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FACEBOOK AS A LEARNING TOOL

by

VASILIKI TIMONIDOU

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Abstract

This MSc dissertation is researching a novel field: the use of Facebook as an academic tool. It reviews the relevant literature, including theoretical papers as well as case studies, in an attempt to collect the available knowledge in the field and to make suggestions for future uses. From the experience that is drawn from the practical employment of Facebook as an academic tool, it seeks to identify the most common features, to draw lessons from their success or failure, and by bringing it all together, to build a 'best practice' model for employing Facebook for academic use. Furthermore, a suggestion will be made for Facebook use in a specific master's class. Interviews with students of the class in question will be used to find out about their particular needs. The conclusion is that there is significant potential in using Facebook, yet there are issues that set limits to its use and need to be considered in advance. Through Facebook students can become more involved in the academic experience. For those who are willing to use it for educational purposes, without being overly distracted by the abundant temptations, Facebook can be a valuable source of academic as well as social benefits. On the part of the instructors, besides a significant amount of time that is required to devote to the initiative, careful planning and a clear idea of the aims and objectives for using Facebook is essential.

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1. Introduction

1.1. Problem statement

It is claimed that there is a new generation of young people, interchangeably referred to as “Net Generation” (Tapscott 1998), “Digital Natives” (Prensky 2001), or “Millenials” (Howe & Strauss, 2000 cited in Oblinger & Oblinger, 2005), which has an advanced relationship with Information Technology (IT). The traditional educational methods are not suited to them and they require more interactive learning methods and hands-on, inquiry-based, learning (Prensky 2001; Tapscott 1998).

Higher education institutions, or so it has been argued, should alter their teaching methods to accommodate this new generation’s needs for greater autonomy, connectivity and socio-experiential learning (McLoughlin & Lee 2007). By doing so, educational institutions hope to recapture their attention and re-motivate them for learning. In response to the ‘Net generation’ thesis, various studies have questioned the existence or the homogeneity of these student groups (Margaryan & Littlejohn 2008; Jones, Ramanau, Cross & Healing, 2010). This suggests that before academic institutions change their teaching methods, more research should be undertaken to explore the students’ actual needs. Whatever the case, it is an undeniable fact, that in our age of the “knowledge based society” students should be proficient users of modern technology when they leave university and enter the workforce.

Social software (otherwise referred to as Web 2.0 tools) constitutes one of the most popular IT phenomena of our time, seen by many as carrying the potential to enrich higher education (McLoughlin & Lee 2007; Visagie & de Villiers 2010). One of the Web 2.0 tools, Social Networking (or Network) Sites (for short: SNS), are considered highly appropriate for teaching purposes. It is claimed that SNS can satisfy the needs of today’s students’ and attract their attention (Roblyer, McDaniel, Webb, Herman & Witty, 2010; Coughlan 2010; Ajjan & Hartshorne 2008). Most students are already using SNSs, although the literature suggests that they do so mostly for socialising rather than education (Madge, Meek, Wellens & Hooley, 2009). Facebook in particular is the

most popular SNS. Therefore, it is a challenge, to find a way to employ Facebook, a tool that students use daily for social/entertainment reasons, that will re-engage them in education and re-motivate them for learning.

1.2. Research scope and objectives

This MSc dissertation will explore Facebook's potential for use in academic education. For this purpose the relevant literature will be reviewed, examining theoretical as well as empirical research results and surveys of students and instructors' opinions. Facebook has been chosen, because of its undeniable prevalence among SNSs in the student population (Ellison, Steinfield & Lampe 2007; Mazer, Murphy & Simonds, 2007; Lampe, Ellison & Steinfield 2008; Martini & Cinque 2011; Ophus & Abbitt 2009; Madge et al., 2009). In the past few years there have been some innovative academic uses of Facebook. Most of these have been initiated by individual lecturers, in an experimental manner, exploring how it can be used in education. We will study these experiences in an effort to extract lessons about how Facebook can be used, the benefits of doing so, possible problems and the most appropriate ways of dealing with them. Several researchers have surveyed student and staff opinions on SNSs and Facebook use in academia, and their findings are a valuable source of information for planning purposes. If we are to consider Facebook for academic use, we needn't make mistakes that others have already made. If there has been a positive experience with a particular use, then it could be replicated. Perhaps new ways of using SNS and Facebook in particular can surface in the future. These are among the questions that will be examined here. A model for employing Facebook is yet to be found, and we will make an effort in that direction.

The aim of this MSc dissertation is to first explore the possible academic uses of Facebook and analyse the relevant issues and benefits that can result. Second, to formulate a set of advice for Facebook academic use that will derive from the above, and last to make a specific suggestion for its use as a learning tool at the class of Project Management, a course taught at the MIS course at the University of Macedonia, Greece.

1.3. Structure of the thesis

The current chapter (**chapter 1**) has been an introduction that defined the problem and explained the study aim.

Chapter 2 will present the methodology that will be employed.

Chapter 3 is a review of the background material related to learning, e-Learning, Web 2.0, e-Learning 2.0, SNS and SNS in relation to e-Learning 2.0. This chapter will also include a general description of Facebook: Its history, statistics and main features.

Chapter 4 will be looking into how Facebook is used by students and academics, and examine their usage patterns. The possible ways for using Facebook for educational purposes will be looked into, as well as some examples of how it has been or could be used. Relevant issues and problems will follow, such as student privacy and the possibility of an adverse effect on academic performance. Last we will list practical ways of employing Facebook for academic purposes.

Chapter 5 presents the results of an analysis of 19 case studies of empirical Facebook academic use, specifically for learning purposes. Their common features are aggregated in an effort to form a 'best practice' model, based on this practical experience.

In **chapter 6** there is a proposal for the specific use of Facebook within the course of Project Management of the MIS course at the University of Macedonia, Greece. This will be derived from the findings of chapter 5 in combination with the particular course requirements, elicited from interviews with the class students.

Chapter 7 will sum up the conclusions and make suggestions for further research.

2. Methodology

2.1. Introduction

Chapters 3 to 5 were written using the methodology suggested by Webster & Watson (2002). Chapter 6 is using student interviews' findings and combines them with the findings of the preceding chapters to make suggestions.

2.2. Description of the methodology

According to Webster & Watson (2002), in order for a literature review to be complete, it should not be confined to one set of journals, one research methodology or one geographic region. For this MSc dissertation, the research was made solely through electronic means. Databases of relevant articles (Scopus, Web of Science, CiteSeer, and Google Scholar) were searched using keywords such as Facebook, education, academic, learning and teaching, in various combinations. A huge number of papers were found, and an initial selection was made based on the relevance of the title/Abstract. Papers that were not available for free download were necessarily excluded. Only papers written in the English language were considered, due to personal linguistic limitations of the author. The second step involved scanning the bibliographical references of the first set of papers, which resulted in yet more material. Only few more relevant papers were found by 'going forward' i.e. searching for articles that had cited articles already selected (this possibility is available in Google Scholar).

One of the basic elements of the Webster & Watson (2002) methodology is that a literature review is concept-centric. It should synthesize the relevant literature based on the topic that is covered. Webster & Watson (2002) suggest compiling a concept matrix, noting which concepts are found in every article. Thus, after all the reading is done, this concept matrix shows which concept can be found in which paper. In this MSc dissertation one concept would be, for example, the method of employing Facebook for education; so each such method is described and discussed using information derived from all the authors who have written about it. The same approach was used when exploring the patterns of Facebook use, the benefits and limitations related to Facebook

academic use, etc. Special effort was placed to collect as many sources as possible before making a statement.

The case studies (of empirical Facebook use), presented in Chapter 5, were selected with the following criteria: **Facebook had to be used for university-level education and it had to be used specifically for promoting learning (i.e. not for marketing reasons)**. In total, 19 case studies were selected. Their content was analysed and common concepts were determined. Factors that could play a role in the success of the experiment were also explored. A table was constructed, in the form of a ‘checklist’ about **what was found in each case study**. This made the characteristics of each one comparable with those of the others. Whenever some information was not mentioned in the paper, it was asked via personal email to the corresponding author (16/19 responses received). This was necessary to allow for comparison. The common elements include (among others): ways of using Facebook, tools employed, class size, faculty, year of studies, reasons for using Facebook, benefits expected, problems, results and suggestions. They will be presented in a way that brings out the most common practices and there will be an effort to link them to the results (e.g. was Facebook more successful for large or small classes?) in order to elicit a ‘best practice’ model. The limitation in this plan, is the difficulty in specifying the degree of each case study’s ‘success’, since there is no quantitative measure. Student participation/activity rates, or student satisfaction (as measured by surveys at the end of the semester) could be a criterion, but the first are not easily measured and the second is of qualitative nature. Another criterion might be the comments made by the author of each paper, as well as the repetition of the ‘experiment’.

As for chapter 6, where a specific proposal is made, structured interviews with the students currently taking the “IT Project Management” course are used, because of the small size of the population (8 students). The way they actually used Facebook and their suggestions for improvements, together with findings from the previous chapters about best practices and a ‘model’ of employing Facebook that will result from Chapter 5, should help formulate the final suggestion for this class.

2.3. Previews Literature review on Facebook use by students and teachers

Among the papers that were examined there is only one literature review, titled “Students’ and teachers’ use of Facebook”, published in 2011 and written by Khe Foon Hew. It is a review of 36 papers of empirical (rather than theoretical) nature that were published between 2005 and 2010.

Both Hew (2011) and the current study look into students’ Facebook usage patterns, such as time spent on Facebook (FB) and the number of FB Friends. The relationship between FB use and academic grades is another common topic. What the current study is trying to add to the previous literature review is the following: First it will examine some *more recent* papers, which might indicate newer, additional, or contradictory findings to previous ones. Secondly, the papers that were reviewed previously were based on student surveys, questionnaires or content analysis. In the current paper we will also take into account *case studies of actual implementation of FB use for learning purposes*. Furthermore, *additional issues* will be examined, such as:

- Facebook adoption rates
- Instructors’ FB usage patterns
- Communication between instructors and students on FB
- Students’ and instructors’ opinion about using FB for educational purposes
- The strengths of FB as an academic tool
- Ways that FB could be employed in the academic realm.
- Findings from non-Anglo-American studies

This study focuses on the potential of FB for academic use. It will mention, but not concentrate on the information that students disclose on FB. This study examines the social and the educational motives for using Facebook, but is not attempting to provide a complete list of the motives per se. FB uses such as keeping in touch with friends, making new friends, having fun, etc. would be listed under the social uses, rather than seen as separate motives for FB use. At the end of chapter 4 we will provide a comparison of the findings on the common topics between the two literature reviews.

3. Background Material

3.1. Introduction

This Chapter provides some theoretical background that is necessary to understand the terms and issues that will be examined. It presents the learning theories that are relevant for the purposes of this research and discusses the concept of e-Learning and how it has evolved in its short history. Then we are ready to get into the subject matter: discussing Web 2.0, the technological developments that have revolutionized social contact on the internet. Social Network Sites are described and their potential for e-Learning is explored. Last comes a part about Facebook, the particular Social Network Site that will be the focus of this dissertation: Facebook, the most popular SNS, especially among students, will be presented.

3.2. Web 2.0

The term Web 2.0 was coined in 2004 by Dale Dougherty, vice president of O'Reilly Media Inc.¹, during a meeting (Anderson, 2009). **Tim O'Reilly**, founder of the company, consequently published a paper ("What is Web 2.0: Design Patterns and Business Models for the Next Generation of Software", 2005) explaining what was meant by the term. Perhaps it is for this reason that he is often quoted as the originator of the 'Web 2.0' term, the meaning of which, however, hadn't been clearly understood. It is also argued that the term 'Web 2.0' has "most probably been overused with the aim of providing certain activities, applications, training courses, etc. with special and superior characteristics" (Fernández & Gil-Rodríguez, 2011, p.29), implying that it has been used to ascribe higher-order attributes (which they do not possess) to certain entities. Other terms used to characterize Web 2.0, as cited in Greenhow, Robelia & Hughes (2009, p.247), include:

- "relationship" technologies (Schrage, 2001, para. 6),
- "participatory media" (Bull et al., 2008, p. 106),

¹ For more information about O'Reilly Media: <http://oreilly.com/about/>

- “social digital technologies” (Palfrey & Gasser, 2008, p. 1),
- “Read/Write Web” (McManus, 2005, para.1)

Tim O’Reilly saw Web 2.0 as an active ‘architecture of participation’ rather than a site of passive consumption (Selwyn, 2007). Gregory & Tynan (2009) note that Web 1.0 tools are “purely for retrieving information from static websites” (p.378), so Web 1.0 can be described as a medium that simply distributes content. On the contrary, Web 2.0 is “a participatory platform in which users are producers of content and active contributors” (Parscal, 2010, p.80).

Anderson (2007) looked into whether Web 2.0 is different from Web 1.0 and whether it should be considered a revolution or not. He notes that many characteristics of Web 2.0 existed within pre-2004 tools already. Ajjan & Hartshorne (2008) also contend that the Web 2.0 “read/write” idea is not new and paraphrase Alexander (2006) in saying that: “Prior to wikis, blogs, social bookmarking and social networking, there were listservs, groupware, and web-based communities linking people with common interests. However, the openness of these new applications, allowing anyone to modify content, makes Web 2.0 technologies different” (p.72). Barbieri & Giacché (2009) agree with this view, explaining that “Web 2.0 is not a new software tool (Web 1.0 was, arguably, a new software tool, the browser, superimposed on an existing infrastructure, the internet), it is a new way of using the web” (p.1). According to the above, it follows that the Web evolved from “Read Web” to “Read/Write Web”. This is something actually closer to the original vision of **Tim Berners-Lee**, the creator of the World Wide Web, as will be explained. Sir Timothy Berners-Lee is quoted in Anderson (2007) saying that “Web 2.0 is really just an extension of the original ideals of the Web that does not warrant a special moniker” (p.2) and that “Web 1.0 was all about connecting people. It was an interactive space, and I think Web 2.0 is of course a piece of jargon, nobody even knows what it means” (p.5). Tim Berners-Lee originally intended the web as a read/write environment, where the same software would be used for accessing as well as publishing pages. Anderson (2007) quotes him saying in a podcast published on IBM’s site that “everyone would be able to edit in this space” (p.5). Albion (2007) describes that when browsers were developed for general use, this aspect was not emphasized, and most browsers did not include an editing facility with the exception of Netscape. Anderson (2007) stresses that none of the early browsers supported edit functions,

including Mosaic, which became the Netscape browser. It was a later (1996), additional piece of software called Navigator Gold that provided an html editor, yet most users didn't have access to such facilities (Paul Anderson, personal email communication 17/8/2011). He explains that the non-inclusion of an edit function would speed up the process of its adoption by CERN, where Berners-Lee was working at the time he developed it. So, what people came to know as the World Wide Web was in fact something less than the original idea. In that respect, it can be argued that web 2.0 is a return to the original vision. From the users' viewpoint, however, there is a qualitative difference between web 1.0 and 2.0 (Albion, 2007) in that they can **create, edit, and re-distribute their own content, in a huge (global) scale**. The internet user is active rather than passive. It seems that a few decades had to pass until the web could be used in such manner, the manner its inventor had in mind. Bartolomé (2008) also explains that "Web 2.0 is not a new web, with new languages or technology, new sites, new pages" (p.2) and that "You cannot 'go to' Web 2.0, nor subscribe to it, register or log into it. It is a concept used to refer to sites and resources or developments that have some common characteristics" (p.1).

The above supports the position that Web 2.0 is not something intrinsically different from Web 1.0. What then are the most important things that web 2.0 has to offer? What is new/better?

Barbieri & Giacché (2009, p.1) describe Web 2.0 as "an environment and a language encompassing many fields: communicating (instant messaging), sharing (blogs), buying and selling (online auctions), exchanging (peer-to-peer), creating multimedia content (Flash), meeting people (3D worlds), collecting (downloads), co-ordinating (wikis), evaluating (reputation systems), searching (search engines), programming (modding), socializing (chat rooms), and learning (surfing and browsing)". Selwyn (2007) reports that "for proponents of Web 2.0 most Web 1.0 applications from the 1990s were concerned primarily with the passive delivery of top-down content generated for a mass audience and then broadcast from 'one-to-many'. In contrast, Web 2.0 applications are seen to allow users to participate directly in the creation, refinement and distribution of shared content" (p.2). Similarly, Attwell (2007) suggests that Web 1.0 was a 'push' technology, whereas Web 2.0 is a two-way process. Bhatt, Chandra & Denick (2008) perceive Web 2.0 as an "even further development in communication as it allows

individuals the ability to publish dynamic content with its various tools, like RSS feeds and blogs. The Web 2.0 environment has enabled every net-citizen to modify, create, contribute and share personalized web content” (p.1). So, power has been transferred to the users, as they now have the ability to generate content through Web 2.0 tools. For Barbieri & Giacché (2009) “The collective use of all these tools represents its core, its newness” (p.1). “This is the crucial difference: the momentous shift from the user as consumer to the user as producer (pro-sumer)” (p.2). Users can upload their own material (e.g. photos, videos) and share it with others. Content can be edited and re-distributed. Barbieri & Giacché (2009) further explain that “the web 2.0 new technology, widespread and easy to use, allows strong interactivity, facilitates and encourages a continuous evaluation of the stuff found in the web” (p.1). All this can be summarized by the following statement (Downes, 2005):

“In a nutshell, what was happening was that the Web was shifting 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. And what people were doing with the Web was not merely reading books, listening to the radio or watching TV, but having a conversation, with a vocabulary consisting not just of words but of images, video, multimedia and whatever they could get their hands on. And this became, and looked like, and behaved like, a network”.

The qualities of Web 2.0 are characterised by what Anderson (2007) terms as **six “big” ideas**, which are the following:

- Individual production and User Generated Content
- Harness the power of the crowd
- Data on an epic scale
- Architecture of participation
- Network Effects
- Openness

Web 2.0 has been described as a form of social revolution for bringing forth a new way to connect, collaborate, learn and create meaning. As Downes (2005) notes: “what is important to recognize is that the emergence of the Web 2.0 is not a technological revolution, it is a social revolution”. Indeed, the shift from web 1.0 to web 2.0 is most clearly evident in the wide acceptance of **social networks**. They have been so massively adopted by people, that the Web 2.0 concept is mostly associated with them. In the last

decade, social networks have been widely adopted by internet users, and actually, they have become an indispensable part of daily life for many.

Web 2.0 tools include Weblogs (Blogs), Podcasts, Videocasts, Wikis, Social network sites, Bookmarking, Tagging, Photo-sharing, Virtual gaming environments, Content Aggregators (RSS feeds).

It is not within the scope of this MSc dissertation to present all Web 2.0 tools. Rather, only Social Network Sites will be described, and **Facebook** in particular, will be the central theme of the chapters 4 through 6. SNSs are probably the most important tools of Web 2.0, because of their tremendous adoption rates among people and also because many of the other tools are used in them. For instance, RSS feeds, tagging, photo-sharing, blogging, games and wikis can be found in SNSs. “Social networking sites (SNS) are perhaps the most socially significant of the Web 2.0 applications, particularly as the number of users continues to escalate and as they converge a range of other Web 2.0 phenomena” (Beer & Burrows, 2007).

Table 1: Summary of main terms

Terms	<ul style="list-style-type: none"> • Web 2.0 • relationship technologies • participatory media • social digital technologies • Read/Write Web
Six “big” ideas	<ul style="list-style-type: none"> ➤ Individual production and user-generated content ➤ Harness the power of the crowd ➤ Data on an epic scale ➤ Architecture of participation ➤ Network effects ➤ Openness
Tools	<ul style="list-style-type: none"> ✓ Weblogs (Blogs) ✓ Podcasts ✓ Videocasts ✓ Wikis ✓ Social network sites ✓ Bookmarking ✓ Tagging ✓ Photo-sharing ✓ Virtual gaming environments ✓ Content Aggregators (RSS feeds)

Having presented the main characteristics of Web 2.0, and explained the academic debate about it, we will now turn to learning and explore the connection between Web 2.0 and learning as well as the potential that exists within bringing the two together.

3.3. Learning e-Learning and e-Learning 2.0

3.3.1. Introduction

In this section we will discuss the current learning theories, and particularly the **constructivist social theory**, which is said to fit very well with the latest developments in **social media**. We will describe earlier ways of employing technology in education, using Web 1.0 tools, and conclude with how education can benefit from Web 2.0 through the application of the ideas of social constructivism, in what has been termed as **e-Learning 2.0**.

3.3.2. Learning theories

The traditional (instructivist) methods of learning treat students as **passive** receivers of information: Instructors provide knowledge and students are expected to absorb it. There are, however, newer learning models. Constructivist theories, and social constructivism in particular, advocate that learning is a social process (Kim, 2001), where learning is **constructed** gradually, through inter-personal interactions and the sharing of information. According to these theories, learning should be social and take place collaboratively (Phillips et al., 2007). Active participation is also considered essential to it. The following quote sums up the above very well:

“Reading and listening, the passive pedagogical practices of the modern model, no longer form the foundation of meaningful learning—and probably never did. Students learn best by doing and by having clearly defined goals established for them, and following the constructivist theory on learning, students gain meaning through engaged learning, interacting socially, and constructing knowledge (Fink, 2003; Jonassen, Howland, Marra, & Crismond, 2007; West & West, 2009)” (Kulmala & Stanton, 2009, p.35).

The time that is required to actually construct (rather than receive) knowledge, is longer than to acquire it through traditional one-way instruction. Instructionist methods are more time-efficient (Meyer, 2003). However, although a constructivist model of education may take more time, it can provide greater benefits (Meyer, 2003). For instance, it is expected to promote the retention of knowledge.

Connectivism has been termed by Siemens (2005) as “a learning theory for the digital age”. It is considered very influential for current educational developments. Under the assertion of the connectivism theory that “learning is a process that occurs within nebulous environments of shifting core elements, not entirely under the control of the individual” (Fernández & Gil-Rodríguez, 2011, p.29 citing Siemens), the key for learning is for the student to establish connections to learning resources (Fernández & Gil-Rodríguez, 2011). These can be present “in multiple contexts, from more or less formal communities, to actual networks or daily events that surround the student” (Fernández & Gil-Rodríguez, 2011, p.30). Taking a broadly connectivist view of e-Learning, Parslow, Lundqvist, Williams, Ashton & Evans (2008, p.11) list the following as key ingredients of successful learning in today’s connected, highly dynamic environment (adapted from Siemens’ original article):

- Knowledge exists in a diversity of opinions. Discussion and dialogue are therefore key components in learning;
- Learning is a process of connecting information sources, of recognising and abstracting patterns arising from those connections;
- Nurturing and maintaining connections is necessary to facilitate continued learning.

Critics, however contend that connectivism is not a learning theory, but only a pedagogical viewpoint, driven by the availability and convenience of current technology tools (Verhagen, 2006, cited by Parscal, 2009).

3.3.3. e-Learning: Education and the use of technology

Educators have long searched for new technology to enhance learning (Ophus & Abbitt, 2009). In the past, education has used technology such as tapes or radio broadcasting for the distribution of leaning material (Schroeder, Minocha & Schneidert, 2010). These tools however are for methods of traditional teaching, where the instructor simply reproduces the content and transmits it to the students. A simple definition of e-Learning is ‘learning through the use of electronic means’, and it is mostly implied that these means are digital and on-line. Early e-Learning efforts replicated traditional

learning models and simply placed them in an on-line environment (McLoughlin & Lee, 2007). The bulk of e-Learning across higher education has reproduced “old models of teaching leading to largely passive online learning opportunities” (Jamieson cited in Oradini & Saunders, 2008, p.1). Even today, most faculty still use technology for content delivery, grade delivery and basic communication (Maloney 2007 cited in Ajjan & Hartshorne, 2008).

