقدر استفيد من خبرات الطالبات وأسألتهن، دايمًا تكون الاسئله متكرره فبدل ماتقعد الوحده ترسل ايميل للاستاذة أكثر من مره ممكن تشوف البوست وتستفسد منه، وممكن انا نتناقش بطريقة اسهل وتوفر وقت بدل ماتقعد في نجمع في مكان مثلا في بيت او برا ممكن نجمع في الهايف كقروب، بعد فكرنا انا نسوي قروب للذات ستركتشر هنا علشان نتبادل، لاني كنا نجمع اسئلة الطالبات ونرسلها بالايميل وفكرنا بالهايف اسرع وافضل.

(Quote 9.1)

احنا ما كنا نستخدم الهايف احنا كنا نستخدم وجها لوجه
واستخدمنا الهواتف بعد ما خلصنا سويتنا هذي الاشياء علشان
نسوي برنت سكرين ونحطها علشان نقول احنا استخدمنا الهايف

ممکن تدخلين بالاكونت علشان اشوف القروب، تقولين ما استخدمتوا
الهايف الا علشان الدرجات؟ وهل هذه الملاحظات عفويه؟

، للصرحة قلنا بدال ما كل وحده ترسل الترجمة وورد دكيومنت ...
وتعلق عليها الثانية ثم ترسل وكذا، نحط بوست في الهايف ونحط
الكمنت هنا يصير احسن قدام بعض بدال ما كل مره ترسلها ... ايه
صح.

Bibliography

- Abbott, c. (2001). *ICT: Changing Education*. London: Routledge Falmer.
- Adams, P. (2006). Exploring social constructivism: theories and practicalities. *Education* 34(3), 243-257.
- Ahmad, P., Hussain, A. & Aqil, M. (2013) Use of web 2.0 in Saudi Arabia Universities. *International Journal of Information Dissemination and Technology*, 3, 158-66.
- Al-Faki, I. M., & Khamis, A. H. A. (2014). Difficulties Facing Teachers in Using Interactive Whiteboards in Their Classes. *American International Journal of Social Science*, 3(2), 136-158.
- Al-Jarf, R. (2005a). The Effects of Online Grammar Instruction on Low Proficiency EFL College Students' Achievement. *Asian EFL Journal*, 7(4), 166-190.
- Al-Jarf, R. (2006a). Cross-cultural Communication: Saudi, Ukrainian, and Russian Students Online. *Asian EFL Journal*, 8(2).
- Al-Jarf, R. (2006b). Teachers' Online Discussion Forums in Saudi Arabia. *I-manager's Journal of Educational Technology*.
- Al-Jarf, R. S. (2005b). *Connecting Students across Universities in Saudi Arabia*. Paper presented at the 4th Asia CALL Conference.
- Al-Khalifa, H. (2008a). *Leveraging Course Communication using Weblogs: a Report on Students' Satisfaction*. Paper presented at the Sixth Annual Symposium on Learning & Technology.
- Al-Khalifa, H. (2008c). Twitter in academia a case study from Saudi Arabia. Retrieved from <http://elearnmag.acm.org/featured.cfm?aid=1454109>
- Al-Khalifa, H. (2008d). *Harnessing collective collaboration environments in the resettlement of Information Technology*. Paper presented at the Digital Economy & ICT Industry.
- Al-Khalifa, H. S. (2008b). *Wikis in Classroom Participation: Results From Preliminary Experiment*. Paper presented at the First International Conference on Technology, Communication and Education (i-TCE).
- Al-Khalifa, H. S. (2009). The State of Distance Education in Saudi Arabia. *eLearn magazine*. Retrieved 7 Mar, 2013 from <http://www.elearnmag.org/subpage.cfm?section=articles&article=101-1>

- Al-Madani, F., & Allafiajiy, I. (2014). Teachers' Professional Development on ICT Use: A Saudi Sustainable Development Model. *Journal of Modern Education Review*, 4(6), 448-456.
- Al-Mengash, S. A. (2006). An Analysis of the Saudi Educational Policy and Suggestions for its Improvement. *Educational Science and Islamic Studies*, 19(1), 381-440.
- Almalki, G., & Williams, N. (2012). A Strategy to Improve The Usage of ICT in The Kingdom of Saudi Arabia Primary School. *International Journal of Advanced Computer Science and Application*, 3(10), 42-49.
- AlMunajjed, M. (2009). Women's Education in Saudi Arabia: The Way Forward. *The Ideation Center*, 25. Retrieved 12 May, 2013 from http://www.ideationcenter.com/ideation_research/ideation_article/47143812
- Al-Shawi, A., & Al-Wabil, A. (2007). Internet Usage by Faculty in Saudi Higher Education: King Abdulaziz city of Science and Technology (KACST).
- Al-Sibai, A. (2012). Too Much Cell Phone Usage could Affect your Health. *Saudi Gazette*. Retrieved 5 Mar, 2012 from <http://www.saudigazette.com.sa/index.cfm?method=home.regcon&contentid=20121227147265>
- Al-Wehaibi, K., Al-Wabil, A., Alshawi, A., & Zainab Alshankity. (2008). *Barriers to Internet Adoption among Faculty in Saudi Arabian Universities*. Paper presented at the World Conference on Educational Multimedia, Hypermedia and Telecommunications Retrieved from <http://www.editlib.org/noaccess/28372>
- Alamri, M. (2011). Higher Education in Saudi Arabia. *Journal of Higher Education Theory and Practice*, 11(4), 88-91.
- Albion, P. (2008). Web 2.0 in Teacher Education: Two Imperatives for Action. *Computers in The Schools*, 25(3-4), 181-198.
- Alebaikan, R. A. (2010). *Perceptions of Blended Learning in Saudi Universities*. University of Exeter, Exeter.
- Alexander, B. (2006). Web 2.0: a New Wave of Innovation for Teaching and Learning? *Educause Review*, 41(2), 32-44.
- Aljabre, A. (2012). An Exploration of Distance Learning in Saudi Arabian Universities: Current Practices and Future Possibilities. *International Journal of Business, Humanities and Technology*, 2(2), 132-137.
- Aljodi, M. (2003). The Need of ICT Training among Staff and Students of Colleges of Teachers. *Colleges of Teachers*, 3(1), 184-191.