Why has e-Learning been replicating old teaching models? Faculty reluctance seems to be a reason (Roblyer et al., 2010; Sendal et al. 2008; Visagie & deVilliers, 2010). The lack of a unifying theoretical model may have also prevented education designers from adopting them. Oradini & Saunders (2008) suggest the following reasons for the little use of interactive e-Learning (p.1):

- the fact that educators were educated in the old ways
- lack of understanding of the available technologies and their affordances
- the belief that e-Learning is not a good substitute to face-to-face education
- the perception that students prefer face-to-face education
- insufficient time for staff to understand the technology and to think how to incorporate it into their own teaching context

Many of the e-Learning initiatives since the 1990s have been using Web 1.0 tools, such as those that can be found within Learning Management Systems (LMS) or VLEs (Virtual Learning Environments). These two terms are used interchangeably in the literature although they are not the same. They are used by educational institutions as e-Learning tools that support teaching. Most of these tools, however, are staff-led and work best for a student who is working alone (Oradini & Saunders, 2008). The two most popular commercial examples of LMS are Moodle and Blackboard². They provide tools such as virtual notice-boards, document depositories and collaboration tools such as discussion forums and visual white boards. They are hosted by the individual institutions and provide secure access rights and audit trails, so they can be also used for formal assessment (Schroeder et al., 2010). Although LMS provide some social tools (e.g. wikis, discussion forums and blogs) they are too rigid and formalized in their

² <http://moodle.com> and <http://blackboard.com>

structures, which may lead to the system's domination (Dron, 2006), and are thus not appropriate for dynamic initiatives (Schroeder et al., 2010). Most institutional LMS replicate old models. Although universities have used LMS for years in an effort to foster collaborative learning in an online setting, they tend to do so in a top-down fashion (Parslow et al., 2008). However, there are tools that are better for the communication and sharing of information between students and as a result, students don't use the LMSs much, other than for downloading class material. In a survey of students at the University of Pisa, Martini & Cinque (2011) found that the use of Moodle was limited to downloading files and resources (89.5%).

3.3.4. Towards e-Learning 2.0

Recently, students are starting to employ a bottom-up approach, by using social networks like Facebook (Parslow et al., 2008) for education. Even when they have access to an institutionally provided VLE, the widespread adoption of social networks has facilitated the use of tools that students can select to support their learning, thereby creating a PLE (Personal Learning Environment) (Downes, 2010). Students often ignore the VLE and choose their own tools to support their learning (Conole et al., 2006). Using social networks, which they select by themselves, students are more likely to learn in the way that it was intended for institutional VLEs (Parslow et al., 2008, p.14). Anderson (2007) recounts the case of a lecturer explaining that his students looked at the class material at the VLE and then went straight to Facebook in order to discuss it. This is a clear signal, from the students' side that Facebook, a SNS (which is a Web 2.0 tool), is offering something that the VLE cannot. "Constructionism suggests that learners will learn better when involved in creating something that others will see, use and review. As such, given that users are more likely to write content to Facebook, it should be much easier to use Facebook as an educational tool than Blackboard" (Parslow et al., 2008, p.11). The 'net generation' of students is said to be forcing the model of teaching to change from 'teacher-focused' to 'student-focused' (Tapscott 2009 cited in Kulmala & Stanton, 2009, p.34). Whether it is the 'net generation' or the availability of the technology that is pushing for changes is another question! Gunawardena, Hermans, Sanchez, Richmond, Bohley & Tuttle (2009) suggest that: "The changes in technologies are driving changes in human behaviour, interactions and knowledge acquisition" (p.1). Martini & Cinque (2011) agree with this viewpoint:

“Web 2.0 is an important driver of innovation in learning, as it enables different types of learning and teaching settings” (p.69). Because Web 2.0 applications promote social connectivity, they can enable learning approaches that are based on constructivist and connectivist learning theories. Social software enables community-based collaborative learning (McLoughlin & Lee, 2007). It can even be claimed that: “Web 2.0 provides support for connectivism, and that might just be an educational revolution” (Parslow et al., 2008, p.14). Generally, technology can drive educational reform, because it makes possible things that were previously impossible. Web 2.0 technologies are enabling new types of learning, as online communication between people is wider than ever before.

This particular technological evolution has been so fast-paced, that “recent developments in Web 2.0 technologies are far outpacing the development of theoretical frameworks for their utilization in education and training”, as stated by Gunawardena et al. (2009, p.1). Martini & Cinque (2011) agree, noting that there is no unifying theory on how to use Web 2.0 in education, but rather an unending parade of tools which can be puzzling, even for a teacher who is well acquainted with technology. Szwelnik (2008) suggests that a new teaching practice for enhancing education using social software needs to be explored, so as to utilize the new technology fully. Yet, we should take care not to simply reproduce old learning methods, but to use the new opportunities afforded by emerging technologies (Attwell, 2007). Overall, it can be said that Web 2.0 has “developed some new ideas for Education identified as eLearning 2.0” (Bartolomé, 2008, p.1). Today there is a need to find ways to employ social technologies in a way that utilizes the latest theories of learning, and so to produce new educational models based on the current situation: technological affordances and student needs/preferences in order to achieve the maximum possible benefit.

“while these tools [Web 2.0] show pedagogical promise, “best practices” models are needed to further facilitate the adoption of these emerging technologies as tools for improving teaching and learning in higher education” (Ajjan & Hartshorne, 2008, p.79).

It is important to understand the students’ needs and their preferred way of using social software, in order to find the best way to increase student engagement and participation in higher education (Szwelnik, 2008). We should try to assess the impact and the effectiveness of these tools for learning, so as to support the best ones (Parslow et al., 2008) in an effort of maximizing the educational benefit for learners. Anderson (2007)

suggests that a possible integration of VLEs and Web 2.0 technologies should be considered, to combine their strengths.

3.3.5. e-Learning 2.0

In this part we will describe the features of e-Learning 2.0.

Tools

Web 2.0 tools that can be used for educational purposes in and out of the classroom include blogs, wikis, online video, podcasts and user-generated websites (Kulmala & Stanton, 2009), chat rooms, discussion forums and collaborative support tools (Liccardi, Ounnas, Pau, Massey, Kinnunen, Lewthwaite, Midy, & Sakar, 2007), blogs, wikis, social networking sites, media sharing applications and social bookmarking utilities (McLoughlin & Lee, 2007).

Any time, any place

Computer-mediated communication (CMC) enabled students to access their online classroom “anytime, anywhere” (Wu & Hiltz, 2003). But Web 2.0 tools, together with modern technological devices (such as mobile phones, PDA, iPod) enable learning at any time and any place: Not only at university or at home, but literally all throughout the day and night and at any place. “In Web 2.0 the difference between study times and other times seems to disappear” (Bartolomé, 2008, p.1). This is an important breakthrough within e-Learning 2.0.

Collaboration

The pedagogical potential of social software tools stems from “their affordances of sharing, communication and information discovery” (McLoughlin & Lee, 2007, p.666). Web 2.0 tools provide new possibilities for communication and collaboration. Collaborative learning is extended by Web 2.0 tools and social networking approaches (Gunawardena et al., 2009, p.1). Social software (such as wikis, social networking and bookmarking sites) provides a platform for many-to-many interactions, thereby enabling students to learn interactively and collaboratively (Schroeder et al., 2010, p.159). For that reason, social software is seen as a way to engage learners (Schroeder et al., 2010, p.169).

“A common purpose of employing social software applications is to support and engage learners. Integrating social software application into learning and teaching practices enables new forms of interactive and collaborative learning and can therefore trigger significant educational innovations” (Schroeder, Minocha & Schneidert, 2010, p.169).

Student-centric

Web 2.0 tools support student-centric learning. Students can control their own learning, connect with their peers and produce new insights and ideas through inquiry (McLoughlin & Lee, 2007, p.668). This too is in accordance with the constructivist theory that proposes a student-centric approach (Patel, Gali, Patel & Parmar, 2011).

Content and Context

In the past, students learnt from the available media and personnel (textbooks and professors). Now there is an “unframing of educational content” (Kulmala & Stanton, 2009), in the way that content is no longer scarce: it is available on the internet for whoever takes the time to search for it. The role of the instructor under methods of teaching that utilise Web 2.0 tools is very different from what it is in traditional teaching. The instructor is not meant to provide the learning, but the context in which the learning occurs (Kulmala & Stanton, 2009), and context is central to learning, according to the social constructivist theory (McMahon, 1997). Contextual teaching engages students in activities that help them connect their academic learning to real-life situations and problems (Kulmala & Stanton, 2008, p.22):

“Digitizing and blending their classroom experience sparked active engagement in key academic skills like inquiry, analysis, problem-solving, critical thinking, reflection, and audience perception by breaking down the walls of the typical, modern educational experience. The students, then, were liberated to learn by engaging in a model of education that follows a real-life, work-related experience” (Kulmala & Stanton, 2009, p.40)

The role of the instructor

Web 2.0 tools require promotion and support in order to be implemented successfully (Albion, 2007). Active experimentation and reflective thinking encourage high-level student participation in the learning process (Biggs, 2009). Therefore, if educators can find a way to engage students in participatory online activities that require reflective thinking, which will attract and motivate them, learning can be enhanced (Balaji & Chakrabarti, 2010, p.2). Learners might be more attracted if they are producers rather than only consumers of knowledge (Anderson, 2007). Students can “create, share ideas,

join groups, publish, create their own identities” (Attwell, 2007, p.4). For example, Balaji & Chakrabarti (2010) have discussed the role of the instructor in an **Online Discussion Forum (ODF)**. They claim that an instructor can support effective learning by facilitating appropriate interactions and discussions in the online environment. The instructor can keep the discussion on track, contribute special knowledge and insights, weave together various discussion threads and maintain group harmony (Rohfeld & Hiemstra 1995 cited in Balaji & Chakrabarti, 2010, p.6). The instructor is expected to stimulate critical thinking and motivate students by initiating interesting and relevant topics and to design online activities to promote participative inquiry and the construction of knowledge. High levels of reflection require students to critically analyse the new knowledge, integrate it with old knowledge and apply it to various situations thereby fostering deep levels of learning. The instructor can play a very positive role in the ODF by engaging the students in reflection, thereby helping them to construct new knowledge (Balaji & Chakrabarti, 2010, p.6).

Blended learning

ICT has been used for distance education, yet it can be used to supplement in-class learning. “Also known as “hybrid” or “mixed” learning, blended learning integrates face-to-face and online learning in a pedagogically sound manner” (Swan, 2009, p.1). Web-based learning can support and complement face-to-face teaching (Oradini & Saunders, 2008). ICT “is being increasingly used along with the face-to-face lectures to augment and support classroom learning” (Balaji & Chakrabarti, 2010, p.1). Implementing Web 2.0 technologies to supplement in-class instruction can create an interactive, collaborative learning experience for students with the use of media they are already familiar with (Ajjan & Hartshorne, 2008). Blended learning involves the use face-to face teaching as well as ICT tools:

“As more and more learners enter college as “digital natives”, the issue of blended learning across the curriculum and utilizing both interpersonal and online communication will become more and more significant” (Kulmala & Stanton, 2009, p.40).

Table 2: The evolution from e-Learning 1.0 to e-Learning 2.0

Learning 1.0	Learning 2.0
<ul style="list-style-type: none"> • Formal & Structured Learning • Instructor Led, Web- Based, Virtual & Blended • Command & Control; Top-down, Push • Centralized Content Creation 	<ul style="list-style-type: none"> • Informal & Collaborative Learning • Blended, Blogs, Wikis, Q&A, Search • Bottom-up; Peer to Peer, Pull • Grassroots Content Creation

<ul style="list-style-type: none"> • Management hierarchy • Taxonomies • Scheduled, Planned • Company-identified Experts • Managed Formal Events 	<ul style="list-style-type: none"> • Mentoring, Knowledge Networks • Tags • Real-time, Just in time • Community identified Experts • Enabled Knowledge Exchange
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(Source: Gunawardena et al., 2009, p.2)

3.3.6. Unresolved Issues

There are certain issues related to the use of social software in education. They range from alleged plain ineffectiveness and differing student needs to the difficulty of adapting new models and the possibility of serious legal implications.

Schroeder et al., (2010, p.160) warn that there may be risks to the individual student, the course or the whole institution associated with the adoption of social software. They argue that although issues like spamming, stalking and cyber-bullying related with social software have been noted already, we need to be aware of the **particular risks of using social software within an educational context**. They point out that in order to be able to leverage the benefits that social software has the potential to offer, and apply it in a sustainable way, educators should be aware of the risks involved –risks that could mar the initiative - so as to be able to take the necessary measures to mitigate them. For instance, risks can be as serious as legal implications for the hosting institution (p.169). Anderson (2007) points to the risk of some students being so un-motivated that may no longer be attracted by the qualities of Web 2.0 tools, once these are integrated in the educational process (p.33). It is also argued that students have different learning styles, which may influence their preferences toward the use of Web 2.0 tools (Ophus & Abbitt, 2009, p.3), that is, some might be more responsive to different models of instruction, which makes it necessary to model education in a way that accommodates all students.

In this MSc dissertation we will not concentrate on the risks of using Web 2.0 tools in general in education, but rather deal with the particular risks of employing Facebook in education, which will be discussed in Chapter 5.

Below is a list of the strengths, weaknesses, opportunities and threats (in the form of a SWOT analysis) of social software use in education, taken from Schroeder et al., (2010, p.163).

SWOT analysis of social software use in education (from: Schroeder et al., 2010, p.163)

Strengths

- Building social relationships
 - Building community spirit among students
 - Overcoming isolation and geographical distance
 - Development of support mechanisms
- Improved learning
 - Collaborative learning
 - Reflective learning
 - Independent learning and problem solving skills
 - Development of online communication skills
- Enhanced communication between students and educators
 - Early invention and almost real-time feedback or support
 - Improved relationship between educators and students
 - Better understanding of students' needs

Weaknesses

- Workload issues
 - Workload issues for educators
 - Workload issues for students
- Limitations in the quality of interaction
 - Selective or disruptive interaction among students
 - Limited socializing
 - Lack of trust in peer feedback
- Uncertainties of ownership and assessment
 - Assessment of collaborative activities
 - Ownership issues of content in public or collaborative spaces

Opportunities

- Showcasing work to the public
 - Incentivizing students to create high quality
 - Contribute to employability
- Creating and maintaining communities
 - Development of alumni communities
 - Social software tools help to foster cross-institutional collaborations

Threats

- Unable to support and ensure the reliability of the applications
 - Difficult to ensure reliability of the service
 - Difficult to adapt publicly available tools
 - Resources may be misappropriated or may even disappear
- Consequences of illegitimate use
 - Publishing of illegitimate content by students may affect the institution's credibility
 - Protect the student space and their interaction from outside interventions
 - Protect the anonymity of the students

3.4. Social Network Sites (SNSs)

3.4.1. Introduction

In this section we will define Social Network Sites (SNSs) and describe their functions. Next we will explain the way they are used and provide some brief historical data. This will be followed by a list of the most popular SNSs and lastly an analysis of SNSs' role in peoples' lives.

3.4.2. Definition of Social Network Sites (SNSs)

SNSs are defined by boyd & Ellison (2007, p.2) as:

“web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system”

The same scholars use the term "social network sites" rather than "social networking sites", which is also found in the literature. They explain that 'Networking' emphasizes relationship initiation (probably between strangers) which is possible on these sites, however “it is not the primary practice on many of them, nor is it what differentiates them from other forms of computer-mediated communication” (boyd & Ellison, 2007, p.2). Following from the above, SNS will stand for “Social Network Site” in this MSc dissertation. Gunawardena et al., (2009) define SNSs in a similar way, as online spaces that provide space to their users, which can be customized in the form of personal profiles in order to connect with others.

3.4.3. Description of the main functions of SNSs

When people register on a SNS they first have to “create a profile to represent themselves digitally” (boyd, 2007a, p.2). A profile is similar to an individual home page (boyd, 2007b, p.6). New users are asked to answer questions about themselves, and the profile is generated “using the answers to these questions, which typically include descriptors such as age, location, interests, and an "about me" section. Most sites also

encourage users to upload a profile photo” (boyd & Ellison, 2007, p.3). Members can create an online identity by customising their personal profiles with a range of multimedia elements (McLoughlin & Lee, 2007). A profile contains text, images and video added by the member, as well as “comments from other members, and a public list of the people that one identifies as Friends within the network” (boyd, 2007b, p.6). After registration, users are asked to identify other members of the same SNS, with whom they have a relationship (boyd & Ellison, 2007). These relationships may be called "Friends," or "Contacts," depending on the SNS. “When someone indicates another as a Friend, the recipient receives a message asking for confirmation” (boyd, 2007b, p.6). Most SNSs require bidirectional confirmation for Friendship, but some do not. These one-directional ties are sometimes labelled as "Fans" or "Followers," but many sites call these Friends as well (boyd & Ellison, 2007, p.3). By collecting Friends users create a ‘Friends’ list’ (boyd 2007a, p.2), that is a personal network of connections. These networks can include friends, family and colleagues (Ajjan & Hartshorne, 2008). Connecting with others is also a way of validating one’s identity on line (Donath & boyd, 2004). It is important to note that the term ‘Friends’ is not the same as friends in the common everyday sense (boyd & Ellison 2007). The distinction between ‘Friends’ and friends has been explained by boyd, as cited in (boyd & Ellison 2007). In short:

“The collection of 'Friends' is not simply a list of close ties (or what we would normally call 'friends'). Instead, this feature allows participants to articulate their imagined audience - or who they see being a part of their world within the site” (boyd, 2007a, p.2).

According to boyd (2007b), there are three key features that differentiate SNSs from other types of computer-mediated communication that existed earlier. These are:

- Profiles
- Friends lists or ‘Contacts’
- 'Testimonials', 'Comments' or 'The Wall'

The first two have been described above. The third one is a public commenting feature that allows individuals to make comments on their Friends' profiles, which are then displayed prominently and are visible to anyone who has full access to that profile (boyd, 2007a). This feature has different names on different SNSs but the main idea is

the same in all. Besides leaving public messages on Friends' profiles, SNSs often provide the option of sending a private message (boyd & Ellison, 2007, p.3).

There are varying additional features on every SNS. Most of them have privacy features that allow users to restrict access to their profile (boyd, 2007b, p.6). We will discuss privacy in more detail when we discuss Facebook and its use by students in particular. Several characteristics of SNSs can be found listed in Kayri & Çakir (2010, p.49).

3.4.4. Uses of SNSs

The following have been cited as reasons why people use SNSs, and they are listed below within clusters of related activities.

- **building an online identity** (McLoughlin & Lee, 2007)
crafting a personal representation (boyd, 2007b)
- **interacting with existing contacts** (McLoughlin & Lee, 2007)
staying in touch with friends (Ajjan & Hartshorne, 2008),
making plans (Ajjan & Hartshorne, 2008)
hanging out with friends (boyd, 2007a)
sharing cultural artifacts and ideas (boyd, 2007a, p.2)
communicating with one another (boyd, 2007a, p.2)
connecting with old friends (Mendez et al., 2009)
- **establishing new relationships** (McLoughlin & Lee, 2007)
making new friends (Ajjan & Hartshorne, 2008; Mendez et al., 2009)
- **blogging** (Mendez et al., 2009)
- **flirting with somebody on line** (Ajjan & Hartshorne, 2008)
dating (Mendez et al., 2009)
- **career searching** (Mendez et al., 2009)

People use SNSs mostly to stay in touch with existing contacts rather than meeting new people (boyd & Ellison, 2007; boyd, 2007a; Ellison et al., 2007), as can also be observed from the above list. The fact that SNSs mostly support already existing relationships between members is another feature that differentiates SNSs from earlier forms of public Computer Mediated Communication, such as newsgroups, where members weren't previously acquainted (boyd & Ellison, 2007). Interaction in those forms of CMC was based on a common interest rather than an existing relationship. It was centred on a topic, whereas SNSs are networks built around people. Every user has his/her own, unique network of personal Friends.

3.4.5. History of Social Network Sites

Classmates.com was founded in 1995 and could be regarded as the first official SNS (Ahmed & Qazi, 2011). It allowed people to affiliate with their high school or college and surf the network for others who were also affiliated, but users could not create profiles or lists of Friends until years later (boyd & Ellison, 2007). boyd & Ellison (2007) argue that the first recognizable social network site was **SixDegrees.com**, launched in 1997, because it was the first to combine features such as allowing users to create profiles, list their Friends, and (from 2008) surf the Friends lists. SixDegrees closed in 2000. Its founder, Andrew Weinrich, cited in boyd & Ellison (2007), believes that the reason was that “SixDegrees was simply ahead of its time” (p.4). Although people were already widely adopting the Internet at that time “most did not have extended networks of friends who were online” (boyd & Ellison, 2007, p.4). **Friendster** was another popular site in the history of SNSs. It was launched in 2002 as a dating site and “quickly became popular amongst mid 20/30-something urban dwellers living in the United States” (boyd, 2007b, p.4). In 2005 **MySpace** had become a popular destination, especially for young people wanting to connect to their favourite music groups (boyd, 2007b). The popularity of SNSs is often related to country/language. For instance when Friendster lost its initial audience, it became popular amongst teenagers in Singapore, Philippines, Indonesia, and Malaysia (boyd, 2007b). Orkut and Hi5 were popular in Brazil and India (boyd, 2007b). Age/topic also influence SNS choice. There are SNSs that are targeted to specific audiences, such as teenagers/children aged 13+ (Habbo) or business people (LinkedIn). **Facebook** was launched in 2004 as a SNS exclusively for Harvard University students, but gradually expanded to include high school students, business organizations, and, by 2006, everyone. It has become the world’s most popular SNS, and it will be discussed in more detail in chapter 4.

More than 100 SNSs exist today. A list of SNSs and how their use increased with time can be found in Ahmed & Qazi (2011), a full list of SNSs in alphabetical order is available on Wikipedia, and boyd (2007b) provides a full history of SNSs until 2007, with a young people’s perspective in mind. A timeline of the most important SNSs is given in the next page, followed by a table listing the most popular SNSs by number of registered (or active) users.

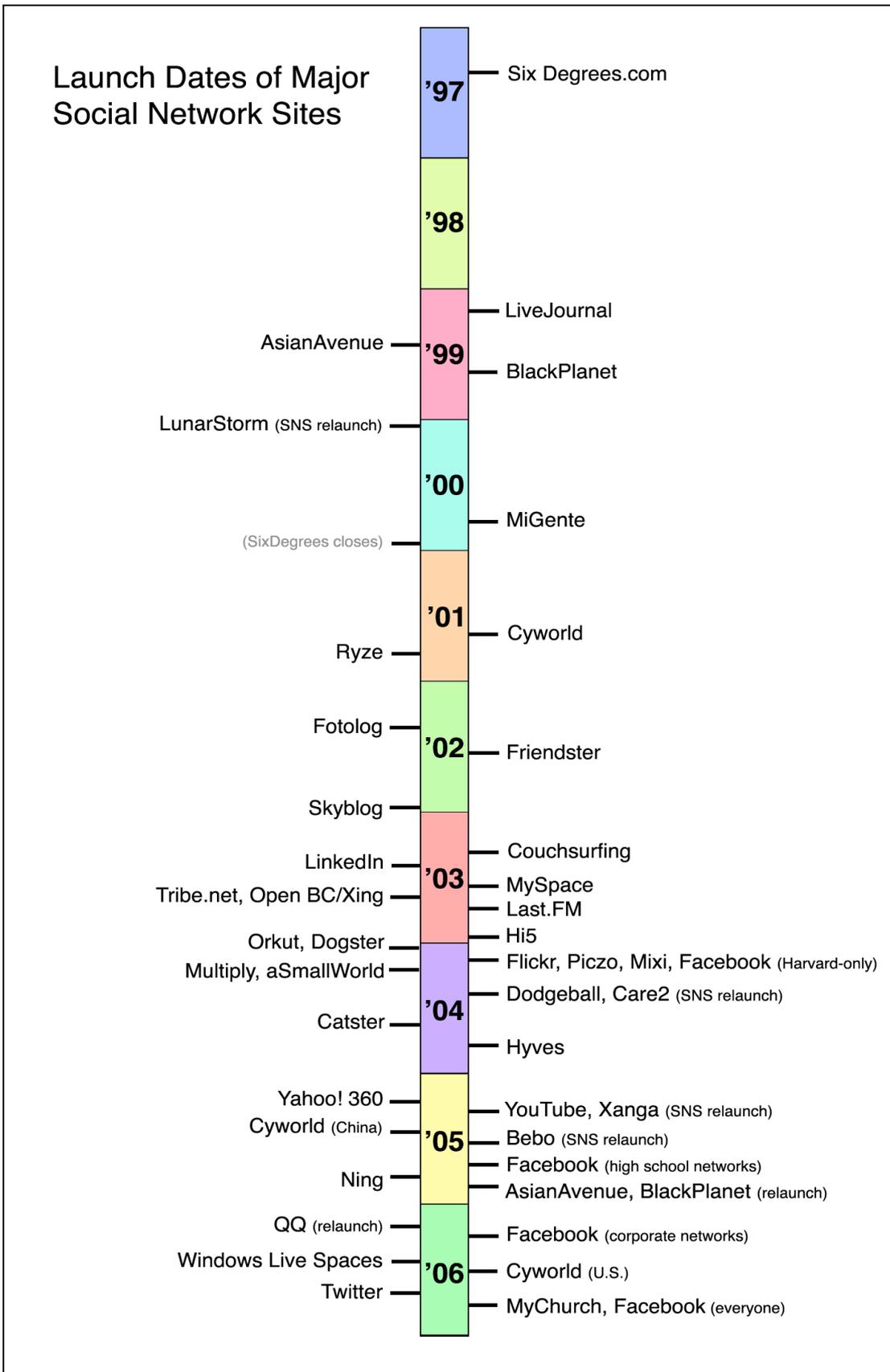


Figure 1: Timeline of the launch dates of many major SNSs and dates when community sites re-launched with SNS features

(Source: boyd & Ellison, 2007, p.6)

Table 3: The most popular Social Network Sites

Social Network Site	Million of registered/active users
Facebook	800 active (11/2011)
Qzone (China)	480 (3/2011)
Habbo (for teens – children aged 13+)	237 (10/2011) http://www.sulake.com/habbo/index.html
Twitter (microblogging)	175 (1/2010)
RenRen (China)	160 (2/2011)
LinkedIn (business & professional)	120 (8/2011)
Windows Live Spaces (MSN)	120 (8/2006)
Bebo	117 (7/2010)
Orkut	100 (10/2009)
Friendster	90 (5/2008)
Badoo	86 (11/2011)
MySpace	63 (2/2011) http://www.bbc.co.uk/newsbeat/12862139
Google+	50 (9/2011)
Classmates (school, college)	50 (11/2007)
Flickr (photosharing)	32 (5/2009)
Xanga (blogging)	27 (8/2006)
Hi5 (gaming)	25 active (11/2011) http://www.hi5networks.com/
Cyworld (S.Korea)	24 (9/2009)

Data from Wikipedia (http://en.wikipedia.org/wiki/Social_networking_websites) unless otherwise stated.

Anyone who wishes to create their own niche social network site, and to have complete ownership of it, can do so using Ning, which is a platform and hosting service (boyd & Ellison, 2007) introducing itself as “the world’s largest platform for the creation of social websites” (<http://www.ning.com/about/>). Another option is Elgg (www.elgg.org) which describes itself as an “open source social networking engine” that allows anyone to create their own SNS. Elgg software is free to download and use, but hosting is not. Hosting can be self-provided or through hosting services. There is also www.elgg.com, which is a social networking platform, providing full service for a monthly fee. Although Elgg software was developed specifically for education (Bartolomé, 2008), as a social networking approach to e-Learning, it is now used for all types of SNSs. The benefit is that “with Elgg you retain full ownership of your data and content”

(<http://elgg.com/features.php#9>). As Bartolomé (2008) explains “the biggest difference in comparison to traditional software is the control of access to materials” (p.6).

3.4.6. The Role of SNSs in peoples’ lives

Millions of people use SNSs on a regular daily basis. They have become a part of everyday life, and they are integrated in people’s daily practices (Murray, 2008, p.8; boyd & Ellison, 2007). Social network sites are ubiquitous and today’s youth in particular is spending a significant amount of time using them to access public life (boyd, 2007a, p.1). Hundreds of SNSs exist, “with various technological affordances, supporting a wide range of interests and practices” (boyd & Ellison, 2007, p.1). SNSs can connect millions of users, from any place in the world, simultaneously. Boyd (2007a) argues that SNSs are a form of public spaces, to which she refers to as ‘**mediated publics**’ (p.2). She notes the purposes of public spaces in social life: “they allow people to make sense of the social norms that regulate society, they let people learn to express themselves and learn from the reactions of others, and they let people make certain acts or expressions 'real' by having witnesses acknowledge them” (Arendt cited in boyd 2007a). Although mediated and unmediated public life play similar roles in people’s lives (boyd, 2007a, p.2), mediated public life has four unique properties: **persistence, searchability, replicability and invisible audiences** (boyd, 2007a), which have further implications, analysed by boyd extensively in her paper and later referred to by other scholars, such as Cain (2008) and Jones et al. (2011). Persistence implies that the material (e.g. photos) or conversations may be stored indefinitely, searchability means that anyone within that SNS can search (and find) publically available content, replicability allows anyone who has access to material to copy it, and invisible audiences implies that material might reach an unintended audience in real time or later (due to the persistence property). It is argued that “social technologies have altered the architecture of public life” (boyd, 2007a, p.5). Joinson (2003) is cited in Gunawardena et al. (2009) arguing that “tools are more than just something to make a task easier. They change your way of thinking, of approaching a task (and indeed the nature of the task itself), and can reap unimagined wider social changes” which makes them conclude that “the social networking tools we use will change how we think, how we learn, and how we interact with each other” (p.8).

Table 4: Properties of mediated public life, according to boyd (2007a)

Persistence	Material stored indefinitely
Searchability	Anyone can search publically available content
Replicability	Anyone with access to material can copy it
Invisible audiences	Material might reach an unintended audience (now or later)

When it comes to the role that SNSs play on **young** people's lives, boyd (2007a) suggests that they are the primary space that allows them to gather online, so that they can 'hang out with their friends' (p.5). By early 2006, participating in MySpace, (which was the key SNS at the time) was considered essential for being considered 'cool' at school (boyd, 2007b). In 2007 55% of all online American teens (aged 12-17) were reported using SNS (Pew Internet & American Life Project, 2007 cited in Ophus & Abbitt, 2009). Research reports various percentages of student adoption of SNSs, but it is undeniable that they are particularly popular among students. In a study among 1060 first-year students (aged 18-19) by Hargittai (2008) conducted in 2-3/2007 at the University of Illinois, Chicago, it was found that 88% of respondents were SNS users. The most popular sites were Facebook (78.8%) and MySpace (54.6%), followed by Xanga (6.2%). Madge et al., (2009) report that over 95% of British undergraduate students use social networking sites regularly (p.141).

Because of the popularity of SNSs among students, it has been suggested that they could be used as a learning tool. Boyd (2007a) describes the educators' position on SNSs as follows: The conservative ones are skeptical, worried that social technologies will corrupt and destroy today's youth. The majority of educators are confused, hoping that the moral panics and chaos that surround the social technologies will simply disappear. Last, a third group of educators considers it essential to understand and embrace the new social technologies so as to guide youth (boyd, 2007a, p.1). There is but little research on how SNS might be used by higher education institutions (Madge et al. 2009). In the following section we will briefly discuss the possible educational use of SNSs. This will serve as an introduction to the main topic of this MSc dissertation, which is the use of Facebook as a learning tool in the academic field.

3.5. SNSs & e-Learning

3.5.1. The potential of SNSs as educational tools

Social Network Sites have grown tremendously since their inception, and their popularity among university students is undeniable (Bunus, 2010; Ophus & Abbitt, 2009; Schroeder & Greenhow, 2008; boyd 2007b). Although SNSs were originally designed for social uses (Roblyer et al., 2010; Ophus & Abbitt, 2009), they seem to be entering other areas of young people's life, including education (Roblyer et al., 2010, p.135). McLoughlin & Lee (2007) point out that students engage in informal learning in SNSs. Fernández & Gil-Rodríguez (2011) stress that the huge success of social networks "has led to new questions being asked as to the potential of the latter as learning platforms" (p.27). Actually, SNSs have been identified as a technology with potential for a positive impact on teaching and learning. The Horizon Report (which is prepared in collaboration between the New Media Consortium (NMC)³ and the EDUCAUSE Learning Initiative⁴) first noted the emergence of social networking as a viable educational tool in 2005, and the educational possibilities of social networking tools has been a recurring subject since then (Ophus & Abbitt, 2009). Kayri & Çakir (2010) note that because of their features, SNSs are closely related to many pedagogical points of the constructivist approach (p.49). Visagie & deVilliers (2010) recognize that there is an emerging trend in higher education, involving the pedagogical potential and the benefits of SNSs (p.1).

"The traditional model of pedagogy where students sit in a classroom and listen to a faculty member lecture is fading to a more post-modern model where classrooms collaborate together with other classrooms across campus and across international borders. The use of the Internet and social networking sites will help facilitate this new, innovative shift in education" (Kulmala & Stanton, 2009, p.40).

This potential, however, remains in question (Ophus & Abbitt, 2009). There is a gap between the speed of SNSs' development and their use for education (Liccardi et al., 2007). Madge et al. (2009) also contend that the potential of Web2.0 technologies in

³ an international community of experts in educational technology and its role is to help its members with educational innovation (<http://www.nmc.org/horizon>)

⁴ EDUCAUSE is a non-profit association whose mission is to advance higher education, promoting the intelligent use of information technology (<http://www.educause.edu/about>)
EDUCAUSE learning initiative: <http://www.educause.edu/eli>

education is yet to be fully explored. Many studies have suggested that SNSs could be used in education, yet they acknowledge that more research needs to be done (Lockyer et al., 2008). Since students are already active SNS users, the question of using SNSs in education is actually a question of **repurposing** the existing technology (Ophus & Abbitt, 2009). However, in order to repurpose SNSs for education, it is necessary to **develop educational activities carefully** (Ophus & Abbitt, 2009). The same researchers conclude from their own survey that “there is notable potential for social networking systems as an instructional tool as well as notable concerns” (Ophus & Abbitt, 2009, p.9) and warn that “a careful and informed integration process is necessary to provide a foundation for developing new teaching and learning activities” (p.2). Just like with all Web 2.0 tools, new models are needed to facilitate the adoption of SNSs as tools for improving teaching and learning in higher education (Ajjan & Hartshorne, 2008).

3.5.2. Affordances of SNSs that make them appropriate for education

Below is a brief list of the main affordances of SNSs that make them appropriate for education. A comprehensive list of general SNS features can be found in Kayri & Çakir (2010, p.49). These are relevant in the discussion on Facebook’s application in education, because SNS characteristics also apply to Facebook.

- SNSs are already widespread among students – prior familiarity with them (Coughlan, 2010; Kulmala & Stanton, 2009).
- SNSs are available via mobile phone, so students can keep in touch all the time (Coughlan, 2010) and from any place.
- SNSs offer easy, quick and low cost communication (Coughlan, 2010).
- SNSs facilitate the sharing of information and communication (McLoughlin & Lee, 2007) especially when coupled with other Web 2.0 tools (Oradini & Saunders, 2008).
- SNSs keep a record of online discussions so that they are available for future reference (Kulmala & Stanton, 2009)
- SNSs can offer many-to many communication (Martini & Cinque, 2011; Schroeder et al., 2010)

3.5.3. How SNSs can be used in e-Learning

Bartolomé (2008) claims that social networks do not easily fit traditional curricula. Downes (2005) argues that a **community of practice**⁵ is the closest one can come to a social network in eLearning:

“In the world of e-Learning, the closest thing to a social network is a community of practice, articulated and promoted by people such as Etienne Wenger in the 1990s. According to Wenger, a community of practice is characterized by "a shared domain of interest" where "members interact and learn together" and "develop a shared repertoire of resources.””

According to social constructivist learning, effective learning is conversational in nature, and necessitates a social dimension, including communication, dialogue and shared activity. Because SNSs facilitate connections to others and communication, they can provide an impetus for inquiry-based approaches and collaboration (McLoughlin & Lee, 2007, p.671). Fernández & Gil-Rodríguez (2011) also note that social networks offer an opportunity for the collective construction of knowledge.

How SNSs can be used by students:

- To continue a conversation outside class (Ophus & Abbitt, 2009; Selwyn, 2007).
- As a tool of communication with other group members of a collaborative project (Kulmala & Stanton, 2009).
- For collaborating on relevant topics e.g. with problem-based learning (Liccardi et al., 2007, p.224)
- For sharing experiences (Liccardi et al., 2007, p.224).
- For the indirect sharing of resources, thoughts, ideas, productions, writings, notes (through posting them on their profile pages), which can provide students with insights into the workings of other students (Dalsgaard, 2008).
- To communicate events among students (Roblyer et al., 2010, p.136).

How SNSs can be used by educators/universities:

- Instructional communication and pedagogical mentoring (Roblyer et al., 2010, p.137).
- To update students on course logistics (Ophus & Abbitt, 2009) or to communicate events (Roblyer et al., 2010).
- Universities use SNSs for marketing campaigns (Roblyer et al., 2010, p.136).

⁵ <http://www.ewenger.com/theory/>

3.5.4. Benefits that SNSs can provide to academic education

1. Help students form social networks

Social network sites promote informal communication between students and can therefore help them form or support existing social networks (Madge et al., 2009; Ellison et al., 2007; boyd & Ellison, 2007) and bond with fellow-students. They help create a sense of belonging to the academic community. SNSs could be used to establish academic connections (Ajjan & Hartshorne, 2008, p.72). Stable social networks are a factor for students' academic achievement (Figl, Kabicher & Toifl, 2008). The formation of social capital may also benefit students also later in their professional life, in the form of useful information and personal relationships (Bunus, 2010). SNSs facilitate interaction and connections between people (McLoughlin & Lee, 2007).

“For individuals and for the students in particular the accumulated social capital allows them to benefit from the “social network wisdom” in form of useful information, personal relationships that will directly affect their academic life with future extension to their professional life” (Bunus, 2009, §3.1).

2. Help students develop skills for future employment

SNSs promote communication and teamwork, which are competences highly regarded among employers (Figl et al., 2008). SNSs could be used “to foster cooperation and collaboration in the higher education system” (Ajjan & Hartshorne, 2008, p.72). They help students collaborate (Liccardi et al., 2007). Students using SNSs for a collaborative project found it helpful for communication (Kulmala & Stanton, 2009). SNSs can help students acquire communicative and social skills as well as digital literacies (McLoughlin & Lee, 2007).

3. Increase motivation and reduce drop-outs

SNSs can increase student motivation (Coughlan, 2010; Visagie & deVilliers, 2010) through means such as the publication of student work (Ajjan & Hartshorne, 2008). “The publication of student work resulted in increased motivation for many students” (Ajjan & Hartshorne, 2008, p.72). They may also facilitate the attainment of students (Coughlan, 2010; deVilliers, 2010). Drop-outs are also prevented through the creation of stable social networks (Figl et al., 2008). SNSs place the student at the centre, as the

communication is controlled by the students, who decide what to discuss and with whom to work with (Oradini & Saunders, 2008).

4. Facilitate the sharing of resources and knowledge acquisition

SNSs facilitate the sharing of knowledge and resources (Fernández & Gil-Rodríguez, 2011; Visagie & deVilliers, 2010; Oradini & Saunders, 2008), and therefore they can lead to an increase of the quantity and an improved quality of the available study material. Also, by not wasting time for resource-searching, students may have more available time for studying.

3.5.5. Issues and problems

There are some sensitive issues regarding the use of SNS in education, including (but not limited to) student privacy, data protection and intellectual property rights. For instance, Towner & Muñoz (2011) claim that “Issues relating to privacy and safety and an erosion of professional boundaries are the primary reasons cited to not employ social network sites in a classroom” (p.1). These, and other issues, will be discussed in more detail in the chapter about Facebook use for academic purposes.

3.6. Facebook

3.6.1. Introduction

This section is about Facebook. Its history, main features, and some statistics⁶ will be provided. The fact that Facebook is the most popular SNS today is the reason why we decided to explore its potential within higher education, so it is essential to get acquainted with it before moving on to explore how it can be used in the academic world. Facebook has been described as “perhaps the most important digital medium in recent history” (Grosbeck, Bran & Tiru, 2011).

⁶ Statistics about the use of Facebook by students and faculty will be provided in chapter 4

3.6.2. History

Facebook is a SNS that was founded on **February 4th, 2004**. Mark Zuckerberg and co-founders Dustin Moskovitz, Chris Hughes and Eduardo Saverin launched it from their Harvard dorm room⁷. Today, its mission is “to give people the power to share and make the world more open and connected” (<http://www.facebook.com/facebook?sk=info>). Although other SNSs existed before it, Facebook was designed to support college networks only (boyd & Ellison, 2007, p.9). In its early days membership was limited to users from Harvard University (with a harvard.edu email address). It gradually opened up, starting with accepting students from other colleges as members. These new users “were also required to have university email addresses associated with those institutions, a requirement that kept the site relatively closed and contributed to users' perceptions of the site as an intimate, private community” (boyd & Ellison, 2007, p.9). In 9/2005 it expanded to introduce high schools (Bosch, 2009; boyd & Ellison 2007) and international schools (Miller & Jensen, 2007), while in 2006 communities for professional organizations were introduced (Ellison et al., 2007). Since **11th September 2006** it is accessible to anyone with a valid email address (Bosch, 2009). Facebook has been constantly growing in membership and changing its features or adding new ones. Today Facebook is no longer an exclusively academic community, but has a variety of users from all areas of society (Roblyer et al., 2010). It is the world’s leading SNS, with over **800 million active users**.

3.6.3. Facebook features

General

As Facebook explains in its own Facebook information Page: “Millions of people use Facebook everyday to keep up with friends, upload an unlimited number of photos, share links and videos, and learn more about the people they meet” (<http://www.facebook.com/facebook?sk=info>). Facebook can also be accessed by mobile phone, a feature that is very useful for people who are “on the road” often, or without an internet connection at home/work. The English language seems to be predominant on Facebook, as Bosch (2009) notes: “All communication was found to be

⁷ Important dates on Facebook history at <https://www.facebook.com/press/info.php?timeline>

in English, with students (including non-native speakers) considering this the obvious choice of language for the medium” (p.193).

Getting started

In order to become a Facebook member, one needs to provide a valid email address, name, family name, sex and date of birth. After creating their profile, users may add a profile picture and other personal information, such as schools or universities they have attended, employers, home town, address, telephone number, languages, interests, hobbies, relationship status, political views, religious views, etc.

‘Friending’

The next step would be to search for people they know (who already have Facebook profiles) and send them a ‘friendship request’. A personal network of ‘Friends’ is created as other members accept these requests.

What Facebook members can do

As Visagie & de Villiers (2010, p.3) explain, new Facebook members can do the following:

“Once a Facebook member, one can create one’s own personal profile, search for other people with profiles on Facebook, invite people to events, create birthday calendars, make use of Facebook’s chat function for live communication, and basically make use of a vast amount of added applications. Facebook plays a vital role in people’s social and academic interactions.”

Ophus & Abbit (2009) explain that a wide variety of utilities is available to Facebook users, allowing them to “communicate with others in chat rooms and by asynchronous messages, as well as share music, photos, Internet links, and other content” (p.2). Members can use the instant chat, add (or view) photos, videos and links, comment on friends’ posts and get informed about what friends have posted through the ‘news feed’ (Diggins & Risquez, 2010) or update their own status. They can also “Join” Facebook Groups or “Like” Facebook Pages.

Fundamental features to Facebook are a member’s **Home page** and **Profile**. The Profile displays information about the individual that he or she has chosen to share (<http://www.facebook.com>). One Facebook feature that belongs to the profile is the **‘Wall’**, described as “a forum for your friends to post comments or insights about you”

(Facebook cited in English & Duncan- Howell, 2008, p.598). Each user has a “Wall” where they can post their status updates, links, photos, etc. The “Wall” may be visible to one’s Friends, and they too may post “Comments” there. Each Profile Wall displays all the posts made by the user, and it is possible to go weeks, months and even years back on a user’s Wall. A new way of presenting one’s Profile, the ‘**Timeline**’ introduced towards the end of 2011⁸, makes this even easier.

The Home page includes the ‘**News Feed**’, which is a personalized feed of Friends’ updates (making use of RSS technology). This is an important feature of Facebook. Miller & Jensen (2007, p.2) explain how it works:

“Introduced in the fall of 2006, the Facebook News Feed is now a core feature automatically generated for all Facebook users every time they sign-in. The News Feed employs RSS technology to display Profile information that has been updated by the Friends of a Facebook user. The result is an easy-to-read customized digest of recently edited digital content.”

This makes it very easy for users to get informed about their Friends’ activity. Whenever one posts something on their Wall, it comes up on their Friends’ News Feed. There is no need to visit Friends’ pages to check on their news. Instead, Facebook collects all the “News” and places them on the News Feed, in either chronological (recent stories up on the list) or “highlighted” (most important) stories first (user’s choice) order. Miller & Jensen (2007) explain that with the presence of the News Feed “most students spend time reading information that Facebook puts in front of them, not what they seek out on their own” (p.2). Downes (2007) claims that the News Feed is what makes Facebook such a good communication tool. When a user logs on to Facebook, what they see is their “Home” page (not their own Wall), showing the News Feed in the central column. Recent entries from all his/her Friends are displayed there. This way “a member can catch up with an entire network immediately from a single page” (Downes, 2007, p.2).

Facebook includes applications such as **Photos, Events, Videos, Groups, and Pages**, that allow people to share in various ways. Members can communicate with each other through **Chat, personal messages**, and ‘**pokes**’ or with all their Friends through Wall posts and **Status Updates**. Users can blog using “**My notes**” or use their “status update”

⁸ <https://blog.facebook.com/blog.php?post=10150408488962131>,
<https://www.facebook.com/about/timeline>

for shorter posts. They can join groups, create **Events**, send **email** (to Facebook users or outside), upload photos and videos, share **links**, edit documents through the **Docs** application which was launched in beta version on April 21st 2010 (<http://docs.com/Main/About>), to name some of the options.

Facebook Groups

A Facebook member can create a Facebook Group, give it a name and invite Friends (or others) to participate. Groups have their own Wall and members may receive notifications of group activity (posts, events, comments, etc.) if they choose to. A Facebook user can request to “Join” a group, and the Group Administrator(s) may accept or reject that request. Group members don’t need to be Friends with one another. Groups can be **open (public)**, **closed** or **secret**, each option offering increasing levels of privacy.

Facebook Pages

Facebook Pages are public and they are meant for entities such as companies, public figures, communities and organizations. Facebook users can “Like” a Facebook page, and then they can get updates when there is activity on the Page, i.e. receive the post on their News Feed. Any Facebook member can “Like” a Page. The content on Pages is completely public.

Applications

Facebook allows outside developers to build ‘Applications’ (Apps), enabling users to personalize their profiles and perform other tasks (boyd & Ellison, 2007). As Downes (2007) explains:

“In May 2007, Facebook opened its platform, providing an application program interface (API) to allow external applications to upload content. (An API is a set of specifications defining how input to Facebook should be addressed, how authentication is managed, and how data should be structured). The plan, according to Zuckerberg, was to make Facebook a “platform”—that is, “a software environment where others can create their own services, much the way anyone can write programs for Microsoft's Windows operating system on PCs” (Kirkpatrick 2007, ¶4). As a result, Facebook members are now able to select from dozens of applications to input and display novel types of content” (Downes, 2007, p.2).

Anyone, such as individuals, companies and organizations can create new Applications for Facebook (Miller & Jensen, 2007). The open Facebook Platform is free to develop

for and requires no license (Parslow et al., 2008). There are over 7 million applications and websites integrated with FB.

An example of popular application is **games**. There are many games on Facebook, such as Zynga's Farmville and Frontierville. These games can be played together with Facebook Friends, by becoming e.g. 'neighbours'. Users sometimes add Friends they do not know personally, so that they can become 'neighbours' and help each other with games' quests⁹.

3.6.4. What Facebook is used for

According to the Facebook website: "Facebook is a social utility that helps people communicate more efficiently with their friends, family and coworkers" and "helps you connect and share with the people in your life". Research has shown that, like other SNSs, Facebook is mainly used to maintain existing relationships (Ellison et al., 2007) and to develop new networks (Bosch, 2009). It is not so common to use it for making new friends. Joinson (cited in Lampe, Ellison & Steinfield, 2008, p.722) found that the most common uses of Facebook were keeping awareness of contacts, sharing photos, organizing groups and participating in applications." Facebook is used for the formation and maintenance of social capital (Ellison et al., 2007). It has been argued that there is a general trend of declining social capital (Putnam, 2000 cited by Bae, 2010) which, combined with the diffusion of the Internet, may lead to social network media such as Facebook replacing conventional community experience (Bae, 2010). Facebook may also be used for the construction of online identities (personas) "by managing the impressions others might have of them through their profiles, group membership and photos" (Kelley cited in Bosch, 2009, p.189). Employers use sites such as Facebook to get information on potential new employees before they are considered for employment (Eberhardt cited in Visagie & deVilliers, 2010). Recruitment companies use it to offer personality quizzes (Erasmus 2008 cited in Bosch 2009). Employers use specifically Facebook to do background checks for recruitment purposes (Mack et al., 2007; Secker, 2008; Towner & VanHorn, 2007 cited in Visagie & de Villiers, 2010, p2). A human resource company was reported having started a Facebook group to provide work-related information to managers (Erasmus 2008 cited in Bosch 2009). Universities use

⁹ <https://www.facebook.com/notes/frontierville-buddies/add-me/279917318697772>

Facebook to look for evidence of student behaviour that may be contrary to regulations or to recruit/dismiss candidates (Cain, 2008; Secker, 2008; Torgeson 2006 cited in Bosch 2009). They also use it as a marketing tool for attracting students (McCarthy, 2009). Some might use it as a communication tool, and there are some cases where it has been used for educational purposes. These will be discussed in a chapter 5.