- Alwagait, E., Shahzad, B. & Alim, S. (2014) Impact of social media usage on students' academic performance in Saudi Arabia. *Computers in Human Behavior*, Article in press.
- Anderson, P. (2007). *What is Web 2.0? Ideas, technologies and implications for education*: JISC Technology and Standards Watch.
- Bajt, S. K. (2011). Web 2.0 Technologies: Applications for community Colleges. *New Directions for Community Colleges*, 2011(154), 53-62.
- Balubaid, M. A. (2013) Using Web 2.0 Technology to Enhance Knowledge Sharing in an Academic Department. *Social and Behavioral Sciences*, 102, 406-420.
- Bangert, A. & Almahfud, M. (2014) An Exploratory Study of University Students' Smartphone Use for Learning in the US and Saudi Arabia. IN SEARSON, M. & OCHOA, M. (Eds.) *Society for Information Technology & Teacher Education International Conference*. Chesapeake, Association for the Advancement of Computing in Education (AACE).
- Barab, S., & Squire, K. (2004). Design-Based Research: Putting a Stake in the Ground. *The journal of the learning sciences*, 13(1), 1-14.
- Barden, O. (2012). "...If we were cavemen we'd be fine": Facebook as a catalyst for critical literacy learning by dyslexic sixth-form students. *Literacy (formerly called Reading)*, 46(3), 123-132.
- Baviskar, S., Hartle, R. T., & Whitney, T. (2009). Essential Criteria to Characterize Constructivist Teaching: Derived from a review of the literature and applied to five constructivist-teaching method articles. *International Journal of Science Education*, 31(4), 541-550.
- Bazeley, P. (2007). *Qualitative Data Analysis with NVivo*. London: Sage.
- Beetham, H., & Sharpe, R. (Eds.). (2007). *Rethinking Pedagogy for a Digital Age: Designing and Delivering e-Learning*. Oxon: Routledge.
- Bennett, N., & Carre, C. (Eds.). (1993). *Learning to Teach*. London: Routledge.
- Bennett, S., Maton, K., & Kervin, L. (2008). The 'Digital Natives' debate: A Critical Review of the Evidence. *British Journal of Educational Technology*, 39(5), 775-7786.
- Bennett, S., Bishop, A., Dalgarno, B., Waycott, J., & Kennedy, G. (2012). Implementing Web 2.0 technologies in higher education: A collective case study. *Computers & Education*, 59(2), 524-534.
- Benzinger, B. (2006). Back to School with the Class of Web 2.0. *Solution Watch*. Retrieved from <http://www.solutionwatch.com/515/back-to-school-with-the-class-of-web-20-part-1/>

- BERA. (2011). Ethical Guidelines for Educational Research. Retrieved 25 Sep, 2013 from <http://www.bera.ac.uk/files/guidelines/ethical1.pdf>
- Bowler, L., & Large, A. (2008). Design-based research for LIS. *Library & Information Science Research*, 30, 39-46.
- Brown, A. L. (1992). Design Experiments: Theoretical and Methodological Challenges in Creating Complex Interventions in Classroom Settings. *The journal of the learning sciences*, 2(2), 141-178.
- Buffington, M. (2008). Creating and Consuming Web 2.0 in Art Education. *Computers in The Schools*, 25(3-4), 303-313.
- Bull, G., Hammond, T., & Ferster, B. (2008). Developing Web 2.0 Tools for Support of Historical Inquiry in Social Studies. *Computers in The Schools*, 25(3-4), 275-287.
- Bybee, R. (1993). *Instructional Model for Science Education in Developing Biological Literacy*. Colorado: Springs.
- Cachia, R., Compano, R., & Costa, O. D. (2007). Grasping the Potential of Online Social Networking for Foresight. *Technological Forecasting & Social Change*, 74, 1179-1203.
- Central Department of Statistics & Information. (2010, 2012). Central Department of Statistics & Information. Retrieved 27 Feb, 2015 from <http://www.cdsi.gov.sa/index.php>
- Cherim, M. (2008). Twitter for Academia. Retrieved 20 May 2009, from <http://academhack.outsidethetext.com/home/2008/twitter-for-academia/>
- Clark, W., Logan, K., Luckin, R., Mee, A., & Oliver, M. (2009). Beyond Web 2.0: Mapping the Technology Landscapes of Young Learners. *Journal of Computer Assisted Learning*, 25, 56-69.
- Clarke, L., & Heaney, P. (2003). Author On-Line: Using Asynchronous Computer Conferencing to Support Literacy. *British Journal of Educational Technology*, 34(1), 57-66.
- Coffey, A., & Atkinson., P. (1996). *Making Sense of Qualitative Data: Complementary Research Strategies*. Calif: Sage.
- Cohen, L., Manion, L., & Morrison, K. (2007). *Research methods in education* (6th Ed.). London: Routledge.
- Collis, B., & Moonen, J. (2008). Web 2.0 Tools and Processes in Higher Education: Quality Perspectives. *Educational Media International*, 45(2), 93-106.