3.6.5. Statistics

Facebook is not only the leading SNS, but also one of the busiest web sites on the internet. Some statistics are provided below, showing how its membership has increased in time (<https://www.facebook.com/press/info.php?timeline>):

Graph 1: The number of Facebook members

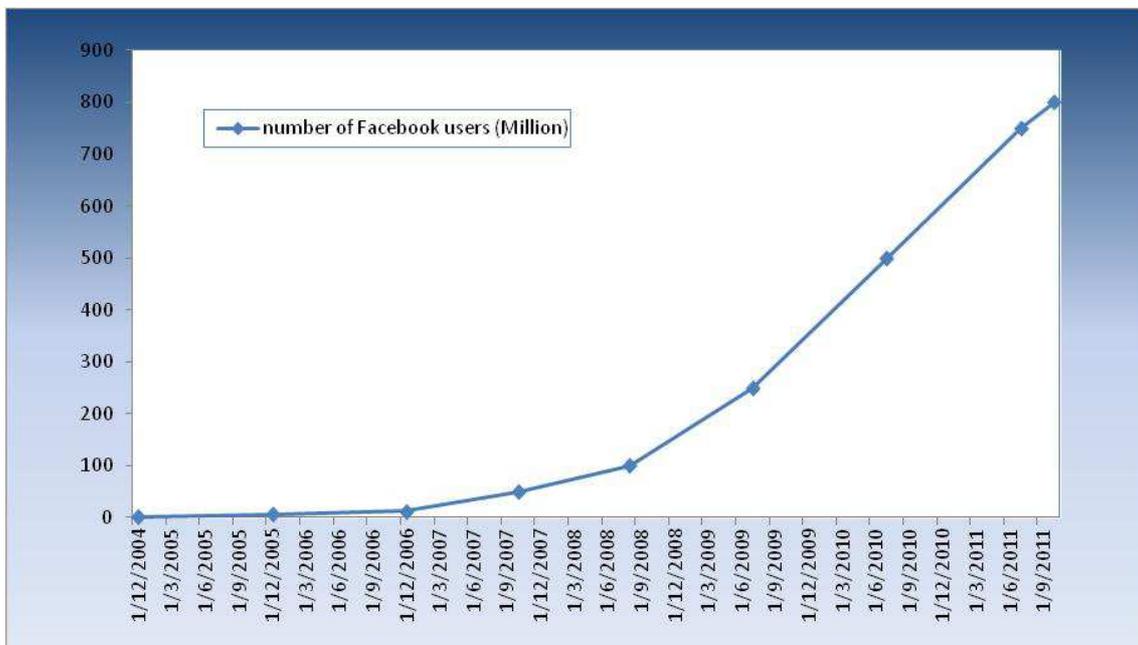


Table 5: The number of Facebook members

Date	Users (million)
12/2004	1
12/2005	5.5
12/2006	12
10/2007	50
8/2008	100
7/2009	250
7/2010	500
7/2011	750

On October 17th, 2011 Facebook reported a total number of 800 million active users, **50% of whom sign in on any given day**¹⁰. It is obvious that Facebook expanded very quickly. In 2008 Facebook reported “an average of 250,000 new registrations per day” (Mendez et al., 2009, p.1), going up from 100,000 new users register every day in 2007 (Miller & Jensen, 2007). According to alexa.com (accessed on November 29th, 2011) Facebook was the 2nd most popular site in the world (the 1st one being Google). The estimated time a user spent on Facebook was 25 minutes per day, and furthermore it was also estimated that 43% of global internet users visit Facebook daily (<http://www.alexa.com/topsites>). Facebook provides the following statistics, accessed on November 29th 2011 (<https://www.facebook.com/press/info.php?statistics>):

People on Facebook

- More than 800 million active users
- More than 50% of our active users log on to Facebook in any given day
- Average user has 130 friends

Activity on Facebook

- More than 900 million objects that people interact with (pages, groups, events and community pages)
- Average user is connected to 80 community pages, groups and events
- On average, more than 250 million photos are uploaded per day

Global Reach

- More than 70 languages available on the site
- More than 75% of users are outside of the United States
- Over 300,000 users helped translate the site through the translations application

Platform

- On average, people on Facebook install apps more than 20 million times every day
- Every month, more than 500 million people use an app on Facebook or experience Facebook Platform on other websites
- More than 7 million apps and websites are integrated with Facebook

Mobile

- More than 350 million active users currently access Facebook through their mobile devices
- More than 475 mobile operators globally work to deploy and promote Facebook mobile products

¹⁰ (<http://www.facebook.com/press/info.php?statistics>)

3.6.6. Privacy and personal data protection

Research conducted in 2006 found that Facebook members reveal a lot about themselves, without being aware of privacy options or knowing who can actually view their profile (Acquisti & Gross 2006 cited in Bosch, 2009, p.190). Many even believed that nobody would care to view their profile (boyd, 2007a, p.4). Facebook is said to have a confusing array of privacy controls, including 50 privacy settings and 170 privacy options, discouraging users from making adjustments to their accounts (Loving & Ochoa, 2010, p.123). It would be interesting to investigate if FB members have started making more use of the privacy options, due to increased awareness stemming from the fact that nowadays membership is huge and unrestricted as well as from the publicity of instances where people faced problems after revealing information that was seen by the wrong people (Cain, 2008; Secker, 2008). The privacy options, however, may still be confusing to the average user.

Facebook members can view and edit their profile privacy settings any time. It is possible to personalize privacy options, i.e. who can see what in a profile. However, with an average of **130 Friends per profile** (as of 17th October 2011) that might be a time-consuming activity. Things can become easier if Friends are placed in lists (such as 'close friends', 'colleagues', 'acquaintances' (and other user-defined lists), so one has the choice of including or excluding specific groups of people. For example, one can publish a photo and make it visible only to 'Close Friends'.

Users can control who they share with every single thing they post on Facebook: They can manage the privacy of their status updates, photos and all other information they share by using an inline audience selector (the available options are: public, friends or custom) right at the time of sharing (and they can even change it later if they wish to do so). This is a feature that was added in August 2011 (<http://blog.facebook.com/blog.php?post=10150251867797131>). Privacy has been an issue for Facebook users, even from its early days, such as when the mini-feed was introduced (nowadays News Feed). One of the latest issues is the introduction of facial recognition technology to identify and tag people in photographs (New York Times, <http://www.nytimes.com/2011/06/09/technology/09facebook.html>).

On November 29th 2011, as a response to allegations for breach of several issues related to privacy and personal information, the Federal Trade Commission (US federal agency that deals with matters of consumer protection and competition) announced a settlement with Facebook (<http://www.ftc.gov/opa/2011/11/privacysettlement.shtm>) with specific privacy and data protection measures it should undertake. Facebook has 800 million active members and that means access to huge amounts of personal data (10% of the world population). The proposed settlement (which came in the form of “agreement containing consent order” under the number 0923184) will have a duration of 20 years and is available for download through: <http://www.ftc.gov/os/caselist/0923184/111129facebookagree.pdf>. Facebook will be required to implement a privacy programme, involving specific requirements (described in the order) towards privacy protection (for example, notifying users and obtaining their consent for any change in the privacy of their data) and will also have to undergo a bi-annual compliance (with this privacy policy) audit by an independent third-party professional. On the very same day Mark Zuckerberg responded by writing on the Facebook blog, admitting to “a bunch of mistakes” while stressing Facebook’s commitment to safeguarding privacy, and listing concrete steps in the desired direction (<https://blog.facebook.com/blog.php?post=10150378701937131>). This shows that Facebook wants to reassure its members that something is being done for the protection of their privacy.

3.7. Summary

In this chapter we have described Facebook and its main features. Statistical data were provided to document the explosion of its popularity. In the following chapter, we will discuss the use of Facebook specifically in the academic field. Because of its roots in the academic area and its massive acceptance among university students, it has been suggested that Facebook can be used in higher education. We will explore the ways it could be utilized to students’ benefit, particularly through the analysis of specific case studies, where Facebook was used as a learning tool in an academic setting (chapter 5). The relevant risks will also be highlighted, followed by advice on how to control them.

4. Facebook use by students and instructors and its potential for academic use

4.1. Introduction

In this Chapter we are going to look more deeply into Facebook and particularly the way students and faculty use it and for what reasons. Through research papers that have been written on the topic, we will explore the current and possible academic uses, student/staff opinion and several of the issues that are involved.

4.2. Patterns of Facebook usage by students and instructors

4.2.1. Student and faculty Facebook adoption rates

Facebook is undeniably very popular with students. In the early days of its existence, it was distinct from other SNSs by being exclusively for the academic community. In a 2006 survey of **undergraduates** at the University of North Carolina, Chapel Hill **90%** reported using Facebook (Stutzman, 2006 cited in Hewitt & Forte, 2006 and in Ophus & Abbitt, 2009). A survey by Hewitt & Forte (2006) showed a membership rate of **79%**. The same authors also quote Arrington (2005) citing a Facebook representative stating that **85%** of students at participating institutes had an account and that 60% of them logged in every day. Selwyn (2007) found that **76%** (694/909) of a UK university's students had a Facebook profile. Hargittai (2007) found that 88% out 1060 1st year students were SNS users, while 78.8% of them were Facebook members (i.e. **70%** of the total sample). Lampe et al. (2008) stressed that Facebook had "achieved near ubiquity on U.S. college campuses in a relatively short amount of time" (p.721) and report a **96%** rate of Facebook membership (404/419) from their survey in MSU in 2008. In a survey by Ophus & Abbitt (2009) only 1 out of 110 students (0.9%) reported never using Facebook (p.5), indicating that **99.1%** of those surveyed were Facebook users! Roblyer et al. (2010) found the student Facebook adoption rate to be around **95%**. Smaller percentages are also mentioned: An online survey answered by 67 management students at the University of Pisa that took place in 2010 showed that

Facebook was the **preferred** social network of **60%** (Martini & Cinque, 2011, p.74). Ahmed & Qazi (2011) surveyed students in 6 universities in Pakistan, and found that **62.7%** (455/726) of the students who responded were Facebook members, yet in the same survey **91.3%** of SNS users (455/498) reported Facebook as their preferred SNS (p.5027). Junco (2011b) who examined a sample of 1778 students of a US university found that **92%** of them spent at least some time on Facebook. From the above it can be concluded that Facebook adoption rates among students range from **60% to 99%**.

Bosch (2009) found that **graduate** students used Facebook less than undergraduates. She reports that preliminary surveys in four graduate classes at UCT indicated that although most graduate students had signed up to Facebook, they did not log in on a daily basis, and had significantly smaller Friends' lists than those of undergraduates. She explains that although most of those surveyed had signed up to see 'what all the fuss was about', they did not interact with their friends and contacts on Facebook (2009, p.187).

It is also noted that **faculty** are less likely to use Facebook than students. Mazer et al. (2007) reported that by 2006 Facebook was increasingly used by students and faculty, estimating "a ratio of 1 teacher per 27 students or a teacher ratio of 3.7% of students" (p.3). Facebook spokesperson Chris Hughes was quoted stating that "approximately 297,000 Facebook members identify themselves as faculty or staff" on May 1st 2006 (Mazer et al., 2007, p.3). Roblyer et al. (2010), who conducted a survey of 62 faculty and 120 students at a US, mid-sized, public university found a significant difference between students and faculty on the likelihood of having a Facebook account. "About 95% of students had an account, while about **73%** of faculty had one" (Roblyer et al., 2010, p.137). This percentage however is not much lower than that found for students in other studies, as it is evidenced above. Data provided by Visagie and de Villiers (2010), shows that **63.95%** (55/85) of staff who responded to their survey had a Facebook account (ranging from 50% - 75% in 5 different countries). However, it should be noted that staff aged 21-30 had a much higher rate of Facebook use (**91.7%**), which seems to be closer to that of students. On the other hand, Towner & Muñoz (2011) who examined a sample of 176 staff found that **39%** of professors and **17%** of teaching assistants had a Facebook profile.

4.2.2. Frequency of Facebook use

Survey evidence has shown that most of the students who use Facebook log on the site **every day**, some even doing so **multiple times per day**. Several papers have repeated the not so exaggerated claim that students live in Facebook. Hergüner (2011) claims that it is not uncommon for students to log on Facebook nearly every hour (p.175). A survey among 110 undergraduate students (mostly female: 107/110, aged 18-19) that took place during the Fall semester 2008 at a comprehensive Midwestern University (USA) showed that 73.6% used Facebook multiple times per day, while 21.8% used it daily (i.e. 95.4% used it at least once per day), while only 1 out of 110 students (0.9%) reported never using Facebook (Ophus & Abbitt, 2009, p.5). In a survey among 354 students at the University of Reading (UK) it was found that 43% used Facebook several times a day, 34% used it daily, 10% used it several times per week and 7% used it weekly or less. Those who said they never used it were around 6% (rough percentages from Parslow et.al, 2008, p.5, Figure 1). In a survey of 58 Turkish computer science students by Kayri & Çakir (2009) it was found that 31% of them used Facebook every day, 55.2% used it several times per week, and the remaining 13.8% used it from several times a month to never (p.52). In a study by Junco (2011b) students reported checking Facebook frequently, with a mean of 6 (SD 8) times per day on average and a mean of 5 (SD 7) times ‘‘yesterday’’ (Junco 2011b, p. 5).

4.2.3. Time spent on FB

Students seem to be spending a respectable amount of time on Facebook, and most studies report an average exceeding **1h/day**. Szwelnik (2008) reports that students of Oxford Brookes University spend **1 hour** per session on Facebook (p.2). In Junco (2011a) students reported spending an average of over **1 h and 40 min** a day on the site. Similarly, Junco (2011b) reports that Facebook users (out of a sample of 1778 students at a US university) spent a substantial amount of time on Facebook, reporting a mean of **106 min** (SD 93) on the site per day and a mean of **79 min** (SD 82) on the site ‘‘yesterday’’(p.5). On the other hand, older findings of an online survey of 286 students of Michigan State University showed that ‘‘Facebook members report spending between **10 and 30 minutes** on average using Facebook each day’’ (Ellison, Steinfield & Lampe, 2007, p.1153). Pempek, Yermolayeva and Calvert (2009) found that undergraduate students (sample of 92 students) spend approximately **28 minutes** daily on Facebook,

adding this task to their daily routine. Mendez et al., (2009) point out that it is a common conclusion of many studies that Facebook is fully integrated in the lives of most undergraduate students (p.2). Towner & Muñoz (2011) find that 15% of students report having spent on average more than 3 hours on Facebook per day in the preceding week. In a survey of undergraduate students at Michigan state university, annually repeated from 2006 to 2008, it was reported that Facebook was “widely considered to be part of the **daily routine** of users, and interview data suggest that users engaged in lightweight contact via the site throughout the course of the day” (Lampe et al., 2008, p.729). The average time students spent on Facebook had increased significantly between 2006 (**28 minutes/day**) and 2007 (**83 minutes/day**), while from 2007 to 2008 (**83 minutes/day**) it remained stable (p.274). The same research reported an increase in Facebook members’ agreement with the following statements (p.728):

- “Facebook is part of my everyday activity”
- “Facebook has become part of my daily routine”
- “I would be sorry if Facebook shut down”
- “I use Facebook to get useful information”
- “I spend time on Facebook when I should be doing other things”

A survey of 1st year students (Facebook users) of a British University found that 84% agreed or strongly agreed that ‘Facebook is part of my everyday activity/routine’ (Madge et al., 2009, p.147) while 61% agreed or strongly agreed with feeling ‘out of touch’ when not having logged onto Facebook for a while (p.147). Ahmed & Qazi (2011) claim that “young people are being obsessed for Facebook as the first task after getting connected to internet is to sign in their account on Facebook” (p. 5024). As early as 2006, Bugeja warned that some students may find Facebook addictive, as indicated by the names of Facebook groups such as “Addicted to Facebook” numbering 330 members at his university alone. He also recounts of the following instance, evidencing the popularity of Facebook:

“Michael Tracey, a journalism professor at the University of Colorado, recounts a class discussion during which he asked how many people had seen the previous night's NewsHour on PBS or read that day's New York Times. "A couple of hands went up out of about 140 students who were present," he recalls. "One student chirped: 'Ask them how many use Facebook.' I did. Every hand in the room went up. She then said: 'Ask them how

many used it today.' I did. Every hand in the room went up. I was amazed.'” (Bugeja, 2006, p.2)

Overall, it seems that “the vast majority of college students have a Facebook account and are spending a considerable amount of time logged in” (Towner & Muñoz, 2011, p.1).

4.2.4. Number of Friends

The number of FB Friends varies among students. Ellison, Steinfield & Lampe (2007) found that Facebook members reported having “between **150** and **200** friends listed on their profile” (p.1153). Mendez et al. (2009) conducted a survey among students of a central US University who resided in campus and were Facebook users in December 2008. 84.4% of respondents said they had more than **100** Facebook friends, while 66.4% said they had more than **200** (p.5). Bosch (2009) reports that students’ Facebook Friends range from **50** to **200** (p.196). Lampe, Ellison & Steinfield (2008) found that the mean number of Facebook friends increased significantly between 2006 (**201** Friends) and 2007 (**308** Friends), while in 2008 (**333** Friends) it remained relatively the same as 2007 (p.274). They explain this pattern as a possible result of maturation of use over time: “after the major part of a person’s offline network has been added, use seems to tend to be more about maintenance of the established network” (p.724). Pempek, Yermolayeva and Calvert (2009) find an average of **358** Friends (after removing 3 high-end outliers and yet with a large variation). Towner & Muñoz (2011) find that although 46% of students had between **11-200** Friends, a respectable 24% reported more than **400!**

4.2.5. Friendship going from Offline to On-line

Generally, research finds that Facebook is used by students for connecting with people they already know (i.e. maintaining already existing offline relationships) rather than for making new friends. This means that there is an “**off-line to on-line**” tendency rather than the other way round, and has been evidenced by studies such as Towner & Muñoz (2011); Selwyn (2009); Bosch (2009); McCarthy, (2009); Lampe et al., (2008); Ellison, et al., (2007); Selwyn (2007). In their 2008 survey, Lampe et al. found “only a few users reporting that they used Facebook to make connections with people they didn’t already

know” (p.724). Contrary to this, Mendez et al. (2009) reported mixed findings: “Nearly half of those surveyed conceded that they have Facebook friends whom they have never met which conflicts with Selwyn article and raises serious safety concerns” (p.6). Madge et al. (2009) also found that first year students used FB for meeting other students prior to coming to university. Towner & Muñoz (2011) reported that 35% of respondents use FB to make new friends. From all the above, it can be concluded that making new friends is one of the uses of Facebook, but not a major one.

4.3. How students and faculty use Facebook

4.3.1. Introduction - Facebook use

Generally, research agrees that students and faculty use Facebook for **social/personal rather than educational purposes**. In a survey of 120 students and 62 staff conducted at a mid-sized public US university, it was found that “faculty and students do not use Facebook a great deal for instructional purposes; in fact, this was reported as the least-common use of this technology” (Roblyer et al., 2010, p.137).

4.3.2. Students’ social uses of Facebook

Bosch (2009) reports that “student use of Facebook is quite varied, and one cannot assume that students use online social networking tools in homogenous ways” (p.193). Research, however, has shown that students use Facebook mostly for social rather than educational reasons and particularly for communicating with peers (Bosch, 2009; McCarthy, 2009) rather than faculty. Overall, students use SNSs mainly for non-academic purposes (Ahmed & Qazi, 2011, p.5029). Social uses include sharing information about events, sharing photos and videos, sharing personal news and generally keeping in touch. Students often use Facebook to find past friends (McCarty, 2009). Bosch (2009) finds that “the main ways in which UCT students use Facebook is for social networking and seeking support from peers, community building on campus, and student activism” (p.193). Students are reported to be engaging in social activities such as “the micro-management of their social lives” (Selwyn, 2007, p.4) and “sharing information about social events and parties” (Bosch, 2009, p.194), which is a key

activity for 1st year students, 49% of whom use it for this purpose on a weekly basis and 23% on a daily basis (Madge et al., 2009, p.146). Other popular activities among students include sharing photographs and other images, music and videos, and keeping in touch during university vacations” (Bosch 2009 p.194). In a survey of 1778 students at a US university students reported participation in a variety of Facebook activities, with “viewing photos”, “commenting on content” and “checking to see what someone is up to” as the three most popular activities (Junco, 2011a, p.5).

Students also join Facebook groups (Bosch, 2009; Madge et al., 2009). Group members share common causes or interests, such as student activism, sporting societies, residence halls and student societies (Bosch, 2009). Such groups seem to “serve the purpose of community building, keeping members of specific academic programmes in touch with one another via the website, or for information sharing” (Bosch, 2009, p.193). Students use Facebook groups for communication within the organization community (Mendez et al., 2009). It was found that 42% of survey respondents use Facebook groups to contact organization members (Mendez et al., 2009, p.4). It can be claimed that “Facebook is an avenue for social community development” (Mendez et al., 2009, p.5).

Students use Facebook to stay in touch with close friends (McCarthy, 2009, p.45). Taking into account the fact that a large number of students move to another town for their studies, it is not surprising that one of the reasons often quoted for using Facebook is to keep in touch with friends from home. This was a popular reason among 1st year students of a UK university, where 31% of respondents said that they kept in touch on a daily basis with friends from home (Madge et al., 2009, p.145). Madge et al. (2009) conducted an online survey of 1st year, campus-based, Facebook users over a six-week period between April and June 2008, in order to explore how they used Facebook for social integration into university life and for academic purposes. The findings revealed that 1st year students used Facebook both for making new friends at university and keeping in touch with old friends at home: “Facebook was part of the ‘social glue’ that helped students settle into university life” (p.141). It was found that “many students specifically joined Facebook pre-registration as a means of making new face-to-face friends at university, particularly with people in the same hall or on the same course” (p.144). The survey also showed that “over half of the respondents (55%) had used Facebook to make new ‘virtual’ friends prior to starting university” (p.144). Contrary to

this, McCarthy (2009), also surveying 1st year students, finds that “perhaps surprisingly, the tool was not yet widely used to learn more about academic peers” (p.45). Mendez et al. (2009) also claim that students “generally do not use Facebook to make personal connections on a college campus before enrolling” (p.6), yet finding that 34% of the students surveyed “sought Facebook friends at the university before they arrived on campus” (p.6).

Mendez et al. (2008) conclude that students will continue using SNSs for communication, but “mostly for informal, social interaction with other students” (p.8). However, they see that “Facebook usage is not merely social. It is also being used to support an academic community” (Mendez et al., 2009, p.5).

4.3.3. Students’ Facebook use for academic purposes

Students seem to use Facebook mostly for informal communication with other students, to ask for information about timetables and deadlines, and arrange meetings for assignments. Bosch (2009) finds that although some Facebook groups were related to academic matters, these were “often phrased along the lines of ‘I survived ... Stats 101’, etc” (p.193). Similarly, as the title of the paper by Madge et al. (2009) reveals: “It is more for socialising and talking to friends about work than for actually doing work”. Selwyn’s (2007) findings are in a similar vein: He concludes that students’ Facebook education-related postings can be considered as “merely a continuation of how students talk to each other in other contexts - such as the chatter of the back rows of the lecture theatre, coffee shop or after-college telephone conversations” (Selwyn, 2007, p.18).

Selwyn (2007) analysed 68169 wall postings made by 612 students of a UK university (who had a public profile, so their posts were visible) during a 15-week period. He found that only **4%** (2496) of these posts were somehow **related to academic matters** and categorized them in 5 different themes (p.8):

- i) recounting and reflecting on the university experience;
- ii) exchange of practical information;
- iii) exchange of academic information;
- iv) displays of supplication and/or disengagement; and
- v) exchanges of humour and nonsense

Selwyn (2007) concluded that the educational discussions on Facebook were only a small fraction of other uses, and that they were **more frequent around deadlines for homework submission or before exams**. In particular, he observed that students often expressed complaints about instructors through Facebook and also used it to ask for last minute practical information about lecture venues, deadlines, homework, etc. There was some exchange of academic information and peer guidance, mostly among students closer to graduation, yet students were generally unwilling to help each other with academic questions. Many used Facebook to seek moral support, express their difficulties with academic tasks, and exhibit their lack of engagement. The last category was 'banter', i.e. humorous exchanges, often about academic staff.