- Computing Dictionary. (1998). Retrieved 12 June, 2009, from <http://dictionary.reference.com/browse/affordance>
- Conole, G. (2013). *Designing for Learning in an Open World*. London: Springer.
- Conole, G., & Dyke, M. (2004a). What are the affordances of information and communication technologies? *ALT-J*, 12(2), 113-124.
- Conole, G., Dyke, M., Oliver, M., & Seale, J. (2004b). Mapping pedagogy and tools for effective learning design. *Computer and Education*, 43, 17-33.
- Creswell, J. (1994). *Research Design: Qualitative & Quantitative Approaches*. London: SAGE Publications.
- Creswell, J. (1998). *Qualitative Inquiry and Research Design: Choosing Among Five Traditions*. London: SAGE Publications.
- Crook, C. (2012). The 'digital native' in context: tensions associated with importing Web 2.0 practices into the school setting. *Oxford Review of Education*, 38(1), 63-80.
- Crowley, C., Harre, R., & Tagg, C. (2002). Qualitative Research and Computing: Methodological Issues and Practices in Using QSR NVivo and NUD*IST. *International Journal of Social Research Methodology* 5(3), 193-197.
- Cuckle, P., Clarke, S., & Jenkins, I. (2000). Students' Information and Communications Technology Skills and Their Use during Teacher Training. *Journal of Information Technology for Teacher Education*, 9(1), 9-22.
- Davis, N. (2003). Technology in Teacher Education in the USA: what makes for sustainable good practice? *Technology, Pedagogy and Education*, 12(1), 59-84.
- Deputyship for Planning & Information. (2010). *Women in Higher Education: Saudi Initiatives & Achievements*. Riyadh.
- Downes, S. (2005). E-learning 2.0. *eLearn Magazine*. Retrieved from <http://elearnmag.acm.org/featured.cfm?aid=1104968>
- eDialogue. (2011). eDialogue. Retrieved 11 Mar, 2013, from <http://www.edialogue.org/en/default.aspx>
- Elgg.org. Main page. Retrieved 22 July, 2009, from http://docs.elgg.org/wiki/Main_Page
- Ezzy, D. (2002). *Qualitative Analysis: Practice and Innovation*. London: Routledge.
- Francescato, D., Porcelli, R., Mebane, M., Cuddetta, M., Klobas, J., & Renzi, P. (2006). Evaluation of the efficacy of collaborative learning in face-to-face and

- computer-supported university contexts. *Computers in Human Behavior* 22 (2006) 163–176, 22, 163- 176.
- Franklin, T., & Harmelen, M. v. (2007). *Web 2.0 for Content for Learning and Teaching in Higher Education: JISC*.
- Friesen, N., & Lowe, s. (2012). The Questionable Promise of Social Media for Education: connective Learning and the Commercial Imperative. *Journal of Computer Assisted Learning*, 28(1), 183-194.
- Gasparetti, F., Micarelli, A., & Sciarrone, F. (2009). A web-based training system for business letter writing. *Knowledge-Based Systems*, 22(4), 287-291.
- General Directorate for Planning and Statistics. (2010). *Higher education and building a knowledge society in the Kingdom of Saudi Arabia: international calendar*. Riyadh.
- General Directorate for Planning. (2005). *The Executive Summary of The Ministry of Education Ten - Year Plan 1425 - 1435 H (2004 - 2014)*. Riyadh: Ministry of Education.
- Gibson, J. J. (1979). *The Ecological Approach to Visual Perception*. Boston: Houghton Mifflin.
- Gibson, J. J. (1986). *The ecological approach to visual perception*. New Jersey: Lawrence erlbaum associates, publishers.
- Gray, K., Annabell, L., & Kennedy, G. (2010a). Medical students' use of Facebook to support learning: Insights from four case studies. *Medical Teacher*, 32(12), 971-976.
- Gray, K., Chang, S., & Kennedy, G. (2010b). Use of Social Web Technologies by International and Domestic Undergraduate Students: Implications for Internationalising Learning and Teaching in Australian Universities. *Technology, Pedagogy & Education*, 19(1), 31-46.
- Greeno, J. G. (1994). Gibson's Affordances. *Psychological Review*, 101(2), 336-342.
- Gross, R., & Acquisti, A. (2005). *Information Revelation and Privacy in Online Social Networks (The Facebook case)*. Paper presented at the ACM Workshop on Privacy in the Electronic Society (WPES).
- Guo, Zixiu; Stevens, Kenneth J.; and Li, Yuan, "A Typology and Hierarchical Framework of Technology Use in Digital Natives' Learning" (2013). *PACIS 2013 Proceedings*. Paper 201. <http://aisel.aisnet.org/pacis2013/201>

- Hakkinen, P. I. (2003). Collaborative Learning in Networked Environments: Interaction Through Shared Workspaces and Communication Tools. *Journal of Education for Teaching*, 29(3), 279-282.
- Hamdan, A. (2005). Women and Education in Saudi Arabia: Challenges and Achievements. *International Education Journal*, 6(1), 42-64.
- Hamdan, A. (2012). The Role of Authentic Islam: The Way forward for Women in Saudi Arabia. *Journal of Women of the Middle East and the Islamic World* (10), 200-220.
- Harmelen, M. v. (2008). Briefing Paper on Web 2.0 Technologies for Content sharing: Learning and Teaching. Retrieved from <http://franklin-consulting.co.uk/LinkedDocuments/Introduction%20to%20Web%202.doc>
- <http://www.records.nsw.gov.au/recordkeeping/government-recordkeeping-manual/guidance/guidelines/guideline-24/for-more-information>
- Hassana, R. H. A., & Woodcock, A. (2006). *Characteristics of computer education in Saudi Arabia*. Paper presented at the National Computer conference.
- Hauck, M., & Youngs, B. (2008). Telecollaboration in multimodal environments: the impact on task design and learner interaction. *Computer Assisted Language Learning*, 21(2), 87-124.
- Hawkey, K. (2003). Social constructivism and Asynchronous Text-Based Discussion: A Case Study with Trainee Teachers. *Education and Information Technologies*, 8(2), 165-177.
- Hemmi, A., Bayne, S., & Land, R. (2009). The appropriation and repurposing of social technologies in higher education. *Journal of Computer Assisted Learning*, 25(1), 19-30.
- Hew, K. F. (2011). Students' and teachers' use of Facebook. *Computers in Human Behavior*, 27(2), 662-676.
- Hew, K. F., & Cheung, W. S. (2008). Attracting Student Participation in Asynchronous Online Discussions: A Case Study of Peer Facilitation. *Computers & Education* 51, 1111-1124.
- High Authority for Al Riyadh Development. (2012). Investment Climate 1433 Available from http://www.arriyadh.com/ar/cgi-bin/localuser/publications/Researches/Investment_Climate_in_ArRiyadh_1433/index.html#9/
- Holcomb, L. B., & Beal, C. M. (2010). Capitalizing on Web 2.0 in the Social Studies Context. *TechTrends*, 54(4), 28-33.

- Huang, H. M. (2002). Toward constructivism for adult learners in online learning environments. *British Journal of Educational Technology*, 33(1), 27-37.
- Huang, W.-H. D., & Nakazawa, K. (2010). An Empirical Analysis on how Learners Interact in Wiki in a Graduate Level Online Course. *Interactive Learning Environments*, 18(3), 233-244.
- Hughes, A. (2009). *Higher Education in a Web 2.0 World*. England.
- ICDL Saudi Arabia. (2008). ICDL Saudi Arabia. Retrieved 3 Mar, 2013, from http://www.icdlsaudi.org/icdlsaudi_en.nsf/link/Oct14th09.html
- Internet Al Saudia. (2007). Internet in Saudi Arabia. Retrieved 1 Des 2009, from http://www.internet.gov.sa/learn-the-web/guides/internet-in-saudi-arabia/view?set_language=en
- Internet Word Stats. (2001a, Sep 2014). Internet World Stats, Middle East Retrieved 3 Mar, 2015, from <http://www.internetworldstats.com/middle.htm#sa>
- Jaffer, S. (2010). Educational technology pedagogy: A looseness of fit between learning theories and pedagogy. *Education as Change*, 14(2), 273-287.
- Jefferies, P., Grodzinsky, F., & Griffin, J. (2003). Advantages and Problems in Using Information Communication Technologies to Support the Teaching of a Multi-institutional computer Ethics Course. *Journal of Educational Media*, 28(2-3), 191-203.
- Jenkins, H., Clinton, K., Purushotma, R., Robison, A. J., & Weigel, M. (2006). *Confronting the Challenges of Participatory Culture: Media Education of the 21st Century*. Chicago: The MacArthur Foundation.
- Jones, C., Dirckinck-Holmfeld, L., & Lindström, B. (2006). A relational, indirect, meso-level approach to CSCL design in the next decade. *Computer-Supported Collaborative Learning*, 1, 35-56.
- Junco, R. (2012). The Relationship between Frequency of Facebook Use, Participation in Facebook Activities, and Student Engagement. *Computers & Education*, 58(1), 162-171.
- Kalpidou, M., Costin, D., & Morris, J. (2011). The Relationship Between Facebook and the Well-Being of Undergraduate College Students. *Cyberpsychology, Behavior, and Social Networking*, 14(4), 183-189.
- Kandiliy, J. A. (2007). *The Role of Planning in the Preparation of Highly Qualified in the Kingdom of Saudi Arabia*. Makkah: Umm Al-Qura University
- Kennedy, G., Judd, T., Churchward, A., Gray, K., & Krause, K. (2008). First Year Students' Experiences with Technology: are they Really Digital natives? *Australasian Journal of Educational Technology*, 24(1), 108-122.