Although Selwyn (2007) measured the percentage of **education-related posts**, Salaway et al. (2008) found that **49.7% of students** used SNSs to discuss education while Chu & Meulemans' (2008) found the same percentage to be **67%** (both cited in Towner & Muñoz, 2011, p.36). In the survey by Towner & Muñoz (2011) it is reported that on average **52%** of respondents use Facebook for some informal academic purpose (p.42) while students used Facebook also for formal learning purposes, such as communication with other students about assignments. Towner, VanHorn, & Parker (2007) found that students reported using Facebook to contact other students about things happening in class, to network, to get class notes, to set up meetings and to create study groups. Similarly, Bosch (2009) refers to research by Kosik (2007) finding that some students use Facebook "to contact people in their classes to get information about assignments" (p.190). She adds that in classes she taught students would become Friends and use Facebook to "replicate classroom networks and to informally exchange course-related questions and discussions" (Bosch, 2009, p.192). The findings of Madge et al. (2009) confirm this. They find (p.149) that students use Facebook for communicating with other students rather than with university staff thus replicating the findings by Hewitt and Forte (2006). Madge et al. (2009) note that FB is sometimes used for informal learning purposes and argue that student comments suggest that Facebook has the potential for informal discussions of academic work. A student is cited explaining that their group (working on project together) communicated via Facebook because they could get messages to each other faster, since they used it **more often than checking their email** (p.148). Madge et al. (2009) note that:

“as the students became more embedded in university life, Facebook was increasingly used by some students for contacting other students to organize group meetings for academic project work, revision and coursework queries: it became more than just a social network for some students and started to become an informal educational network as well” (p.148).

Although “only 10% of respondents used Facebook for discussing academic work with other students on a daily basis” (Madge et al., 2009, p.148), still **46%** said they used Facebook to informally discuss academic work with other students on a daily or weekly basis, while **22%** did so on a monthly basis (p.149). Therefore, almost half of the students were “using Facebook for some sort of informal academic purpose every week (e.g. for revision, arranging group or project work, often initiated by students themselves and not part of a formal requirement of a course). In contrast, only 7% reported having used Facebook as a formal part of their learning experience” (Madge et al., 2009, p.149). In a survey of 105 students by Bietila, Bloechl & Edwards (2009) **70%** of students reported using FB to communicate about assignments, however this was primary logistical, e.g. about deadlines, missed lecture notes, etc. The same survey showed that Facebook was used to arrange study sessions by 60% of the participants. Towner & Muñoz (2011) find that students are “more inclined to view Facebook as a platform for instructional materials and administrative uses” (p.50) rather than using it for formally assessed learning. Parslow et al. (2008) find that “22% use Facebook groups to discuss coursework, while 22% use it to share resources” (p.6) and that “only 15% use Facebook intentionally to learn” (p.7). They refer to a study at Durham University by Cameron & Fox (2007) that was “motivated by a noticeable decrease in discussion activity on Blackboard, and the observation that Facebook was being used” (Parslow et al., 2008, p.3), in which, evidence was found that informal learning, such as book reviews and subject-related dialogue, takes place on Facebook and that 25% of the respondents were conscious of learning through an informal use of Facebook (p.3). Parslow et al. (2008) also found that actually “more students have discussed coursework on Facebook than on Blackboard (51% vs. 30%)” (p. 6).

4.3.4. Communication between students and faculty

Facebook was used as a means of contacting university staff by 1% of respondents in the survey by Madge et al. (2009) and similarly by only 2% in the Mendez et al. (2009)

study, and then only as a secondary means of communication, the primary ones being email (88%) and office hours (12%). On the contrary, 12% of survey respondents were reported to be using Facebook to connect with faculty & staff (Towner & Muñoz, 2011, p.43).

Madge et al. (2009) note that students use Facebook for communicating with other students, not with university staff. In their survey 68% of students had never used Facebook to check out the profile of a member of university staff (p.149), so **32%** had done so, at least once. Similarly, Hewitt and Forte (2006) found that only **36%** of the students surveyed had seen their professor's Facebook profile. An even lower percentage is met in the study by Mazer et al. (2007), where only **15%** of students had actually viewed an instructor's profile. However, those who had, reported that they found the profile helpful for asking questions and for reading the professor's answers to those of other students. On the other hand, Towner & Muñoz (2011) found that **53%** of the students who had a professor with a Facebook account had visited the professor's profile (p.43).

Hewitt & Forte (2006) examined how students felt about professors on Facebook and the possible effect that interaction on Facebook might have on student/faculty relations. They found that contact on Facebook had no effect on students' opinion of professors, because no significant difference was found between the opinion of students who had seen the professor's profile and those who had not [the students already knew the professor]. The authors note that a ceiling effect may have been the reason, because the specific professor was very popular already. However, this suggests that Facebook can have no effect (either positive or negative) on student opinion about a professor, and that the professor's personality will emerge on the Facebook profile, where s/he will behave in a similar way as in day-to-day contact with physical presence, because "offline identities very much carry over to online behaviour" (Hargittai, 2008, p.277 citing boyd, 2001 and Smith & Kollock, 1999).

In the survey by Hewitt & Forte (2006) it was also mentioned that student profiles might contain information they don't want professors to see and many students also claimed that the student/faculty relationship should remain professional. However, 2/3 students were comfortable with professors on Facebook, and there were positive

comments, stressing the possibility of getting to know professors better and seeing Facebook as an alternative communication channel. The survey of Bietila et al. (2009) revealed no consensus among students about faculty presence of Facebook. Student interviews (Rambe & Ng'ambi, 2009) showed that some were concerned about the type of the relationship between students and instructors on Facebook, stating that they would accept Friendship if it was for practical reasons, e.g. to discuss academic issues, but wouldn't wish for it to go beyond that. Furthermore, students hesitated inviting instructors to be Facebook Friends, because they were not friends in real life (p.77). A study by Teclehaimanot & Hickman (2011), involving a survey on 25 undergraduate and 27 graduate students, found that students considered passive behaviour on Facebook more acceptable on instructors' part. Furthermore, female students found student-teacher interaction on Facebook less appropriate. However, as the authors point out, this may be due to the fact that these sets of students were both taught by men aged over 40, and that the results might have been different if the instructor was female or younger. Students' age or undergraduate/graduate status didn't seem to play a role in the perceived appropriateness of student-instructor interaction.

4.3.5. Friending between students and instructors

In a survey by Hewitt and Forte (2006) 19% of students reported being Friends with their professor. Mendez et al. (2009) found that 30% of their survey respondents reported having a faculty member as a Friend on Facebook (p.5). Sturgeon & Walker (2009) are cited by Towner & Muñoz (2011) for having found that “over 40% of faculty have students as friends and over 60% of students have faculty as friends” (p.36) However, the original paper (Figure 2) seems to indicate that 40/46 staff who were on FB had students as Friends and 67/74 students had faculty as Friends which is the highest rate of student/faculty Friendship reported in the bibliography that was examined for this dissertation. One probably distorting factor in the particular paper is that 63/74 students were in the 3rd or 4th year, so the sample was not representative of students in general. From their survey, Towner & Muñoz (2011) found that 40% of the students who had professors with a Facebook profile had added their professor as Friend (p.43). Other studies are less positive about student-faculty Friending. Bosch (2009) finds that “students clearly stated that they would not accept friend requests from lecturers” (p.196) as well as “UCT staff unwilling to ‘friend’ students” (p.196). She

notes that the lecturers who were surveyed indicated that they “routinely ignored friend requests from their students, and preferred to keep personal information on their profiles private from students” (p.195). This shows that not only students may wish to keep their private life away from their instructors’ eyes, but that the same also holds for instructors. The study by Mazer et al. (2009) indicates that students judge professors by their profiles and it is argued that instructors need to maintain a ‘professional image’ to earn the students’ respect (Mazer et al., 2007). This advice is met in other studies as well. Bosch (2009) cites Stutzman (2008) who warns “against establishing Facebook relationships with students, arguing that this may affect the perceptions students and lecturers have of each other” (Bosch, 2009, p.196).

4.3.6. How faculty and academic institutions use FB for education

Ajjan and Hartshorne (2008) asked faculty members whether they intended to employ social networks for teaching. They found that 8% of faculty had used social networking for teaching purposes, while 74% did not currently use and had no plans to use them in the future. Towner & Muñoz (2011) report that 13% of faculty employed Facebook as an instructional tool (p.47). However, it must be noted that their sample was recruited via Facebook groups such as “classroom 2.0” “e-Learning professionals”, so the instructors who responded were more likely to have already employed Facebook or to have a positive attitude about using it for academic purposes. University-related purposes of using Facebook, other than teaching, were mentioned by two members of staff who said they use Facebook for keeping in touch with alumni and study-abroad program groups (Roblyer et al., 2010). Although many educational institutions “have their own Facebook pages and actively seek to link with those of their students” (Roblyer et al., 2010, p.135), they rather use it for marketing purposes, such as to present themselves to prospective students (McCarthy, 2009, p.39). Academic institutions do not widely use Facebook for educational purposes. Exceptions do exist, such as “Penn State University, for example, has already developed an application allowing users access to their [library] catalog from their institutional Facebook page” (Loving & Ochoa, 2010, p.123). At Cloucestershire College, students of media-related courses use FB “to get information about assignments and to access help either from other students or staff” (Coughlan, 2010). “These are closed group pages, with designated times when lecturers will check for questions or messages and when students

can have discussions about their courses” (Coughlan, 2010). A pilot scheme using Facebook at City of Sunderland College was found useful as a way of reminding students about deadlines (Coughlan, 2010). “At the University of Pennsylvania, a professor uses Facebook to teach concepts of social networking and to foster critical thinking, having students investigate the connections among their peers” (Barnes 2007 cited in Bosch, 2009, p.191). There have been some experimental uses of Facebook to facilitate learning, such as using FB Groups, and the findings thereof are reported in the corresponding papers, which will be analysed in chapter 5 of this dissertation.

4.4. Possible limitations/issues about Facebook use by students

There are several issues about students using Facebook, for academic or other reasons. Among them, student **privacy** and the fear of **distraction**, making students neglect their academic responsibilities, seem to be the most prevalent. **Legal matters** are another possible risk that should be considered.

SNSs are reported to have been banned by certain academic institutions (Attwell, 2007; Bugeja, 2006). However, as Bugeja (2006) suggests, rather than blocking content, the best option might be to help students discern “when and where technology may be appropriate or inappropriate” (p.4). Attwell (2007) argues that there “seems to be a timeless pattern of new generations finding new trends about which to panic” (p.4). Timeless patterns of behaviour are also pointed out by Kirschner & Karpinski (2010) in the introduction of their paper which found a negative relationship between Facebook use and academic performance. However, what they say implies that young people are the same, and the reactions of older generations are the same as well, throughout time. Therefore, since the world has been continuing to survive under these behaviour patterns, there is no reason to panic about Facebook!

4.4.1. Students and privacy on Facebook

Privacy and Facebook has been discussed in chapter 3. However, when it comes to *student* privacy on Facebook there are more issues to consider. Studies have shown that students are not very careful about what they post and whom they allow to see their posts. Bosch (2009) refers to an earlier study by Kosik (2007) that showed that

Facebook student users at Pennsylvania State University “showed few reservations regarding what they posted online, at times expressing a desire for less privacy” (p.190). Bosch (2009) examined the profiles of students at the University of Cape Town and found that “most of them have limited privacy settings, allowing the casual surfer to view their profile pages, wall postings, photographs and other quite personal information, which sometimes even includes cell phone numbers or home addresses” (Bosch, 2009, p.190). That shows that students revealed a great amount of information. Furthermore, Bosch (2009) also notes that many of the students “did not change their privacy settings, allowing all members of the network to view their profile pages” (p.192). Such failure to block access to their profile, has led to various instances of students facing charges, e.g. for breach of college rules about alcohol consumption or other problems that occurred when the wrong people saw something they had posted (for more details see Cain, 2008). Mendez et al. (2009) provide a review of the literature about student data on Facebook and privacy settings (p.2), while their own findings show that most students do take some privacy measures, e.g. 70% provided no address, yet 55% make their profile picture available to the entire network and 47% of them have befriended a person they do not know (p.5). There have been instances where students protested against Facebook policies making too much information publically available, such as forming a group called “Students Against Facebook News Feeds (SAFNF)” where hundreds of thousands of users joined to protest against the news feed when it was introduced, eventually leading to the introduction of privacy controls on the news feeds function (Stutzman 2006 cited by Bosch, 2009, p.194).

4.4.2. Legal matters and student personal data protection

To register on Facebook one needs to provide some personal data. Facebook is a separate entity from the university. If Facebook was used for academic purposes, and if its use was made compulsory, students would be required to provide personal data to a third party, otherwise they could not fulfil their graduation requirements. This however may be a breach of laws regarding personal data, and therefore Facebook cannot be massively adopted by educational institutions. The use of Facebook for academic purposes can then only be voluntary. It is true, however, that most students are already Facebook users, so for the majority of them, the above would not be a problem. There are however, a few who do not wish to register, and these should not be disadvantaged.

Laws may differ from country to country, but requiring that students provide personal data to a third party may constitute a breach of the relevant legislation on the university's part. Even though most students are already FB users, they should not be required to "Friend" their instructors or academic peers, if they do not wish to. Friends are able to see each others' personal information, photos, postings, etc. This is subject to privacy settings, yet as it was found many students do not bother to make the appropriate privacy settings, so Friending within academic use should be a student's free choice. Any academic use of Facebook should neither require nor prevent it. Another relevant issue is the risk for the university because of possible litigation against it. Jones et al. (2011) provide some very interesting examples of court cases involving defamation on SNSs. They note that the university may be held liable for defamatory posts made by students on a social network page that is set up by the institution or a member of staff. More details can be found in their paper, but the different legislation in each country should be considered. Some universities provide security advice to their staff, e.g. offer guidelines about how to use SNSs and other online tools and warn them what to be careful with. For example, such a page of Stanford University is at: (http://www.stanford.edu/group/security/securecomputing/Restricted_Data_Handling_FAQ.html#Q7).

4.4.3. FB use and academic performance

An important issue related to students' Facebook use is the possible impact it may have on their academic performance. It has been argued that all generations have had their distractions, but Facebook has proven to be the major distraction for this generation (Karpinski cited in Ahmed & Qazi, 2011). The relationship between Facebook and academic performance has been addressed by a small number of studies, yet there is no consensus among them. Some argue that Facebook has a **negative** correlation to academic performance, some argue for the **opposite**, while others conclude that **no relationship can be found**. The fact that Facebook adoption is almost universal makes it hard to compare the academic performance of users and non-users. Perhaps research can only compare students' academic performance with regard to the amount of time they spend on Facebook. Kirschner & Karpinski (2009) also note that implementing an experimental design to measure the relationship between Facebook use and grades may not be viable for several reasons, which they list (p.1241), such as the impossibility of

finding students who have never heard of Facebook, or students who will agree to not use their account for the period required by the study. Another issue is which measure to use for academic performance. Grades, i.e. **GPA**, have been used so far. However, Junco (2011b) points that there may be other factors, such as **cognitive development, psychosocial development, self-esteem, locus of control, moral and ethical development and persistence** (Kuh, 2009 cited in Junco, 2011b, p.11). As for the relationship between Facebook and grades, the main difficulty is to **determine the causality, if such exists**. Can it be argued that by using Facebook more/less student performance can deteriorate/improve? Or is it that good/lazy students use Facebook less/more? None of the studies so far were able to clarify this. Below are their findings on the relationship between Facebook and academic grades.

The first research that found a negative correlation between Facebook use and academic grades is an unpublished Master's thesis by Vanden Boogart (2006), which surveyed 3134 students from 4 different universities in the USA and found that heavy Facebook use (i.e., more time spent on it) is observed among students with lower GPAs. Kirschner and Karpinski (2009) refer to this study and point out that no control variables were implemented. The results of a survey among 219 students (102 undergraduate and 117 graduate) at a public Midwestern USA university were reported by Karpinski & Duberstein (2009) and Kirschner and Karpinski (2009). Karpinski and Duberstein (2009) found that students who self-reported spending more time on Facebook spent **less time studying** (between 1 and 5 hours per week, compared to between 11 and 15 hours per week) and had **lower GPAs** (between 3.0 and 3.5 compared to between 3.5 and 4.0) than those who spent less (cited in Mendez et al., 2009, p.5; Ophus & Abbitt, 2009, p.3; and Kirschner & Karpinski, 2009, p.1240). It was noted, however that these differences do not imply causality. Kirschner and Karpinski (2009) conclude that on average Facebook users reported a lower mean GPA and spent fewer hours per week studying.

Ahmed & Qazi, (2011, p. 5029) listed three sources for reporting a negative correlation between Facebook and academic grades, but a look at them shows that: Wilson (2009) - allegedly proposing harmful effects of Facebook on academic results – is an article on “The Australian” that reports the findings of Kirschner & Karpinski (2009), a Sydney University-based Facebook group called "I want to sue Facebook if I fail university"

with almost 1000 members, and an interview with one student saying he was distracted by FB; Khan (2009) – allegedly finding poor performance of Facebook users in exams – is an article on “The Telegraph online” that quotes the Kirschner & Karpinski (2009) research and mentions a campaign of Burnemouth university students against Facebook on university computers; and Grabmeier (2009) –allegedly observing lower GPA among SNS users- is an Ohio state university article about Karpinski’s findings.

Contrary to the findings of Karpinski, Kolek and Saunders (2008) found **no correlation** between Facebook use and GPA (cited in Kirschner & Karpinski, 2009; Junco, 2011b). Another study by Pasek, More & Hargittai (2009) found **no negative relationship** between Facebook use and grades. A survey of 730 Pakistani students by Ahmed & Qazi (2011) showed **no significant relationship** between SNS use and academic performance and the authors concluded that using SNSs “does not have an adverse impact on their academic performance” (p. 5022).

On the other hand, Mendez et al. (2009) looked into whether faculty/student relationship in Facebook might have a positive effect on student performance. They refer to previous research (Pascarella and Terenzini, 2005) having indicated that academic performance increases with informal interactions between college teachers and students (p.2) and quote a study by Yang and Tang (2003) finding a positive relation between student performance and networks within which “individuals share resources such as information, assistance, and guidance” both in face to face and online settings (p.3). Last (p.3), they refer to the study by Sturgeon and Walker (2009), for having suggested that an increase in student/faculty familiarity that results from faculty use of Facebook makes students more comfortable, which enables them to learn better. Mendez et al. (2009) found that students who have faculty members as Facebook Friends are more likely “to have a higher self-reported GPA than those who have no faculty members listed as friends on Facebook” (p.6). However, as they point out, this doesn’t imply causality:

“more cynically, professors and instructors may be more apt to befriend the academically talented or students who perform better in their class as oppose to students who do poorly in class. On the other hand, higher performing students may feel more comfortable with befriending a faculty member than low-performing students. To further investigate these

OSNW interactions, future research can examine who extends friend invitations and why faculty befriend some students and not others.” (Mendez et al, 2009, p.7).

The most comprehensive study on the topic until this day is the one by Junco (2011b), who made research on the relationship between academic performance and **multiple indices of Facebook use**. He lists certain limitations of prior studies, e.g. no consideration of previous academic ability, or small sample size, among others. Another issue he points out is that “none of the previous studies have explored what students do on Facebook” (p.3), suggesting that there may be a difference. He refers to a previous paper of his (Junco 2011a) that found that some Facebook activities were positively predictive of student engagement, while others were negatively predictive. Furthermore, Junco (2011b) used **actual overall student grade point averages collected through the university registrar** that survey participants gave permission for access to, rather than self-reported grades that other studies used. Junco (2011b) used data from 1778 completed online surveys by students relatively equal portion from all study years (1st – 4th) but had an overrepresentation of female students (64% female & 36% male).

Junco (2011b) found that time spent on Facebook was strongly and significantly **negatively** related to overall GPA (p.1). However it was only half as strong a predictor of overall GPA than HSGPA (**high school GPA**), which proved to be the strongest single predictor of college grades (p.8). The author also points out that the real-world impact of the relationship between time spent on Facebook and grades did not seem to be a major detriment to academic success (p.11), explaining that “the amount of additional time on Facebook needed to produce a substantial decrease in GPA was enormous” (p.10). In particular, “to effect a change of .37 grade points on GPA, a student would have to score three standard deviations from the mean on FBTime [time on Facebook]” (p.10). Another finding, was that **time spent on Facebook was only weakly related to time spent preparing for class** (p.1) although originally the researcher had expected that if “students are spending their time engaging with a technology such as Facebook, their available time to spend on academic tasks might be limited” (p.2). The paper didn’t examine if students were ‘multi-tasking’ (using Facebook and studying at the same time) though. Furthermore, it was found that **certain uses of Facebook** were positively related to grades, while others were related negatively. Junco (2011b) explains that “posting status updates and chatting on

Facebook chat were negatively predictive of GPA, while checking to see what friends are up to and sharing links were positively predictive” (p.10). This shows that “using Facebook for collecting and sharing information was positively predictive of the outcome variables while using Facebook for socializing was negatively predictive” (p.1). Junco (2011b), like Karpinski (2009), notes that the relationship of time spent on Facebook and academic grades is **correlational**, and that “it is impossible to determine the causal mechanisms between Facebook use, overall GPA, and time spent preparing for class” (p.10). So, although this study found a negative correlation between GPA and time on Facebook, it is difficult to determine the direction of the effect.

4.5. Student and faculty opinions/preferences on the academic uses of Facebook

There have been several studies about student and faculty opinion on using Facebook for academic reasons and their findings are mixed. Faculty seems to be less willing to use Facebook for educational purposes.

4.5.1. Faculty opinion

Roblyer et al. (2010) found that students are more likely than faculty to agree that using Facebook would be convenient whereas faculty are more likely to believe that Facebook is not for education (p.138). Although this survey indicated a small difference in views between the two groups, neither was too positive about using Facebook for classwork-related purposes. Roblyer et al. (2010) conclude that overall, “students seem much more open to the idea of using Facebook instructionally than do faculty” (p.138). The attitude of faculty regarding the use of Facebook for academic purposes was explored by Visagie & deVilliers (2010). A survey that was answered by 84 lecturers from 5 different countries showed that 44% (37/84) would consider using Facebook as an academic tool where students and lecturers could engage in group work or online discussions, while 56% (47/84) wouldn't. Cloete, de Villiers, and Roodt (2009) looked into the use of Facebook as an academic tool for ICT lecturers in Southern Africa and found that most faculty had not used an SNS as an academic tool, yet most of them thought that a SNS like Facebook could be used. The majority (58%), however, would

not consider it as a tool for group work or online discussions (cited in Visagie & de Villiers, 2010, p.2). In spite of the above, Roblyer et al. (2010) note that just like the attitude about societal perceptions and uses of the Internet have changed in the past, attitudes about Facebook use might change too, and that “This data “snapshot” could be only a prelude to a much greater role to come” (p.138). This indeed is a possibility, since Facebook started as university-only SNS and has now become a public SNS, widely accepted and popular among people of every age around the world.

4.5.2. Student opinion

Parslow et al. (2008) find that students think of Facebook as a place for social interactions and not for learning (p.6). In their survey, only 7% felt that Facebook was an appropriate place to learn, 42% responded maybe, and 41% “stated a resounding no” (p.6). Madge et al. (2009) report that 43% of their respondents said that Facebook was not a tool for academic work (p.149), yet 53% replied “more positively about the use of Facebook for formal teaching and learning purposes” (p.150). Towner et al. (2007) report that 56% out of 186 students surveyed said that Facebook was a good tool for class-related activities. Madge et al. (2009) found that “first year undergraduate students generally thought the use of Facebook was most importantly for social purposes, secondarily for informal learning purposes (i.e., for student-to-student interactions about academic work-related matters) but definitely not for formal teaching purposes (i.e., between staff and student and involving formal assessment)” (p.148). On the contrary, students at the University of North Carolina “said they preferred conducting discussions in Facebook versus the standard course management system, listing pre-existing familiarity and user experience as key factors (Stutzman, 2008 cited in Bosch, 2009, p.191).