- King Abdulaziz Center. (2011). King Abdulaziz Center for National dialogue. From <http://www.kacnd.org/eng/>
- King Abdulaziz University. (2013). King Abdulaziz University. Retrieved 6 Mar, 2013, from <http://www.kau.edu.sa/>
- King Saud University. (2009). Electronic Learning and Distant Learning Deanship Retrieved 29 Nov, 2009, from <http://www.ksu.edu.sa/sites/KSUArabic/Deanships/Elearn/Pages/default.aspx>
- King Saud University. (2012). History. Retrieved 30 Mar, 2012, from <http://ksu.edu.sa/AboutKSU/Pages/History1.aspx>
- King Saud University. (2007). Web Technologies course. Retrieved 20, Jun, 2010, from <http://colleges.ksu.edu.sa/ComputerSciences/InformationTechnology/Pages/cap311.aspx>
- King Abdullah Initiative for Arabic Content. (2009). Retrieved 12 July, 2011 from <http://www.econtent.org.sa/Pages/Default.aspx>
- Kirkwood, A., & Price, L. (2005). Learners and Learning in the Twenty-first Century: What do we Know about Students' Attitudes towards and Experiences of Information and Communication Technologies that will Help us Design Courses. *Studies in Higher Education, 30*(3), 257-274.
- Kirschner, P. A., & Paas, F. (2001). Web-enhanced Higher Education: a Tower of Babel. *Computer in Human Behavior, 17*, 347-353.
- Kong, S. C., & Kwok, L. F. (2003). A graphical partitioning model for learning common fraction: designing affordances on a web-supported learning environment. *Computers & Education, 40*(2), 137-155.
- Kreijns, K., Kirschner, P. A., Jochems, W., & Buuren, H. v. (2007). Measuring perceived sociability of computer-supported collaborative learning environments. *Computers & Education, 49*, 176-192.
- Lai, C. H., Yang, J. C., Chen, F. C., Ho, C. W., & Chan, T. W. (2007). Affordances of mobile technologies for experiential learning: the interplay of technology and pedagogical practices. *Journal of Computer Assisted Learning, 23*(4), 326-337.
- Lally, V., & Barrett, E. (1999). Building a Learning Community On-line: towards Socio-Academic Interaction. *Research Papers in Education, 14*(2), 147-163.
- Lampe, C., Wohn, D., Vitak, J., Ellison, N., & Wash, R. (2011). Student use of Facebook for organizing collaborative classroom activities. *International Journal of Computer-Supported Collaborative Learning, 6*(3), 329-347.

- Leask, M., & Meadows, J. (Eds.). (2000). *Teaching and Learning with ICT in the Primary School*. London: Routledge.
- Lee, C. J. G. (2012). Reconsidering Constructivism in Qualitative Research. *Educational Philosophy and Theory*, 44(4), 403-412.
- Lee, M., McLoughlin, C., & Chan, A. (2008). Talk the Talk: Learner-Generated Podcasts as Catalysts for Knowledge Creation. *British Journal of Educational Technology*, 39(3), 501-521.
- Lim, W.-Y., So, H.-J., & Tan, S.-C. (2010). eLearning 2.0 and new Literacies: Are Social Practices Lagging Behind? *Interactive Learning Environments*, 18(3), 203-218.
- Liu, X., Liu, H., Bao, Z., Ju, B., & Wang, Z. (2010). A web-based self-testing system with some features of Web 2.0: Design and primary implementation. *Computers & Education*, 55(1), 265-275.
- Livingstone, S., & Brake, D. R. (2010). On the Ripid Rise of Social Networking Sites: New Findings and Policy Implications. *Children & Society*, 24(1), 75-83.
- London, M., & Hall, M. J. (2011). Unlocking the Value of Web 2.0 Technologies for Training and Development: The Shift from Instructor-controlled, Adaptive Learning to Learner-driven, Generative Learning. *Human Resource Management*, 50(6), 757-775.
- Luckin, R., Clark, W., Graber, R., Logan, K., Mee, A., & Oliver, M. (2009). Do Web 2.0 Tools Really Open the door to Learning? Practices, Perceptions and Profiles of 11-16-year-old Students. *Learning, Media & Technology*, 34(2), 87-104.
- Madge, C., Meek, J., Wellens, J., & Hooley, T. (2009). Facebook, social integration and informal learning at university: 'It is more for socialising and talking to friends about work than for actually doing work'. *Learning, Media & Technology*, 34(2), 141-155.
- McClellan, J. (2005). Just do it...blog it. Retrieved 7 Jan, 2012 from <http://www.guardian.co.uk/technology/2005/may/05/students.elearning>
- McDougall, A., & Jones, A. (2006). Theory and history, questions and methodology: current and future issues in research into ICT in education. *Technology, Pedagogy and Education*, 15(3), 353- 360.
- McGrenere, J., & Ho, W. (2000). Affordances: Clarifying and Evolving a Concept. Retrieved 17 August, 2010 from <http://teaching.polishedsolid.com/spring2006/iti/read/affordances.pdf>
- McLoughlin, C., & Lee, M. J. W. (2007). Social software and participatory learning: Pedagogical choices with technology affordances in the Web 2.0 era. 2009(28/6/2009),

- Mercer, N., & Littleton, K. (2007). *Dialogue and the Development of Children's Thinking: A Sociocultural Approach*. Oxon: Routledge.
- Mercy College. (2010, 2010). Quality Discussion Postings. *Mercy online* Retrieved 10 Mar, 2013, from http://www.stjohns.edu/faculty/portable_old/portable1/tools/messages.sju
- Meyer, D. L. o. (2009). The Poverty of Constructivism. *Educational Philosophy and Theory*, 41(3), 332-341.
- Miller, P. (2005). Web 2.0: Building the New Library. *Ariadne* (45), 6.
- Miniwatts Marketing Group. (2000, 20 September 2010). Internet World Stats: Usage and Population Statistics. *Middle east*, Retrieved 14th Dec 2010, from <http://www.internetworldstats.com/middle.htm>
- Miniwatts Marketing Group. (2012). Facebook Users in the World. Retrieved 26 Nov, 2012, from <http://www.internetworldstats.com/facebook.htm>
- MoCT. (2005). *The National Communications and Information Technology Plan, The Vision Towards the Information Society*. Retrieved 13 Nov, 2012 from <http://www.mcit.gov.sa/english/NCITP/AboutNCITP/>.
- MoHE. (1996, 2009). Ministry of Higher Education Portal. Retrieved 8 Des, 2009, from <http://www.mohe.gov.sa/en/Pages/default.aspx>
- Mulhim, E. A. (2014). The Barriers to the Use of ICT in Teaching in Saudi Arabia: A Review of Literature. *Universal Journal of Educational Research*, 2(6), 487-493.
- NCeL. (2009). National centre of E-learning and Distance Learning. Retrieved 3 May, 2009, from <http://www.elc.edu.sa/portal/index.php?mod=content&page=27&mylms=69225b049d86e24b505b5fd6e1ce8a02>
- Norman, D. A. (1999). Affordance, Conventions and Design, *Interactions*, 6(3), 38-43. Retrieved from http://www.jnd.org/dn.mss/affordance_conv.html
- Norman, D. A. (2002). *The Design of everyday things* (2 Ed.). New York: First Basic Paperback.
- Norton, P., & Hathaway, D. (2008). On Its Way to K-12 Classrooms, Web 2.0 Goes to Graduate School. *Computers in The Schools*, 25(3-4), 163-180.
- O'Neill, M. (2005). *Automated Use of a Wiki for Collaborative Lecture Notes*. Paper presented at the 36th SIGCSE technical symposium on Computer science education New York, USA.

- O'Reilly, T. (2007). What is Web 2.0: Design Patterns and Business Models for the Next Generation of Software? *Communications & Strategies*, 65(1), 17-38.
- Oliver, M. (2005). The Problem with Affordances. *E-learning and Digital Media*, 2(4), 402-413.
- Owen, M., Grant, L., Sayers, S., & Facer, K. (2006). Social software and learning. *Opening Education*. Retrieved 10 Oct, 2012 from www.futurelab.org.uk/research/opening_education.htm.
- Oyaid, A. A. (2009). *Education Policy in Saudi Arabia and its Relation to Secondary School Teachers' ICT Use, Perceptions, and Views of the Future of ICT in Education*. University of Exeter, Exeter.
- Panitz, T. (1996). Collaborative Versus Cooperative Learning- A Comparison of The Two Concepts Which will Help us Understand the Underlying Nature of Interactive Learning. Retrieved 3 Mar, 2013 from http://pirun.ku.ac.th/~btun/pdf/coop_collab.pdf
- Partnership for 21st Century Skills. (2011). Framework for 21st Century Learning. *Partnership for 21st Century Skills* Retrieved 30 Mar, 2013
- Pasek, J., More, E., & Hargittai, E. (4 May 2009). Facebook and academic performance: Reconciling a media sensation with data. *First Monday: Peer-review journal on the internet* Retrieved 20 May, 2009, from <http://www.uic.edu/htbin/cgiwrap/bin/ojs/index.php/fm/article/view/2498/2181>
- Pempek, T. A., Yermolayeva, Y. A., & Calvert, S. L. (2009). College students' social networking experiences on Facebook. *Journal of Applied Developmental Psychology*, 30(3), 227-238.
- Pifarré, M., & Kleine-Staarman, J. (2011). Wiki-Supported Collaborative Learning in Primary Education: How a Dialogic Space is Created for Thinking Together. *International Journal of Computer-Supported Collaborative Learning*, 6(2), 187-205.
- Prensky, M. (2001). Digital Natives, Digital Immigrants. *On the Horizon (MCB University Press)*, 9(5).
- Princess Noura bint Abdul Rahman University. (2012). Princess Noura Bint Abdul Rahman University from <http://www.pnu.edu.sa/en/Pages/Home.aspx>
- Pring, R. (2004). *Philosophy of educational research* (second edition Ed.). London/New York: Continuum.