Parslow et al. (2008) suggest that the reason why students do not perceive Facebook as a learning tool, contrary to Blackboard as an alternative, is because it is designed as a social network and their perceptions follow “how each system is sold to them” (p.6). Margaryan & Littlejohn (2008) similarly argue that “students’ attitudes to learning appear to be influenced by the approaches adopted by their lecturers” (p.1) and that “students look to their lecturers for clues as to how to use technology tools for learning” (p.22).

Research seems to converge to the idea that students are likely to be more positive towards some specific uses of Facebook rather than others. Ophus & Abbitt (2009) found their (student) survey respondents were “largely supportive of using a social networking system in their courses” (p.8), yet they were more likely to value some activities more than others. This is in agreement with findings by Madge et al. (2009) and Towner & Muñoz (2011). Ophus & Abbit (2009) note that although the majority of students were likely to participate in most of the Facebook academic activities suggested by the survey, the most popular activities were the ones involving communication with other students rather than faculty. They found the following (Ophus & Abbitt, 2009, p.6):

Most popular activities:

- “Access course notes and other materials,”
- “Viewing course schedule,”
- “Communicating with other students in my courses,”
- “Joining a Facebook® group for students in your courses.””

Least popular activities:

- “Communicate with Instructors”
- “Using online discussions tools that included both instructor and students.”

Most of the students’ suggestions about academic Facebook use (and apparently the ones they were more positive towards) were related with departmental or module-related administrative arrangements rather than with the pedagogic aspects of teaching and learning in the Madge et al. (2009) survey. The least popular activity for the students was “contact via Facebook for central university administrative matters” (Madge et al., 2009, p.151). Madge et al. (2009) report that students suggested the following uses for Facebook (p.151):

- providing social and peer-led academic support for students
- revision opportunities
- inform students of changes to lecture times, notices, timetabling
- setting up discussion groups

Towner & Muñoz (2011) note that students were more inclined to view Facebook as a platform for instructional materials and administrative uses supporting the learning process, rather than using Facebook for learning that is formally assessed (p.50). Towner & Muñoz (2011) report that 43% of the students said that faculty should use Facebook for formal teaching, and that when these same students were asked to explain how they would prefer faculty to do so, 85% suggested posting announcements, 83% contacting students, 79% posting class schedule or events, 76% posting assignments and 71% posting website links (for the full list see Towner & Muñoz, 2011, p.44, table 4). It should be noted that although some students suggested that Facebook might be used to access staff for queries about specific modules and courses, Madge et al. (2009) reckon that “the **time implications for staff** may well preclude this idea being workable in practice” (p.150) something that was verified in practice when Facebook was used for a very large 1st year class (Rambe & Ng’ambi, 2011).

Since many of the functions that students suggested may already be available within a university Virtual Learning Environment, Madge et al. (2009) suggest that “**there may be merit in exploring the links and synergies between the two systems**” (p.150). Actually, this might help to lift several of the legal/privacy/data protection issues related to formal academic use of Facebook. Doing so would require special applications built to connect Facebook with the system each institution is using. It would be very interesting to examine this possibility.

4.6. Facebook strengths and arguments for its academic use: Popularity and Properties

It has been argued that because Facebook is a communication technology that is widely adopted by students, it has the potential of becoming an educational tool (Roblyer et al. 2010; Bosch 2009). Researchers and educators have started considering employing Facebook in the academic field because of its seeming ubiquity (Mendez et al., 2009) and its “rise to prominence” (Selwyn, 2007b). Students’ established familiarity with Facebook also counts as an advantage (Ophus & Abbitt, 2009; Stutzman 2008 cited in Bosch, 2009). Junco (2011b) actually suggests that Facebook “should be manipulated by higher education professionals in a way that leverages the site’s ubiquity and popularity toward positive academic outcomes” (p.11).

Bosch (2009) observes that Facebook fosters micro-communities of people who share interests or partake in similar activities, and seeks to find out if this social networking might be extended from the personal into the academic realm (p.193). It is suggested that Facebook can “support the students’ educational communications and collaborations with faculty” (Roblyer et al., 2010, p.134) and “stimulate collaborative student-led learning” (Bosch, 2009, p.190). Facebook users, just like users of most LMS, can “access information, discuss topics of interest and post material for others to view” (Parslow et al., 2008, p.4). In general, most of the potential of Web 2.0 technology for enhancing education is due to their sociability aspects, as they support conversational interaction, social feedback and social networks, and relationships between people (boyd, cited in McLoughlin & Lee, 2007, p.665). Similarly, the educational potential of Facebook has been attributed to its **reflective qualities, its mechanisms of peer feedback and it’s goodness-of-fit with the social/collaborative models of learning** (Mason, 2006 cited in Selwyn, 2007b and in Madge et al., 2009). In particular “the conversational, collaborative and communal qualities of Facebook are seen to “mirror much of what we know to be good models of learning, in that they are collaborative and encourage active participatory role for users”” (Maloney 2007, p.26 cited in Selwyn, 2007b, p.4). Ophus & Abbitt (2009) stressed that Facebook **facilitates communication within large groups of people**, e.g. through short postings, discussion topics and media sharing (p.9), and argued that these features “can be easily adapted for academic purposes” (p.9). Also, as Rambe & Ng’ambi (2011) note, according to the new theory of Connectivism, **Facebook’s affordances for integration, collation, syndication, and manipulation of content** make Facebook ideal for the generation of networked knowledge from bits of Web based interactional texts (p.63). Some scholars even refer to certain educational tools and applications that are available in Facebook, such as “the ability to create flashcards, form study groups, create online calendars, to-do lists, and even allow instructors to post videos for students to watch” (Jacobs, 2008 cited in Ophus & Abbitt, 2009, p.2).

A literature review of Facebook’s qualities that make it appropriate as an educational tool for both students and teachers can be found in Grosseck et al. (2011, p.1426).

4.7. How FB could be used in the academic world

4.7.1. Development of educational communities / communities of practice

Facebook could be used to create communities with an educational purpose (Bosch, 2009). The development of communities of practice is often cited as a possible academic use of Facebook. These communities may be with or without the involvement of instructors, and can take the form of a Facebook **group**, a **page** (which is more formal and one-way communication), or they can be materialized through the use of a professor's **profile** or through the **postings of Friends** that become available through the **NewsFeed or Notifications**. The group function however, has been the most commonly used for this purpose, as it will be evidenced by the case studies to be discussed in chapter 5.

4.7.2. Self-organised educational communities

Social software can facilitate the development of self-organised learning environments, i.e. communities created by students without any instructor influence, with the purpose of supporting the formal educational requirements, e.g. project work (Mathiasen & Dalsgaard, 2006). Students could use Facebook to form learning groups. Social software tools empower students' independent work and can also help students find resources through people in their network (Mathiasen & Dalsgaard, 2006). Such informal learning environments can play a supportive role to the formal learning environment. Mathiasen & Dalsgaard (2006) describe a case where students working on a group assignment used a conference system with similar affordances to Facebook. The students used various tools, such as discussions, primarily for short exchanges of questions and answers. They prepared for their face-to-face meetings by exchanging texts often supplied with comments for discussion. They used the conference system to inform each other with ideas, notes, references, links to websites, etc., and to collaborate on documents for the assignment. Finally, a major way that students used this conference system was to send back and forth documents with comments for revision and discussion (p.6).

4.7.3. Social Benefits

Facebook can enrich student life in academic and social ways. As mentioned by Mathews (2006, p.306) “Members can search for other students in their discipline, as well as their dormitory, keep up with old friends and make new ones, flirt, gossip, complain about classes, and post an unlimited amount of photos. Students can also form study groups, find out about upcoming events and parties, and stay connected with campus clubs and organizations.” These uses enrich the social side of the student experience. Social skills are also an important element for participating in group work. Because Facebook is socially constructed, it provides for the establishment of a social foundation between students, which is important before they engage in online group work (Visagie & de Villiers, 2010).

4.7.4. Enhancing communication between students and instructors

Facebook has been described as “an undercurrent communication channel that binds students and faculty” (Mendez et al., 2009, p.1). Mazer et al. (2009) argued that communication through Facebook can have a positive effect on the student-faculty relationships and ultimately create a more positive learning experience for both parties (p.15). Hewitt and Forte (2006) similarly found that some students liked the potential of getting to know their professors better through Facebook. This can provide practical benefits, (e.g. if used for last minute announcements) and psychological benefits (e.g. by strengthening students’ motivation and involvement, as it was pointed out earlier in the discussion of SNSs) with an indirect effect on educational outcomes.

4.7.5. Professor selection

Students can use Facebook for looking up faculty profiles in order to get an idea what the professor is like, before deciding to take their class or not. Mazer et al. (2007) found that high levels of teacher self-disclosure on Facebook had a positive effect on students’ anticipated motivation, affective learning and classroom climate. Furthermore, they found that students who view the Facebook profile of a teacher [whom they didn’t know in person] may be positively or negatively influenced in choosing a class taught by the specific teacher. This finding was replicated by Mendez et al. (2009) where 56 % of respondents “reported that they would be more apt to take a professor if they liked

his/her profile”, while 53% “would be more apt not to take a professor if they disliked his/her profile” (Mendez et al., 2009, p.5). However, it should be noted that it is the actual **content** that one posts rather than mere presence in Facebook that matters: “student perceptions of a teacher’s credibility and their reports of motivation and affective learning may also be affected by what the teacher discloses on Facebook” (Mazer et al. 2008 p.4). Thus, it is the nature of the information that teachers disclose in their Facebook profile may affect students’ perceptions, either positively or negatively (Mazer et al., 2007).

4.7.6. As a LMS

Fernández & Gil-Rodríguez (2011) observe that in most cases where Facebook is used for academic purposes, it plays the role of an additional tool, but they argue that it could actually be used as a LMS: “Although for the most part Facebook is being chosen as an additional tool within the educational process, there is the possibility of transforming it into a LMS, integrating administrative and content creation possibilities” (p.31). Examples of Facebook use as a LMS can be found in papers by Loving & Ochoa (2010) and Wang, Woo, Quek, Yang & Liu (2011).

4.7.7. Libraries

Facebook is perceived as an excellent mechanism for librarians to communicate with students because “it allows us to go where they already are; it is an environment that students are already comfortable with” (Mack, Behler, Roberts, & Rimland, 2007, p.4). Studies on Facebook use for libraries can be found in Mathews (2006), Miller & Jensen (2007), Mack et al. (2007), Secker (2008) and Bhatt et al. (2008). Facebook can be used as a tool for promoting libraries’ services to students. The benefit in its use is due to the sheer massiveness of Facebook, as librarians can reach a wide public of university students through it. The students, on their side, can contact the library/librarian directly and ask questions about whatever interests them. This ease of communication can be helpful for students, since they don’t need to search for the library on line. If they are already on Facebook and so is the library, things become much easier. Facebook’s speed and the immediacy of communication are two great benefits in this case.

4.8. How Facebook can be employed for academic use

4.8.1. Professor profile / FB account

The simplest option for an instructor who wishes to use Facebook academically is to create a profile on Facebook for communicating with students (Muñoz and Towner, 2009). Professors can then send messages, update their status, post on walls (their own or the students'), post subject-related links, images and videos, or through instant messaging for synchronous communication (Muñoz and Towner, 2009). Such communication, however, requires "Friending" between students and instructors, something surrounded by controversy, and can only be a free choice of the individuals in question. This is not an option that will suit everyone. A professor profile also implies a great deal of time and commitment on the professors' side, which not every professor may be willing to invest. As mentioned previously, although students suggested that Facebook might be used to access staff for queries about specific modules and courses (Madge et al., 2009), the authors expressed their reservations about this potential, explaining that "the time implications for staff may well preclude this idea being workable in practice" (p.150).

A successful example of using a profile is the story of "Stella" that is reported by Skiba (2010). This is a unique case, because "Stella" is not a person, but the nursing laboratory manikin, and the FB account under her name is actually run by the lab instructors. Such use may be contrary to Facebook terms & conditions that require that profiles are personal (<http://www.facebook.com/legal/terms?ref=pf>) and the alternative of a Page (meant for entities such as public figures, fictional characters, teachers, universities) might be more appropriate for Stella, according to Facebook terms for Pages (http://www.facebook.com/page_guidelines.php). In any case, Stella's profile is very popular with the department's students: "Stella" uses her Facebook account to send welcome messages to new students, post notices about exams, provide encouragement on test days, congratulate graduates, and much more. Students even use her page to sell textbooks, offer tutoring service or provide support. Through Stella the faculty can interact with students in a fun and non-threatening way and this has led to a better understanding between students and instructors (Skiba, 2010; Sherrill & Breed, 2010).

4.8.2. Facebook Pages

Pages are tools for mostly one-way communication, and they are used by celebrities, public figures, organizations, companies, etc. to disseminate messages or to communicate with a wider audience, e.g. fans or customers. **The content of pages is public.** An example of Facebook Pages used for academic purposes is the University of Limerick using a Facebook Page called “First Seven Weeks¹¹” to help new students get through their first seven weeks at the University. This page provides information that new students might find useful, such as bus timetables, university facilities, careers’ fairs, sports, alumni reports, etc. Students ask questions like “where is the P building?” and “What is the email for the financial office?” This Page had collected 1693 “Likes” by 11/11/2011. Diggins & Risquez (2010, p.11) explain that it offers information on things such as settling in, study skills, health, career service, learner support etc. The First Seven Weeks Facebook Page uses Facebook features/applications such as wall posts, photos, videos, events, downloadable maps and weekly planners, interactive exercises, useful links, discussions, etc. It should be noted that “Discussions” are no longer available on Pages as of 31st October 2011¹², as a result of a change in Facebook options. Old discussion boards have been removed from all Pages, which may have caused them a loss of data. This can be a serious problem, and it is an example of how a change in Facebook policies can adversely affect its members, since it is not controlled by them. Such an adverse effect was experienced during the study by Fernández & Gil-Rodríguez & (2011).

4.8.3. Facebook Groups

Facebook Groups are made up of Facebook users who come together because they share something common. They can be open, closed or secret, each option providing increasing levels of **privacy**. Their members can communicate with each other through the group, which serves as a ‘meeting point’. What is important is that **group members don’t need to be Friends** with one another. Instructors can communicate with their students through groups without Friending them, thus addressing any privacy concerns or the need to make specific privacy settings. Instructors can create a Facebook group

¹¹ <http://www.facebook.com/first7weeks>

¹² <http://www.forum-software.org/news/04102011-facebook-removes-discussion-boards-app-pages>

for a class, thereby allowing members to communicate with each other and themselves to send announcements and reminders to the whole class (Muñoz and Towner, 2009). Junco (2011b) suggests that a faculty member can “create a Facebook group for a course and ask students to socialize about course content and share course-related information from news sources” (p.11). He argues that students might perceive the information presented via such a familiar platform as more accessible or relevant to them. Groups can be used as discussion forums and for group work, since all the students who join can use it to communicate or share material. What is more, group members can choose to receive notifications whenever there is some activity on the group, so they won’t need to check for new content on their own initiative. Together with other qualities, this option makes groups very good discussion tools. Group members can share documents and edit documents together, so groups can be used by students working on a joint project. When groups are used by students working on a joint project, they act as self-organised learning environments. Facebook groups can benefit from discussion forums, file sharing, chat, e-mail, News feeds and other applications available on Facebook, such as Events. These tools can be used either among Facebook “Friends” as well as within a Facebook group. Groups will be discussed further in the next chapter, when the results of several case studies of using Facebook for academic purposes will be described. As it was observed, Facebook groups was the most commonly found way of employing Facebook academically, and the results of these ‘experiments’ may offer valuable insights for future uses.

4.9. Summary

It is not possible to cover everything fully in a short dissertation as this one ☺, however, the current chapter attempted to provide at least some information about the most important issues on the use of Facebook by students and instructors. The social uses were found to be prominent, yet it was obvious that there seems to be room for employing Facebook for academic purposes as well. Various tools exist that offer different options about how this can be done. The students’ and the academics’ views about Facebook were mentioned briefly, as well as relevant issues, such as the possibility of a negative impact on academic performance and the concerns for privacy and personal data protection. Methods of employing Facebook were presented. At this point, a **comparison with the findings of the previous literature review (Hew, 2010)**

is due. The current study, similar to the literature review found that students use Facebook mostly for personal/social reasons. However, this study found some studies that report higher rates of education-related FB use and communication between students and instructors. The time that students spend on Facebook was found to be slightly higher than in the previous review, while the number of Facebook Friends was similar. The relationship on FB and academic grades was highlighter further, especially through the contribution of two recent papers (Junco, 2011a and 2011b). Now we are ready to go to more depth and delve into some empirical examples of actual Facebook use, their characteristics and results. Several of the issues that were mentioned here in a theoretical manner will now be observed from an empirical angle.

5. Case Studies of empirical academic Facebook use

5.1. Introduction

In this chapter we will analyse and compare **19 case studies** where Facebook was employed in an academic context, each of which has been described by a research paper¹³. In all of these case studies Facebook was used with the purpose of promoting **learning**, rather than for any other reasons. A detailed analysis of these 19 case studies led to the identification of common features, which were further utilized to allow comparison between them. On that basis, we will try to identify patterns of Facebook use, which could possibly lead to a ‘best practice’ model of employing Facebook as a learning tool. If possible, we will try to discover features that are connected to successful cases (possibly factors leading to success) and features connected with the least successful ones.

There are **limitations** in this attempt. First, it is difficult to rate the success of every case study. We can do that based on the students’ and researchers’ opinions that are reported in each paper. However, the participants’ reported satisfaction cannot be quantified accurately. Furthermore, the number of case studies (19) is not sufficient for drawing definite conclusions or suggestions, and any findings derived from them can only be taken as a ‘guideline’. Also, the case studies could not possibly contain all the relevant findings (due to space limitations), so some features/findings may have been omitted from the papers. Last, for the purposes of comparison between the case studies, not all data could be found, as 3/19 scholars didn’t respond to the author’s emails, asking for further information.

One methodological detail that should be mentioned is that in some cases the data was not comparable / applicable, and so those cases have been omitted from the specific comparison, in order not avoid distortive effects to the findings.

¹³ A table for each case study, summarising its features, is provided in the appendix

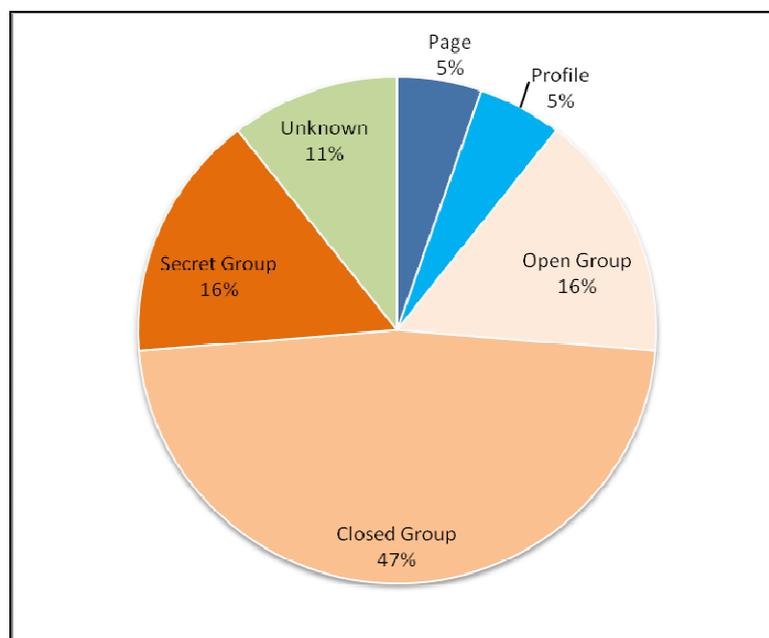
The case studies' characteristics are analysed here. Every sub-section is devoted to each feature, presenting the findings, reaching conclusions and making suggestions relative to the feature in question. Last, we will present the findings and suggestions of the papers describing each case study, which will further assist us in formulating a specific suggestion for using Facebook for the subsequent chapter.

5.2. Analysis of the case studies

5.2.1. Profile, Page or Group?

Out of the 19 case studies that were examined, one used a Facebook Page for a class, one used a Facebook Profile, and the remaining 17 used a Facebook Group. Out of these Groups, 3 were open, 9 were closed, 3 were secret, and for 2 this information is unknown. So, it can be concluded that a **closed Facebook group** is the most commonly used tool for learning purposes. Also it is noted that two cases started with an open group and then closed it.

Graph 2: Profile, Page or Group?



5.2.2. Field of studies

It seems that Facebook has been used by several disciplines, but slightly more frequently in computer science departments. A possible reason for this may be the instructors' and students' familiarity with IT in general, and with SNSs and Facebook in particular. Two other common fields were education and management/business. It has also been used for science and design studies. Its use for theoretical studies, such as law, literature, history, etc. was not observed, although this may be due to the small number of case studies examined. The findings from the 19 case studies are as follows:

Table 6: Field of Study where Facebook was used

Field	Number of cases
Computer Science / IT	5
Education	3
Management/Business	3
Engineering/Chemistry	2
Arts & Design	2
Pharmacy/Nursing	2
Tourism	1
Students of various fields	1

5.2.3. Country of the academic institution

No specific preference towards Facebook was found in any particular country, in proportion to its population, except perhaps for its popularity in South Africa. The rest of the case studies are widely distributed in several parts of the world. We should note that Facebook is blocked in China. The numbers of cases per country are as follows:

Table 7: Country of the academic institution where Facebook was used

Country	Number of cases
USA	5
South Africa	3
Australia	2
Malaysia	1
S. Korea	1
Thailand	1

Singapore	1
Japan	1
Sweden	1
UK	1
Spain	1
Turkey	1

5.2.4. Level of Studies

It seems that Facebook has been used for students in various levels of their studies, from 1st year to graduates. Out of the 19 case studies, this feature does not apply in two cases (one was a non-degree course and the other was intended for all the students of the department regardless of academic year), and it was not possible to find this information in one other case. For two cases the class was available to both 3rd and 4th year students, in one case it was for 2nd through 4th year, while in one case a Facebook group was used by both undergraduates (in various years) and postgraduates. The results show that Facebook has been employed largely for 1st year students, as well as 3rd and 4th year students, and less for 2nd year students. We observe that Facebook was used for students either at the beginning or towards the end of their studies. Experimenting with teaching methods may be easier with 1st year classes. It would be interesting to examine if successful academic use is related to the level of studies. The table shows how many cases were observed per academic year (the number outside the parenthesis are number of cases including students of only that year, while the number in parenthesis includes the cases where students were also of mixed years)

Table 8 : Year of studies

Year	Number of cases
1	6 (7)
2	2 (4)
3	2 (6)
4	3 (7)
Post-graduate	(1)
Total	13 (25)

5.2.5. Compulsory or elective class, compulsory or optional Facebook use, and whether or not Facebook participation was graded.

Out of the 15 case studies for which the information about the compulsory or elective nature of the module is given and relevant, 9 classes were compulsory and 6 were elective.

Out of the 16 cases where information is available on the nature of Facebook participation, in 6/16 participation was compulsory, while in 10/16 it was optional. So most cases did not to require students' participation, and left the option to them. If they saw it as useful or enjoyable they would appreciate the benefit and participate.

Another important aspect to examine is the combination of the above characteristics, presented on the following table:

Table 9: Nature of class and Facebook use

Class and FB use	Number of cases
Compulsory class – compulsory FB use	2
Compulsory class – optional FB use	7
Elective class – compulsory FB use	4
Elective class – optional FB use	2
Total	15

From the above, we conclude that the most common combination is for a compulsory class to make optional use of FB (7/15). The 2nd most common combination is for an elective class to make compulsory FB use (4/15). This makes sense: In compulsory classes, it is may not be fair to make FB use compulsory because there may be students unwilling to participate. Also, in an elective class, the students are informed in advance about the compulsory use of FB and may not enrol to the class in question, if they do not want to use FB. It should be noted that in one of the compulsory-compulsory cases, there was no penalty for non-participation, so it is questionable if FB use in this case can actually count as “compulsory”.

Next we will also consider whether FB participation was graded or not. It seems that in 6 out of 16 case studies for which this information was given, participation on Facebook was graded, while in 10/16 cases it was not. The grade that was given for Facebook usually counted as general **participation** in class. For three cases are the grade for FB

was in the range of 10%-15% of the overall grade, while two do not specify, and in one of the cases the grade was given as a bonus (2% additional to the final grade). We should also note that in 5/6 cases where FB was compulsory, it was also graded, which is to be expected.