- Qashqari, K., & Qashqari, R. (2004). *The Reality of Using the Technology among Staff of College of Education for Girls in Jeddah*. Paper presented at the Professional Development for Academic Staff in Higher Education Organisations.
- Radnor, H. (2002). *Researching Your Professional Practice: Doing Interpretative research*. Buckingham: Open University.
- Redecker, C. (2009). *Review of Learning 2.0 Practices: Study on the Impact of Web 2.0 Innovations on Education and Training in Europe*. Spain: European communities
- Reigeluth, C. M. (2003). Knowledge building for use of the internet in education. *Instructional Science*, 31, 341-346.
- Reiser, R. (2001). A history of instructional design and technology: Part II: A history of instructional design. *Educational Technology Research and Development*, 49(2), 57-67.
- Rich, M., & Patashnick, J. (2002). Narrative Research with Audio-visual Data: Video Intervention/ Prevention Assessment (VIA) and NVivo. *International Journal of Social Research Methodology*, 5(3), 245-261.
- RNCOS (Oct 2013) Saudi Arabia Education Forecast to 2017. *Business Consultancy Services*.
- Rochette, L. (2007). What Classroom Technology has Taught me about Curriculum, Teaching, and Infinite Possibilities. *English Journal*, 97(2), 43-48.
- Roschelle, J., & Teasley, S. (Eds.). (1995). *In Computer-Supported Collaborative Learning*. New York: Springer-Verlag.
- Rosen, D., & Nelson, C. (2008). Web 2.0: A New Generation of Learners and Education. *Computers in The Schools*, 25(3-4), 211-225.
- Rubio, R., Martín, S., & Morán, S. (2010). Collaborative Web Learning Tools: Wikis and Blogs. *Computer Applications in Engineering Education*, 18(3), 502-511.
- Sadler, E., & Given, L. M. (2007). Affordance theory: a framework for graduate students' information behavior. *Journal of Documentation*, 63(1), 115-141
- Sait, S., Al-Tawil, K., Ali, S., & Khan, S. (nd). The Use and Effect of Internet on Teachers and Students in Saudi Arabia (pp. 1-15). Saudi Arabia: King Abdulaziz City for Science and Technology (KACST).
- Sait, S., Al-Tawil, K., Sanaullah, S., & Faheemuddin, M. (2007). Impact of Internet Usage in Saudi Arabia:A social Perspective. *International Journal of Information Technology and Web Engineering*, 2(2), 81-107.

- Sait, S., Altawil, K., Shahid, A., & Hussain, A. (2003). Use and Effect of the Internet in Saudi Arabia. Dhahran: King Abdulaziz city of Science and Technology (KACST).
- Salmon, G. (2000). *E-moderating: the key to teaching and learning online*. London: Kogan Page.
- Schuck, S., & Aubusson, P. (2010). Educational scenarios for digital futures. *Learning, Media & Technology*, 35(3), 293-305.
- Schwandt, T. A. (1997). *Qualitative Inquiry: A Dictionary of Terms*. London: Sage.
- Selwyn, N. (2007). The use of computer technology in university teaching and learning: a critical perspective. *Journal of Computer Assisted Learning* 23, 83-93.
- Selwyn, N. (2009a). Faceworking: Exploring Students' Education-Related Use of Facebook. *Learning, Media & Technology*, 34(2), 157-174.
- Selwyn, N. (2009b). The digital native - myth and reality. *Aslib Proceedings: New Information Perspectives*, 61(4), 364-379.
- Selwyn, N., Crook, C., Carr, D., Carmichael, P., Noss, R., & Laurillard, D. (2008). *Education 2.0? Designing the web for teaching and leaning*. England.
- Shabajee, P., McBride, B., Steer, D., & Reynolds, D. (2006). A prototype Semantic Web-based digital content exchange for schools in Singapore. *British Journal of Educational Technology*, 37(3), 461-477.
- Sharpe, R., Beetham, H., & Freitas, S. D. (Eds.). (2010). *Rethinking Learning for a Digital Age: How Learners are Shaping their own Experiences*. New York: Routledge.
- Sharples, M., Graber, R., Harrison, C., & Logant, K. (2009). E-safety and Web 2.0 for Children aged 11-12. *Journal of Computer Assisted Learning*, 25(70-84).
- Shen, K. N., & Khalifa, M. (2009). *Facebook Usage Among Arabic College Students: Preliminary Finding on Gender Differences*. Paper presented at the 9th International Conference on Electronic Business. Retrieved 12 May, 2013 from <http://ro.uow.edu.au/dubaipapers/43>
- Slavin, R. (1988). Cooperative Learning and Students Achievement. Retrieved 10 Feb, 2012 from http://ascd.me/ASCD/pdf/journals/ed_lead/el_198810_slavin.pdf
- Socialbakers. (2013). Saudi Arabia Facebook Statistics. Retrieved 7 Jan 2011 from <http://www.socialbakers.com/facebook-statistics/saudi-arabia>
- Somekh, B. (2007). *Pedagogy and Learning with ICT: Researching the art of innovation*. London: Routledge.