Overall, out of the 15 cases for which all 3 types of information was found, two patterns of Facebook use can be observed:

- compulsory classes, where FB use is optional and not graded (7/15)
- elective classes where FB use is compulsory and graded (3/15)

Out of these observations, it is therefore suggested to use one of these combinations of the above characteristics when applying Facebook as an academic tool.

5.2.6. Duration of the FB activity and year of its introduction

In most cases, Facebook was used **for the entire duration of the course** (in most cases one semester, in some exceptions 4-5 weeks or 1 year), except for one case where FB was only used for 5 weeks in a course that lasted one semester. It should be noted that the Profile and the Page are on-going, while Groups are used only for the duration of a specific class. When the experiment is repeated in the following semester/year, a new group must be set up. The following table shows the number of cases that started using FB in the specific year.

Table 10: Number of cases per year (starting date)

Year	Number of cases
2007	2
2008	5
2009	7
2010	3
Total	17

There seems to be an increase in academic FB use from 2007 to 2009, which makes sense, due to the increase of Facebook's popularity during that period, yet there is a drop in new case studies/uses in 2010. This may either be due to a shortcoming of this research (inability to find all existing studies), or scholars may have actually slowed down with using Facebook for academic reasons, or (if they are still introducing it to the

classroom) perhaps they are not publishing research papers about it. The latter seems unlikely, since the volume of existing relevant papers is not high. Therefore, *if* indeed there is a decrease in new uses, it might be due disappointment from the results, difficulties in employing Facebook, or a turn to other tools.

5.2.7. Number of class students, rates of participation

Here we will examine if Facebook has been used mostly for small or large classes, and what was the rate of student participation in the cases where it was not compulsory. If possible, it would be interesting to find out if Facebook was more beneficial in smaller or larger classes. However, finding the correlation between class size and the degree of success of each case is difficult, for reasons previously mentioned.

When it comes to class size, we find that **groups** have been formed for classes of various sizes, ranging **from 11 to 850 students**. The average is **97** students per group, however, this value is influenced by two outliers on the upper part. Leaving out the two outliers, the average class size drops to **33**. The mode and median are both **30**. So the most common classroom size, for which a Facebook group was employed, was 30.

Next we will examine the rate of student participation in Facebook groups and their level of activity. This information was available for 14 groups. The average number of students who registered on an academic Facebook group was found to be **45** (this includes the cases where participation was compulsory as well as an outlier on the high end). The median was **28** and there was no mode. When it comes to rates of registration (and here we exclude the cases where participation was compulsory) these are on average **65%**. Thereby we can conclude (subject to the limitations of this study) that when registration to an academic Facebook group is optional, **it is expected that 65% of students will join**. However, it is noted that not all students who join actually do participate. The actual rate of active participation is lower. On most papers this observation is mentioned but the actual rate couldn't be measured accurately and wasn't reported. It is very difficult to specify student activity, and some students may participate only once or twice. Some papers do specify the rates of active student participation, and they range from 20% to 100%, but this data is insufficient for forming any confident expectations.

5.2.8. Students' age

As expected from student survey findings about SNSs' and Facebook's popularity, presented in chapters 3 and 4, some of the papers describing case studies found that Facebook was *more easily accepted by younger students*. Facebook groups have been used for students of various ages, although in the majority of cases the students were aged between **17 and 22**. In five instances there were students aged over 23. In four of these cases, Facebook use was not compulsory, neither was it graded (one was compulsory but was not graded). For five cases where Facebook use was graded and there is age information, the average age was 19.2 years. In the case studies, older learners were less familiar with Facebook and were more concerned with privacy (deVilliers, 2010; Wang, 2011). A possible guideline that can result from this is that if Facebook is used for older learners, it should not be compulsory or graded. However, this might change in time, since it may also be related to the students' familiarity with FB, and older people are becoming more familiar with Facebook, as well as Facebook users getting older in time.

5.2.9. Students' previous experience with Facebook

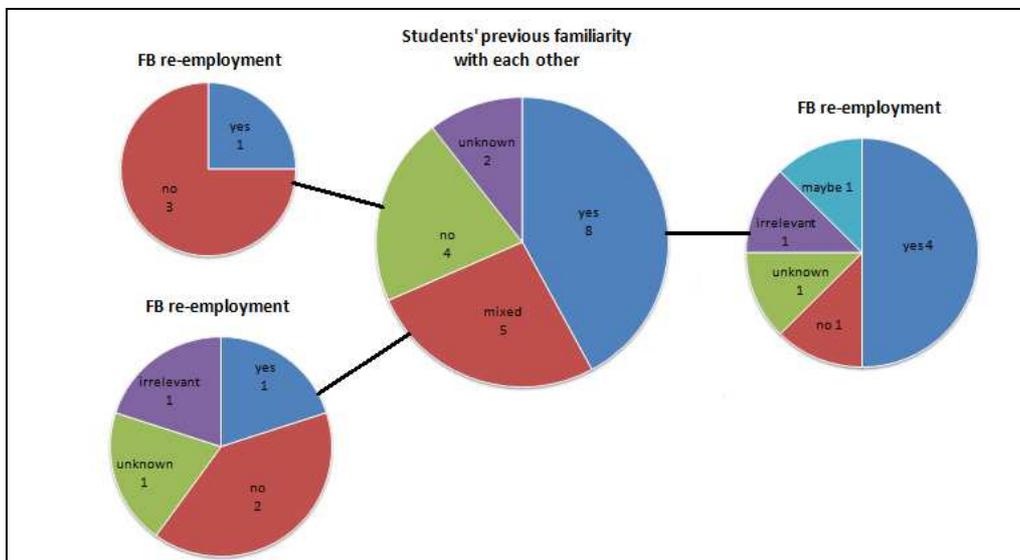
In only two of the cases did a very small percentage of the students have previous experience with Facebook (only 10% were familiar with it), and this was both times in Asian countries, where students were familiar with other SNSs. Another two cases report 75% and 80%, while in 13 cases it seems that the rates are over 90%. In cases where Facebook was optional, it is sometimes mentioned that those who used it were the ones who were Facebook members already.

5.2.10. Students' previous familiarity with each other

It would be interesting, if possible, to find out if previous familiarity with FB Group members helps get better results out of Facebook, or/and if it works the other way round, i.e. participation in the Group helping students become more familiar with each other. Information on students' previous familiarity is unknown in 2 cases. In 8 cases the students knew each other, in 5 it was mixed, and in 4 they did not (2 of these were

distance-taught). If we use the repetition of the FB group as an indicator of success, the following graph shows the number of cases where FB was re-employed compared to the students' familiarity.

Graph 3: Students' previous familiarity with each other and FB re-use



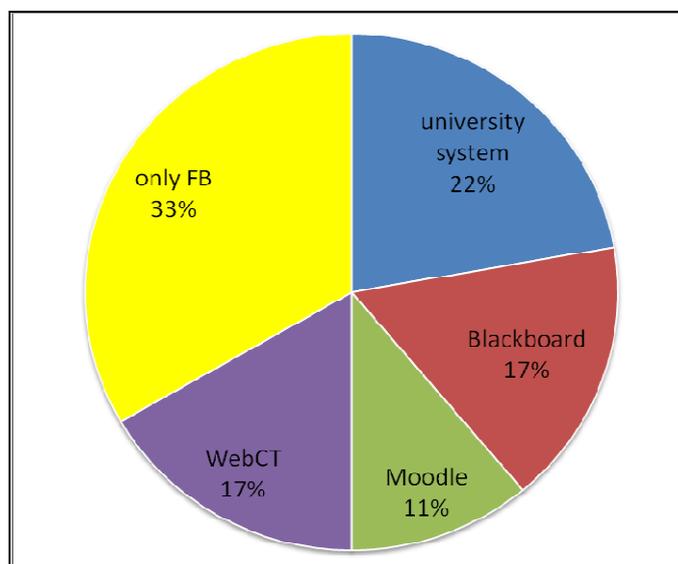
In the four cases where students didn't know each other in advance, FB was used again only in one, while in the other three it was not. Out of the five mixed cases FB was used again in one, not used in two, the information is unknown in one and not relevant in another (page). In the 8 cases where students knew each other, FB was used again in four, not used yet but the intention exists in one, not relevant in one case (student group), not used in one, and unknown in another. So, for the case studies that were examined here, students' previous familiarity with each other seems to be positively related with the repetition of a FB group for academic purposes.

5.2.11. Other e-Learning tools used in parallel

In some instances Facebook was the only tool used, while in others it was supplemental. Out of the 18 cases that provide this information, 12 used another tool in parallel to FB, while 6 did not. Out of the 12 that used another tool, four used a University web-based tool and 8 used a commercial system (Blackboard: 3, Moodle: 2, WebCT: 3). Using Facebook in parallel with another tool seems to be more common. Some case studies note that the two were used for different reasons. In these cases Facebook was used more for communication purposes, while the official system was used mostly for

uploading official course material. Perhaps it is of some importance to note that out of the 6 cases that didn't use another tool, Facebook use was repeated only in one. Similarly, out of the 12 cases that used another tool in parallel, Facebook was re-employed in five.

Graph 4: e-Learning tools used in parallel with FB



5.2.12. Was student opinion asked afterwards?

From the 17 papers where this information was given, it appears that 13 asked students their opinion about the experience with using Facebook for learning, their suggestions, problems, etc., while in four cases there was no such inquiry at all. Where student opinion was asked, this was done mostly via a survey (8 cases) or interview (4 cases). In one case there was an optional essay and in another (which also included a survey) students had to submit a 3-minute video explaining their opinion, as a required assignment. Another notable detail is that out of the six graded cases, five included a survey and so did the six compulsory ones. In two cases where there was no survey, the scholars recognized that this would have been a good idea. Clearly, if Facebook is used academically, it is advisable to **make a survey** afterwards and ask all the participants what they liked/disliked, suggestions for future use, etc. Such a survey should also include open-ended questions for students to make comments and explain their needs, suggestions.

5.2.13. Was there a seminar about Facebook use and privacy?

This information is known for 15 cases. In seven cases there was a discussion about privacy in the first lecture. In one of them there was a 2-hour workshop about Facebook for the students who were not familiar with it, and in another the instructors also stressed professionalism and posting appropriate material, something they included in the syllabus as well. In two other cases there was no special seminar, but some very simple instructions were given and the method of using FB for learning was explained. In six cases no seminar or instructions were given, because the students were already very familiar with FB (in two of them this is clearly related to the fact that students were computer science majors). Only in one case (involving older learners) is it recognized that a seminar wasn't given although it might have been needed. An interesting observation from this data is that 6 out of 7 cases which offered a seminar were graded, and that all of the graded cases offered a seminar. The advice we can derive from this is that it is best to offer students some advice in the opening lecture about how FB will be used for class, explain what material is appropriate for posting on the group page and what not, and offer some privacy advice. This can be modified according to the students' familiarity with Facebook. If it is new to them, maybe more time should be devoted to this part. If the Facebook activity (whatever its nature) is graded, it is advisable to give students such a seminar in the first class meeting and offer some privacy instructions as well.

5.2.14. Was there also class time or was it only on-line?

Out of 19 cases, 16 involved class-time as well, so obviously Facebook was mostly used as a supplemental tool to face-to-face meetings. In the three other cases, two used Facebook for a distance-Learning class (students had never met at all), and one used it to support students who were on practicum for 5 weeks (they knew each other, but didn't meet in person during the 5-week period). In one of the distance cases it is mentioned that although some people appreciated getting to know their classmates better through Facebook, some students used profile pictures of pets or babies, perhaps for privacy concerns. These concerns eliminated the potential benefit that could result from forming a community and from getting to know their classmates better. One case reports no improvement in the relationship between post-graduate students (Wang, 2011) although such an improvement was observed among the undergraduates involved

in the very same FB group. So the difference may be due to age or other factors (the postgraduates in that study were older and less familiar with FB) e.g. priority given to work or family. Among the cases that involved class-time, one was of 1st year students who didn't know each other before, and it was observed that Facebook helped them get to know each other better, and to start talking with fellow-students with whom they otherwise wouldn't. Perhaps Facebook can help bring new university students closer, as also suggested by Madge et al. (2009), however, real-world contact seems to be important. Madge et al. (2009) also find that Facebook is not the only aspect of social networking, and that face-to-face contact remains significant (p.152).

The conclusion from the above is that if Facebook is used for distance-Learning courses, one should make sure that the participants feel secure and are familiar with privacy settings. If possible, arrange a real-life meeting at some point of the course. As the case studies indicate, Facebook seems to work better for students who actually meet in person as well. Students might feel more at ease to interact with people with whom they also share an off-line connection, as the theory about Facebook suggested in the 4th chapter. It is a great tool to get 1st year students to get to know each other better and to help them settle into university life.

5.2.15. Were there irrelevant/annoying comments?

Out of 15 cases for which this information was found, 7 report that there were no irrelevant comments. The other 8 explain that there were some irrelevant posts, such as questions about other classes or technical matters, jokes/humour, and that sometimes the discussion moved from the subject matter to social interaction, but this was not observed at a great extent and not considered to be a problem. Rather, instructors thought that some humour was alright to make the experiment more enjoyable to students. In two out of these 8 cases there was actually some annoying behaviour. In the one case it did not come from a student but an intruder (who was allowed to join the group by mistake) who tried to sell 'get rich' books to the students, and in the second case some students made impressionist comments on the group wall. Both of these cases were found in two of the South African examples. This may be due to coincidence, or in the first case the reason may be that it was a distance course, so students didn't know each other personally (thus the intruder was not instantly

identified), and in the second case the group had a huge number of members (165) who were 1st year students (mostly 18 years old). Among the 7 cases where no irrelevant comments were reported, only one involved 1st year students. This indicates that students closer to graduation may be more professional in the way they interact on a Facebook group page. Similarly, in all but one of the 1st year courses (5/6), there were humorous or other comments made by the students. Overall however, we observe that students do stay focused and only make few irrelevant comments, which instructors do not discourage, in order to create a friendly atmosphere. Some cases mention that students were given guidelines about what is allowed and what not on the FB group, and this is recommended.

5.2.16. Did the instructor make a teacher-only profile?

In four cases the instructor made a new profile to use exclusively for communicating with the students. These would be 5 if we also counted the profile that was made for “Stella” the nursing lab manikin. Yet the way to see it is uncertain, because this is not exactly an instructor profile. In one of these cases the instructor realized that a ‘teacher-only’ profile didn’t work for him and eventually merged the two (Peter Ractham, personal email communication). In 11 cases the instructors used their real profiles. Therefore, it can be concluded that it’s more common practice for instructors to use their real Facebook profiles.

5.2.17. Did the students make a new profile?

In 14 cases students used their actual profiles, in two some did and some didn’t, and in one case all students made new profiles for using them for class. In order to benefit from the Facebook group, it is advisable for students to use their real, personal profile, through which they log onto Facebook anyway. One of the reasons for using Facebook in the first place, is that students are on it frequently already, and this makes it appropriate as a means of communication. If students made a new profile, they would not log into it as often and for as long as they would with their real one, so the benefit of employing Facebook would be largely lost. As Wang et al. (2011) point out, this may result to loss of social dynamism and compromise the sustainability that makes Facebook popular (p.9). Siemens & Weller (2011) note that although some SNS users

have multiple accounts to separate the personal from the professional, “it is precisely the personal element in SNSs that gives them value and interest” (p.166). Jones et al. (2011) also note that in two Universities in the UK, where students used new profiles, they eventually switched to their original ones. Furthermore, in a survey of 131 Romanian students (all FB members), 54.2% strongly disagreed with the idea of having two Facebook accounts, i.e. one for personal and another for educational uses (Grossek et al., 2011, p.1428). Clearly, it is suggested that if students join a Facebook class group, they should use their real profiles, and not make new ones specifically for that use.

5.2.18. Participants

In most of the cases the participants of the FB activity were the students and the instructor. Sometimes there were two instructors, while in some cases there were additional participants. In detail: In 10 cases participation was limited to one instructor and the class students (ranging from 9 to 100 students). Another 5 cases involved additional members of staff, such as another lecturer, teaching assistant(s), the course librarian or the course secretary, all of whom were involved with the regular running of the course. Two cases included staff who were not related to the course, but participated as observers or guests. Other students took part in one of the groups as observers, while older students (or alumni) and outsiders were welcome (after approval) in the case of the Facebook Page and in the case of the Profile. We can observe that the most frequent pattern is for a FB group to be used by the instructor and the students and sometimes it is done with the participation of teaching assistants, or other staff that is directly involved in the course. The participation of observers was found less frequently (4 cases). This is probably due to the experimental nature of the project, i.e. observers may be instructors who are interested in using a similar group for their own courses and additionally they can provide useful advice. Furthermore, the Page/Profile was not intended as a ‘student-only’ private space.

5.2.19. Postings / participant

It was originally intended to examine the number of postings/participant in every group, as an indication of student involvement and of the success of the initiative. However, in most cases this is not reported, and further, the numbers are not comparable, due to

different durations of the courses and different requirements on the students, regarding posting material (in some cases it was compulsory to post material every week). So this parameter will not be examined.

5.2.20. The instructor's role on the Facebook class activity

In some cases instructors kept a distance, trying to let the students construct knowledge, without interfering. In other cases instructors played a more active role, spending quite some time online, and guiding the discussions. In both cases the observations are as follows:

In five cases it was pointed out that the instructor took a more 'quiet' role and preferred to 'participate, but not lead'. The two distance-Learning courses were in this category. Some instructors intervened only in the case of wrong information. Others made it clear that the correct information is given in the study material and that the information discussed by classmates on the FB group should not be counted upon. In 13 cases the instructor played a more active role. Some of the most common ways in which instructors contributed/participated were the following (some cases included more than one, while others didn't specify):

- Asking questions to prompt students to participate in discussion (6 cases)
- Adding material such as educational videos, photos and links to relevant sources (3 cases)
- Answering students' questions that they couldn't answer themselves (2 cases)
- Answered students' questions by private message (2 cases)
- Facilitated activities to create a social learning space (1 case)

Therefore it is concluded that instructors participated in class Facebook groups (or page or profile) mostly by asking questions to initiate discussion among students. This is an active role, and it indicates that the instructor's presence is essential for the students' subject-related interaction. Secondly, instructors provided links to subject-related material, thereby exposing the students to more information and giving them the opportunity to learn more. Finally instructors answered students' questions on the wall, when the students couldn't provide an answer on their own, or even by private

messages, which was rather a demanding task and didn't allow other students to benefit from the information (as would have been the case if the question had been asked publically on the group wall).

An interesting question is if students would still benefit from a FB group if the instructor didn't devote much time and effort to it, or if there was no instructor participation whatsoever. Rooyen & Pieterse (2009) who compared a formal and an informal (student only) discussion forum conclude that although there is some benefit in informal, students-only forums, formal discussion forums, where certain strategies are employed to encourage regular student participation, have higher educational value. It seems that there is difficulty in creating a learning community for students and letting it run by itself, without instructor guidance. The students seemed to be participating mostly as a response to the instructors' comments/posts (this is mentioned clearly in three cases) and instructors asked questions to prompt discussion, which otherwise wouldn't take place. An instructor's active participation might therefore be a success factor for FB groups **as discussion forums**. This is in agreement with Selwyn (2007), who found that students would rarely talk about class on Facebook, and would do so particularly near deadlines or when a project was shortly due. We may suggest that students don't seem eager to discuss the subject material outside class unless there is something they don't understand and need to ask. Most students would not discuss class material on their own initiative, without a little 'push' from their instructors, such as the FB activity being graded or the information being needed, e.g. for an assignment. Whether it is desirable to promote pure academic debate by making it compulsory is an educational strategy decision. FB groups are not *only* meant as a forum for academic discussion. If, however, they are used as such, the instructor should be prepared to devote a significant amount of time to the activity. Creating a group and letting it run by itself may not produce much academic discussion. Participation might be higher if there is **a specific task to do on Facebook**, such as for students to collaborate on editing a document, to submit homework, take quizzes, or other activities. Using Facebook merely for academic discussion does not seem to provide students with enough motivation.

5.2.21. Comparison with other e-Learning tool

Facebook was more popular than alternative university-provided discussion tools, when such were available. Participation was greater in discussions on Facebook than in institutional LMS (reported in 8 cases) and students didn't like logging into another system, whereas they were on Facebook already (Bae, 2010; Rebecca English, personal email communication). An advantage of Facebook over the LMS is that when new material is uploaded all the students receive a notification, while with other systems the student needs to check for new material (Bunus, 2010). Students log on to Facebook anyway, but they need to log in to the university system specifically to see if something new is up, and very often there isn't, which may act as a discouragement of frequent visits. If there was a way **to send notifications on students Facebook profile whenever there is some activity on the university LMS**, it could be very useful. This could be achieved for example through a specifically-developed application that students could add to their Facebook profile. This would be similar to what many students already do with their university emails: forwarding them to their other personal email address (interviews with project management students). In some of the case studies Facebook was used for different purposes (mostly for communication) than the university system (for instructional purposes). Some researchers argue that FB can be used **instead** of an LMS (Loving & Ochoa, 2010; Kayri & Çakir, 2009) while others find the limitations too strong (Wang et al., 2011). One of Facebook's shortcomings that were noted was the impossibility of uploading pdf and editing documents, however this is now possible. One of the following sections, on the FB tools that were used, discusses this issue. Another difference between FB and university LMS is that with Facebook previous years' students and alumni can also participate (Bunus, 2010; English & Duncan-Howell, 2008; Skiba, 2010; Wang et al., 2010).

5.2.22. Was the 'experiment' repeated?

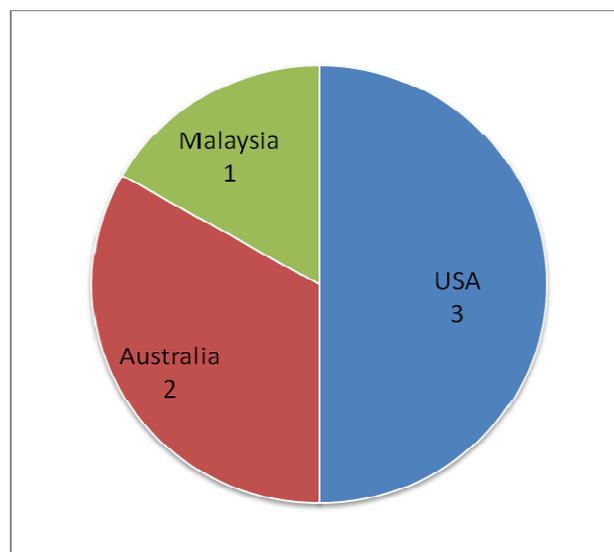
The repetition of the 'experiment' (i.e. the use of Facebook as an academic tool) may be used as a criterion of its success. Out of the 19 cases that were examined, three did not provide this information, while for another three this question does not apply (the student group, the Page and the Profile). That leaves 13 cases where the re-employment of a FB group in the following semester is relevant and the information given. In six of

these cases, a Facebook group was used again. Among the 7 cases where it was not, in four it was decided not to use it, in one case the intention to do so exists, while in two cases the reason was a change of instructor: The one who started the group changed jobs, and the one who took over the course didn't continue with the FB group. This also happened in one of the cases where FB was re-employed, and therefore it was repeated only once. Overall, we observe an even split between repetition and non-repetition. It should be noted that in 4/13 cases the idea of using FB was consciously abandoned. It would be interesting to look into the reasons why in these four instances FB was rejected as a learning tool. We could also examine the characteristics of the six cases where FB was re-employed, and compare them with the ones where it wasn't. However, their small number is a limiting factor in finding statistically significant correlations, making generalizations and reaching confident conclusions.

Now we will attempt to identify common characteristics between the cases where a FB group was repeated in the following semester/year and where it was not:

Out of the 6 cases that were repeated, 3 were in the USA. This may be a coincidence, or there may be other factors that played a role. Both of the Australian cases were also repeated. The sixth one was in Malaysia. In 5/6 cases where FB continued being used are in English-speaking countries. This may be a coincidence due to the small number of cases that were examined, yet it must be noted.

Graph 5: Countries where FB was re-employed



Furthermore, out of the 6 cases that were repeated, **three were compulsory courses with optional FB use, which was not graded**. There had been 7 cases with these characteristics. Out of the other four, one is the Page (which is on-going by nature), one is intended for repetition, for one the repetition is unknown, and for the last one repetition was not possible due to a change of instructor. None of them were discontinued because of a problem relevant to Facebook. The other three cases that were repeated were **elective courses with compulsory FB use, which was graded**. These were the total of cases with the same characteristics. This might indicate a success pattern, which becomes more evident when we consider the fact that out of the two cases where the class was compulsory and FB use was also compulsory and graded, none were repeated. Although it cannot be suggested that these characteristics were responsible for the success/failure of the initiative, all the above information can be at least indicative, and simply taken into consideration when planning to use FB for education.