- Stacey, E. (2002). Social Presence Online: Networking Learners at a Distance. *Education and Information Technologies*, 7(4), 287-294.
- Statistic Brain (2014). Facebook Statistics, Retrieved 5 September 2014 from <http://www.statisticbrain.com/facebook-statistics/>
- Subrahmanyam, K., Reich, S. M., Waechter, N., & Espinoza, G. (2008). Online and offline social networkings: Use of social networking sites by emerging adults. *Journal of Applied Developmental Psychology*, 29, 420-433.
- Tanner, H., & Jones, S. (2002). Using information and communications technology to support interactive teaching and learning on a secondary mathematics initial teacher training course. *Technology, Pedagogy and Education*, 11(1), 77-91.
- Tashakkori, A., & Teddlie, C. (1998). *Mixed Methodology: Combining Qualitative and Quantitative Approaches*. London: SAGE Publications.
- Tatweer. (2012). Tatweer, King Abdullah Project for General Education Development. Retrieved 1 Mar, 2015, from <http://www.tatweer.edu.sa/>
- Teclehaimanot, B., & Hickman, T. (2011). Student-Teacher Interaction on Facebook: What Students Find Appropriate. *TechTrends*, 55(3), 19-30.
- The Design Based Research Collective. (2003). Design-Based Research: An Emerging Paradigm for Educational Inquiry. *Educational Researcher*, 32(1), 5-8.
- The Information Services Working Group on Collaborative Tools. (August 2006). *Collaborative Software Tools and Web 2.0: The University of Edinburgh*.
- The Ministry of Culture & Information (nd). The Saudi Arabia Information Resource. Retrieved 26 Feb, 2013, from <http://www.saudinf.com/index.htm>
- The Saudi Network (nd). The Saudi Network. *Saudi Arabia Cities* Retrieved 26 Feb, 2013, from <http://www.the-saudi.net/saudi-arabia/saudi-main-cities.htm>
- Thomas, D., & Li, Q. (2008). From Web 2.0 to Teacher 2.0. *Computers in The Schools*, 25(3-4), 199-210.
- Thompson, J. (2007). Is Education 1.0 Ready for Web 2.0 Students? *Journal of online education*, 3(4). Retrieved 7 Mar, 2012 from <http://www.innovateonline.info/index.php?view=article&id=393>
- Tobias, S. (2010). Generative Learning Theory, Paradigm shifts, and Constructivism in Educational Psychology: A Tribute to Merl Wittrock. *Educational Psychologist*, 45(1), 51-54.
- Trentin, G. (2009). Using a Wiki to Evaluate Individual contribution to a Collaborative Learning Project. *Journal of Computer Assisted Learning*, 25, 43-55.

- Trilling, B., & Fadel, C. (2009). *21st Century Skills: Learning for Life in Our Times*. San Francisco: Jossey-Bass.
- Virkus, S. (2008). Use of Web 2.0 Technologies in LIS Education: Experiences at Tallinn University, Estonia. *Program: Electronic Library & Information Systems*, 42(3), 262-274.
- Vitak, J., Zube, P., Smock, A., Carr, C. T., Ellison, N., & Lampe, C. (2011). It's Complicated: Facebook Users' Political Participation in the 2008 Election. *Cyber psychology, Behavior, and Social Networking*, 14(3), 107-114.
- Wang, F., & Hannafin, M. J. (2005). Design-based research and technology-enhanced learning environments. *Educational Technology Research and Development*, 53(4), 5-23.
- Wang, R., Scown, P., Urquhart, C., & Hardman, J. (July 2012). Tapping the Educational Potential of Facebook: Guidelines for Use in Higher Education. *Education and Information Technologies*.
- Ware, C. (2004). *Information Visualization: Perception for Design*. China: Elsevier.
- Wegerif, R. (2007). *Dialogic, Education and Technology: Expanding the Space of Learning*. New York: Springer.
- Wegerif, R. (2010). *Mind expanding [electronic resource] : teaching for thinking and creativity in primary education*. Berkshire: Open university.
- Welle-Strand, A., & Thune, T. (2003). E-learning Policies, Practices and Challenges in two Norwegian Organizations. *Evaluation and Program Planning*, 26, 185-192.
- Weller, M., Pegler, C. & Mason, R. (2005). Use of innovative technologies on an e-learning course. *The Internet and Higher Education*, 8(1), 61-71.
- Wellington, J. (2000). *Education Research Contemporary Issues and Practical Approaches*. London: Continuum.
- Welsh, E. (2002). *Dealing with Data: Using NVivo in the Qualitative Analysis Process*. In F. Q. Sozialforschung (Eds.), *Forum Qualitative Research* (Vol. 3, Available from <http://www.qualitative-research.net/index.php/fqs/article/view/865>)
- Westera, W., Hommes, M. A., Houtmans, M., & Kurvers, H. J. (2003). Computer-Supported Training of Psycho-Diagnostic Skills. *Interactive Learning Environments*, 11(3), 215-231.
- White, D. S. & Cornu, A. (2011). Visitors and Residents: A new Typology for Online Engagement. *Peer-Reviewed Journal on the Internet*, 16.

- Wijekumar, K. J., Meyer, B. J. F., Wagoner, D., & Ferguson, L. (2006). Technology Affordances: The 'Real Story' in Research with K-12 and Undergraduate Learners. *British Journal of Educational Technology*, 37(2), 191-209.
- Wolcott, H. F. (1990). *Writing up qualitative research*. London: Sage.
- Woo, Y., & Reeves, T. C. (2007). Meaningful interaction in web-based learning: A social constructivist interpretation. *The Internet and Higher Education*, 10(1), 15-25.
- Wu, W.-H., Hsiao, H.-C., Wu, P.-L., Lin, C.-H., & Huang, S.-H. (2012). Investigating the Learning Theory Foundations of Game Based Learning: a Meta-Analysis. *Journal of Computer Assisted Learning*, 28(3), 265-279.
- Zhang, Q., & Kou, Q. (2012). The Course Research for the Software Program Based on the Constructivism Teaching Theories. *Physics Procedia*, 25(10), 2294-2297.
- Zurita, G., & Nussbaum, M. (2004). A constructivist Mobile Learning Environment Supported by a Wireless Handheld Network. *Journal of Computer Assisted Learning*, 20, 235-243.