In all of the cases where FB continued the students knew each other personally. In both distance-Learning classes, the FB group was not repeated, yet in one of them the instructor said she would have done so if she hadn't stopped teaching that class.

It was also observed that in 5/6 cases that continued there was another tool used in parallel with FB. In 3/4 cases where it was consciously not repeated, no other tool was used (for the other one it is unknown).

In one of the FB groups that were not repeated, there were 165 student members and as a result, the (one) instructor who was charged with answering their academic questions was overwhelmed. A Page might be a more viable option for such a large class, and this was the choice for one of the case studies, for a class of 170 students. Also, one of the cases where FB use continued, a group was used until 2010, but from 2011 and on a Page is used instead. This was a class of 100 students, all of whom had to join the FB group, so this was the 2nd largest group among the case studies that were examined. Perhaps indeed class size plays a role in the decision between Page/Group: For classes of 100 students and above (perhaps fewer), a Page seems to be more suitable.

An interesting observation is that the decision to use FB in class is very much dependent on the specific instructor. Using Facebook for class is not an established practice of the educational institution, and therefore, when there is a change of staff, the new instructor might not continue this practice.

5.2.23. Tools that were used on Facebook

The following table lists specific tools and applications that were used in the 19 case studies that were examined, and the frequency with which each one was met.

Table 11: tools that were used on FB

Tool	Number of cases
Wall	17
Discussion Board	14
Discussion (on Wall or Board: unknown)	2
Photos	10
Links	9
Videos	6
Private Message	5
Quizzes	3
Events	3
Live Chat	1
Tagging	1
Notes	1
Other FB apps	1
External apps	3

It seems that the most popular tool is the Wall, which was only to be expected, as it is the first thing that one sees when visiting a group, page or profile on Facebook. The Discussion Board was very popular for holding separate discussions on various topics, however, Facebook decided to discontinue this application, as explained in the previous chapter. Photos, links to subject-related material, videos and private messages were also popular. Quizzes and Events were used in some instances as well. Several studies pointed out that Facebook has limitations and that it is necessary to use external applications (Bunus, 2010; Fernández & Gil-Rodríguez, 2011; Loving & Ochoa, 2011)

or to build specific applications (Wang et al., 2011; Bunus, 2010; McCarthy, 2009) in order to make more extensive use of FB as an academic tool. In one of the case studies an application was used that was custom-made for that class (Bunus, 2010). It is called “Social Network in Education” and it was launched on Facebook in October 2011 (https://www.facebook.com/note.php?note_id=10150404702611469). Students can use it to practice subject-related questions and it aims at helping them prepare for their exam in a fun way. Some case studies resorted to using links to external applications, such as Blogger (Fernández & Gil-Rodríguez, 2011) and Googledocs (Wang et al., 2011) or email, spreadsheets and other non-FB integrated tools (Loving & Ochoa, 2010). Another study suggested a FAQ application, so that students wouldn’t repeat questions that had already been answered (Rambe & Ng’ambi, 2011). Developing Facebook applications for education is an area where further research is needed.

5.2.24. Reasons for employing Facebook and Expected Benefits

The table below lists the reasons why Facebook was employed in the examined case studies and the frequency of each. The reason was often an expected benefit.

Table 12: Reasons and Expected Benefits from using FB

Reason	Number of cases
To explore the potential of FB in higher education (as an ‘experiment’)	15
Students were using it already	14
To enhance communication, discussion, debate	11
To support/facilitate learning	11
To engage/motivate students	10
To provide an additional place for learning & interaction (as a complement to the classroom)	8
To encourage knowledge sharing among students	7
To support participative learning in a constructivist way	4
For the students to get to know each other better	3
To form a ‘community of practice’	3
To use it instead of a LMS	3
To encourage collaborative work among students	2
To connect students on a practicum (for emotional and practical support)	1

Some cases might have had additional purposes, but only the ones that were clearly stated are mentioned here. For instance, although all of the case studies apparently intended to promote/support students' learning, this was clearly stated as an aim only in 11 of them. The table above can be taken as an indication of the reasons to employ FB and the expectations of doing so. We observe that FB is often employed because students are already using it (14 cases), and it is seen as a way to engage/motivate students (10 cases). It is also used to facilitate subject-related discussion (11 cases) and to provide an additional place (besides the classroom) for interaction and learning (8 cases). FB is also expected to encourage knowledge sharing among students (7 cases), while it was also hoped that participative learning according to the constructivist paradigm would occur (4 cases). Most of these observations exemplify instructors' expectations that students would interact with each other on the FB group and be more active, doing things on their own (rather than being guided by an instructor).

It should be noted that 11 cases specifically referred to the experimental nature of using Facebook as an academic tool. They tried it out to see if it could work, to explore the ways in which it could be used, its benefits, student reactions, and more. This was because SNSs are relatively new (generally) and untried as an educational tool. Although educational theories and surveys have offered various expectations and suggestions about the educational use of SNSs, **it is necessary to experiment** in order to find out if the empirical findings are the expected of different ones. Just like with any experiment, the use of Facebook as a learning tool should be carefully designed and applied in a controlled manner, and objective measures for its success should be set. Most cases included a survey to measure student opinion. However a more quantifiable measure would be needed.

Some case studies involved activities specifically designed for the FB group, while others were less organized and students were free to use the group in whatever way they liked. It is advised to have things planned and organized in advance, rather than create a FB group and let it run itself.

5.2.25. Educational activities on Facebook

The following table presents the specific activities that took place on Facebook on the 19 case studies.

Table 13: Activities that took place on Facebook

Activity	Number of cases
Students asked questions about the subject (e.g. theory which they hadn't understood)	8
Continuation of in-class discussion and discussion of the material, students' thoughts about it, etc.	8
Students asked for help/advice on assignments, solving problems, etc.	7
Students shared information, resources, links, etc.	7
Instructors provided links, material, etc.	6
An assignment had to be posted (regularly or not) and commented on (or not) by other students	6
Making announcements about deadlines or asking for such information	5
Students shared their experiences	5
Students got feedback from others	5
Students practiced on the material (quizzes, questions)	4
Students encouraged each other (psychological support)	3
Organisational purposes	2
Taking class attendance	2
Submitting coursework	1
Students collaborated on assignments	1
Students complained about class	1
Students shared solutions to assignments (after the deadline)	1

The most popular activity was students asking questions on the subject, trying to clarify things that they hadn't understood. Students could have used office hours instead, asked another student, or asked the instructor at the next class meeting. Some discussion of the taught material also occurred, so Facebook served to extend class time. The next most frequently used activity was students' asking for assistance with assignments or solving problems. The fact that classmates are frequently on Facebook is a great help in this case, because when someone posts a question on an assignment, another student is probably there to see it. Students also shared resources and links to relevant material, an

activity also undertaken by instructors. In some instances the instructors had designed and requested a specific homework assignment to be posted on the group page either every week or less frequently throughout the semester (e.g. picture competition in one of the case studies). The FB groups were also used by instructors for making announcements and by students for getting informed about announcements. Other frequent activities include students sharing their experiences, providing feedback to other students about their work, and practicing on subject material, e.g. through quizzes ('edutainment').

5.2.26. Benefits from Facebook use

Here we shall present the benefits that were observed in the 19 case studies that were examined. Overall, many benefits resulted from using of Facebook. The most frequently observed ones seem to be related with the **ease and convenience** of communication, probably because students were already on Facebook. Next was the promotion of discussion among students (although this was often prompted by the instructor), the improvement of social relations among the students and an increase in student motivation. The ability to communicate a message to all the students through FB came up, as well as the speed of communication, collaboration among students and the fact that students exhibited critical thinking through their posts on the discussions. Some benefits are social (e.g. improved contact between students, or between students and instructors) but academic benefits were realized too, such as collaboration, critical thinking, motivation, help with solving problems, practice for exams, and generally greater involvement of students with the class.

Table 14: Benefits that were observed

Benefit	Number of cases
Easy, convenient, 24/7 communication	11
Discussion / interaction was promoted	10
Students developed social relations with each other (feeling of community)	10
Participation increased / Students were motivated	10
FB was provided a method to communicate with all the students	8
Quick communication	6
Promoted student collaboration	6

Students exhibited critical thinking	6
Students learnt	5
Students did independent research	5
Students received encouragement / support	5
Instant / Quick feedback	5
Students got help with solving problems	5
Knowledge was constructed (constructivist theory)	4
Shy students found it easier to ask questions	4
Conversation moved from class to FB	4
Students could communicate with older students/ alumni	4
Answers are saved, so students can look them up	3
Conversation moved from FB to class	3
FB costs nothing to use	2
It is student-centred	2
It became a repository of student-generated data	2
The profile photos improved communication	2
It could be used by mobile phone	2
Students "Friended" each other	2
Students and faculty got to know each other better	2
It helped to think about class between class meetings	2
It helped practice for the exams (by using quizzes)	2

5.2.27. Problems and other issues

As well as benefits, problems were also reported. They are listed here, together with some possible solutions. It is noted that **privacy** concerns were the most frequent issue with students. Therefore, care must be given to address these concerns in order to improve the educational potential of Facebook. Furthermore, using it for education requires **additional tools** or the design of **specific applications** for each class (or applications that could be used by educational institutions in general), which is no surprise, since Facebook was not designed as an educational tool. It is now possible to upload/download pdf and other documents, which has been a great improvement for educational purposes. Another limitation was shy students' not feeling confident enough to post, knowing that their comments would be visible by the entire class, yet sometimes this changed as they observed that others were in a similar situation. Another problem that must be mentioned is that the **time** required was sometimes too much for the instructors. If Facebook is applied as an additional activity (rather than replacing

some other course tool), the instructor must devote some extra time to it. This must be seriously taken into consideration before starting to use Facebook for class. If the instructor doesn't participate (e.g. by answering students' questions), the educational benefit of the initiative will be less than envisaged. Another problem was lack of notifications when a member posted on the group. This has changed now and members can edit their settings to receive notifications whenever there is any group activity. **This is highly recommended.** It has also been mentioned that because Facebook cannot replace the LMS students would need to check for class information in two places (which would be time-consuming), yet students log into Facebook anyway and they will be notified of any group activity as soon as they log on their profile, so that is no additional trouble for them. In some cases students sent private messages with questions to the instructor, so the other students could not benefit from the answer. When receiving such a subject-related question, the instructor could provide the answer on the wall (without revealing which student asked it) for the benefit of the entire class (this was done in the case study by White, 2009). The following table shows the frequency with which each problem was reported:

Table 15: Problems that were observed in the case studies

Problems	Number of cases
Privacy concerns	7
Need for additional applications	6
Insufficient tools for education (limited post length, can't be used for grading, assignment uploading, online testing, maintenance of records, attachments)	5
Impossible to upload/download documents, pdf, etc.	4
Shy students didn't feel confident to post, didn't want t to be judged by teachers/students	4
Time-consuming for instructors	4
Some annoying posts / totally irrelevant posts	3
No feedback/answer to all the posts/questions	3
Lack of notifications when someone posted something new	3
No access from some countries, workplaces, universities	3
Can't force students to use FB if they don't want to	3
Students were concerned of being misled by other students' inaccurate postings	2
Distraction from other things on FB	2
It might be difficult for older learners	2

Lack of flexibility, customization, personalization	2
Students might not participate if there is no incentive (other than the possibility of learning)	2
Too short duration (5 weeks)	2
Additional applications are needed in order to use it as CMS/LMS	2
Students felt it was imposing homework at a private space	2
No threaded discussions, students had to explain who they replied to	2
Some students didn't use personal profile pictures	2
It is hard for instructors to let go of the control	1
It can't replace the LMS so students still need to check that. Time-consuming, creates 2 places to check.	1
The university has no control over FB, so if it changes its features the class may be affected negatively	1
Students asked the same things, couldn't check easily if someone else had also asked before	1
Many students sent private message to the instructor and requested a private response, so other students couldn't benefit too	1

5.2.28. Student opinion

The table below presents the most frequent opinions that students offered about the use of Facebook as an academic tool. It must be noted that not all of the case studies inquired about student opinion. From what is available, we can tell that students found it **useful and fun**, appreciated the **convenience** of being able to use it at any time of the day. Furthermore, it provided **academic** as well as **social** benefits.

Students' opinion about the use of FB for class	Number of cases
It was useful	9
They enjoyed it	8
It was convenient (24/7)	7
It helped them learn	4
It helped them get to know their classmates	4
It provided quick/instant communication/feedback	4
It was easier to participate than in class	3
Wanted the instructor to be more involved	2
It helped them get to know their professors	1

5.3. Findings and Suggestions from the case studies examined

The scholars who wrote about the case studies that were discussed in this chapter reached their own conclusions, made suggestions on the use FB for academic purposes and pointed out areas for further research. These will be presented here. The author's findings and conclusions were presented in parallel with the analysis above, and they will be summarized in the concluding chapter.

5.3.1. Findings

User-generated content seems to be the key to the success of Facebook group pages (Bae, 2010). If students do not consider the online discussion interesting or useful, they are not likely to participate, unless they have another incentive, such as participation being compulsory or graded. As noted by Szwelnik (2008), only a few students engaged in an on-line discussion that was initiated by the instructor. Also, some students are more active and will post to the group more often than others (Fernández & Gil-Rodríguez, 2009). Bae (2010) concludes that: "For those who are interested to do more, it may be more beneficial. A Class Facebook page resembles a company R&D centre that is open to the interested, involved, and qualified consumers". On the instructors' part, the challenge is to let go of the control (Bae, 2010), which has proven to be difficult: "Values such as horizontality and openness are not simple changes to the educational design but imply a special effort to be made along many different lines in order to change a 1.0 paradigm which is more ingrained in our teaching minds than we had thought" (Fernández & Gil-Rodríguez, 2009).

It is possible to have two groups for a class, a formal and an informal one, working in parallel. Students began their own group e-mail to each other in the case study by White (2009) and there were two groups, a formal and an informal one, presented by Rooyen & Pieterse (2010) though not both on Facebook. Formal forums (in general, not only on FB) were found to have greater educational value (Rooyen & Pieterse, 2010), attributed to the application of certain strategies, which are listed in their paper. The educational value of a forum is mostly dependent on good administration (ibid). In an informal forum, students might share different things than in a formal one, such as expressing

complaints and providing solutions to assignments, although after the deadline, as in the case reported by the above authors.

Some students expressed their preference for using one official, university-approved technology for all modules (Szwelnik, 2008). Although FB would not constitute a new tool for the majority of the students, it might be confusing not to use the same system for all classes.

Furthermore, in order for students to feel free to post on a Facebook group page, they “must feel safe, secure and comfortable” (Wang et al., 2011). If these conditions do not exist, a sense of community cannot develop, and the success of the group will be undermined.

Possible success factors for an academic FB group include small group size, previous familiarity among all the members and a good rapport between students and teachers (Fouser, 2010; English & Duncan-Howell, 2009).

Another factor that promotes the success of a FB group is for participants (both students and teachers) to use their real Facebook accounts. If students use new accounts, created specifically for class, there may be a loss of social dynamism and a compromise of the sustainability that makes Facebook popular (Wang et al., 2011). An instructor decided to integrate his professional and personal profile, as over time using separate profiles proved to be unsuccessful (Peter Ractham, personal email communication).

A Facebook Page can connect students with alumni (Bunus, 2010), and so can a Profile (Skiba, 2010), whereas groups are meant for a specific class, and a new one needs to be set up for each class every year/semester.

In order to participate in a FB group, an instructor doesn't need to become Friends with the students (Schroeder & Greenbowe, 2009; Wang et al., 2011).

Some universities do not encourage the use of Facebook for instructional or any purposes, for reasons such as student privacy protection, or distraction. Receiving university approval to use it may be a time-consuming, bureaucratic procedure. Also,

because FB use in class is not institutionalized, a change of instructor may lead to the discontinuation of its use (this happened in the cases described by deVilliers, 2009; Schroeder & Greenbow, 2009; White, 2009).

5.3.2. Suggestions

Several case studies pointed out that additional tools and applications are needed for Facebook to be used effectively as an educational tool (Bunus, 2010; Fernández & Gil-Rodríguez; McCarthy, 2009; Loving & Ochoa, 2010; Rambe & Ng'ambi, 2011; Wang et al., 2011). Bunus (2010) and McCarthy (2009) suggested that course-specific Facebook applications should be designed and constructed, and expressed their intention to build specific Facebook apps for academic use. Third-party applications are also needed to extend the capability of FB groups to act as a LMS (Wang et al., 2011). A more specific suggestion was for a FAQ application, to allow students to search frequently asked questions by other classmates, so that they needn't ask the same question again. This would save instructors' time and reduce the number of redundant questions (Rambe & Ng'ambi, 2011).

It was sometimes suggested that FB might be more appropriate for undergraduates (deVilliers, 2010) or younger students (Wang et al., 2011). A student survey showed that those who already used Facebook for personal reasons were more positive towards its use as an educational tool (Kayri & Çakir, 2009). It was also suggested that Facebook could be a good learning tool for special needs learners, such as autistic learners who battle with face-to-face communication (deVilliers, 2010). Facebook cannot be compulsory for distance-Learning courses, because some students may not have access to it (deVilliers, 2010).

If Facebook is used for students without much previous experience with it, it is best to provide a tutorial to explain how it is used (deVilliers, 2010) and give privacy advice. Some research concludes that FB is more effective with an instructor's presence (Kayri & Çakir, 2009).

Before committing to using Facebook, instructors should verify that all the members of the class have a Facebook account or are otherwise not opposed to signing up (Loving & Ochoa, 2010).

Academic FB groups should have the maximum degree of privacy, and therefore should be secret (private) (Loving & Ochoa, 2010).

When the group is set up and ready for the class to use, the instructor could add a mission statement, e.g. in the section for the group description, in order to spell out in detail the goals, expectations, expected roles, obligations, and the rules for appropriate behaviour of both educators and students for this page (Rambe & Ng'ambi, 2011).

In most of the case studies that were examined Facebook wasn't used for posting course material. Another, system, university-approved, played this role. It was suggested that FB can't be an official repository (deVilliers, 2010).

The actual activities that take place on Facebook (e.g. discussions, answering student questions, submitting an assignment and providing feedback) are important factors of the experiment's success. They should be well-planned in advance. If the students do not see a direct benefit in using Facebook for class they will not do so, and if such benefit doesn't exist, there is no reason for using Facebook in the first place. It is not enough to do it just for the sake of trying something different. As Ractham & Firpo (2011) point out, "class activities i.e. lectures, homework, assignments & participation (in-class and virtual) must be well organized.

Students might be motivated by different 'edutainment', such as Quizzes, Games, and Mobile features to make the class more fun (Ractham & Firpo, 2011). Games and Quizzes are also suggested by Bunus (2010), and Al-Atabi & Younis (2010) suggest allowing the students the opportunity to submit their own versions of the quizzes to increase the level of participation and ownership.

Facebook could be used for the joint input of content on a document (deVilliers, 2010). This was not possible on FB until recently, but now students can use the "Docs" app for this purpose.

It was also suggested that there needs to be a much stronger connection between in-class and on-line environments, in order to strengthen the face-to-face engagement between peers (McCarthy, 2009). This could perhaps be done through some on-line activity being discussed in class, or the other way round.

The creation of sub-groups dealing with different aspects on Facebook like practicals, exams, conceptual issues was suggested for large classes with a great number of students by Rambe & Ng'ambi (2011).

A group on FB could allow the participation of students from different universities. McCarthy (2009) was planning collaboration with eight universities. Indeed, his class collaborated with a university from abroad and one from the same country in 2011 (Joshua McCarthy, personal email communication). It is just as easy to create a FB group with members from a particular class as it is to create one with students from all over the world. Professors from universities in different countries, who teach the same class could collaborate with each other and make a joint group between their classes. This could engage and motivate students, offering them an international dimension to learning, which they would hopefully find valuable.

If Facebook is used for class, a subsequent student survey might be a good idea to collect student reactions and opinions, and to provide useful information. A survey was made on most of the case studies examined, and in some instances where there wasn't one the authors agreed it would have been a good idea. A survey may be administered **before** using Facebook as well, in order to explore the needs of the specific students for the class it is planned for. According to the results of a survey and the findings of the instructor, the project may be adapted in the following year/semester (McCarthy, 2009).

The workload for the instructor should be manageable (Rambe & Ng'ambi, 2011). Instructor academic workload was too great in cases such as those described by Rambe & Ng'ambi (2011) and McCarthy (2009). What these two cases have in common is the largest number of students found in a group (165 and 100 respectively), and the fact that one instructor was expected to either answer academic queries (in the first case) or view and grade a submitted piece of student work (in the second one). The question of how

many students a teacher can support in an online learning environment was also addressed by Wiley & Edwards (2002).

5.3.3. Further research is needed to answer the following questions:

The educational benefit of using Facebook is one of the topics where further research is needed. This emerged in many case studies (Bunus, 2010; Estus, 2010; Schroeder & Greenbowe, 2009; Szwelnik, 2009). Schroeder & Greenbowe (2009) propose doing so by using various participation measures, such as tracking the frequency of postings on the FB group and correlating it to student exams performance.

Another research topic that was suggested is whether Facebook might rather distract students from educational work (Bunus, 2010).

Since a FB group proved successful as a communication and support tool among students on practicum who knew each other well, it was suggested to replicate its use with students on practicum who do not know each other in advance, and compare the results (English & Duncan-Howell, 2008).

Fouser (2010) suggested using Facebook and other SNSs in a variety of cultural and educational settings, while a cross-culture study was suggested by Murat Kayri (personal email communication). These would allow for comparison of the findings relative to the different cultures.

Last, it was suggested to compare the results of one group of students using FB as an LMS and another using a commercial LMS in a solely online setting (Wang et al., 2011).

5.4. Closing remarks

As it stands, the small number of cases that were examined here can only play an indicative role. A larger number of case studies would have been necessary to reach confident conclusions. Additional cases should be examined and compared in order to reach more valid results. What is more, the 19 case studies examined here, are

dissimilar in several ways. Care was taken to exclude cases from each particular analysis when its characteristics were not relevant or comparable. It is suggested that future research examines case studies with directly comparable characteristics. From the ones that were examined here, if we excluded the Page, the Profile, the student-initiated group and the two distance-Learning courses we would be left with 14 cases where most of the characteristics are relevant and comparable. However, not all the data is available, and therefore most of the correlations found between variables would be statistically insignificant.

An unexpected outcome of this research, and an indirect result of personal email communication with the authors of the examined case studies, was the creation of a **FB group, titled “Experimenting with Facebook as an Academic Tool”**. As the author emailed them, asking questions about their papers, it felt like these same scholars might find it interesting to *actually talk to each other* about their research. This could be very easy through a FB group, with which they were all very familiar! After an inquiry over their initial interest in such a group, the group was set up on January 8th, 2012.

The aim of the group is to facilitate communication between people who are interested in exploring the use of Facebook as a learning tool for University students and to provide a discussion forum for instructors or researchers who have already used (or are planning to use) Facebook in an academic setting. It is meant for researchers, who share this common interest, to share their experience, compare their findings, and possibly make suggestions to each other, or to others who are planning to do something similar.

Just like the research of these same scholars on student groups has shown, the success of a FB group depends on the participants! So, it remains to be seen if the group will eventually be useful to the members and what results or benefits and for whom might come out. By January 18th the group had 12 members. A screenshot of some Wall discussion and the group description (which can be considered as a mission statement) are provided in the appendix.

6. Exploring ways to use Facebook in an IT Project Management class

6.1. Introduction

In this part, as stated in the introductory chapter and in the chapter presenting the methodology, we will explore how Facebook could be used within a specific module, the IT project management module, for students of the MIS (Masters in Information Systems) course at the University of Macedonia, Greece. We will first describe the project management class, its students and the teaching and assessment methods. Then we will present the findings of interviews with the students of the Fall semester 2011-2012. These will help us understand how familiar the specific students are with Facebook, how they feel about using it for the particular class, if they have already used it for education and how, and whether they can suggest further ways of using it. A comparison with how the university LMS is used by the students, and to what extent, may be useful. After all the above is taken into consideration, and in combination with the findings of the 19 case studies discussed in the previous chapter, as well as the findings from the preceding chapters, we will attempt to make a suggestion for the use of Facebook in this class.

6.2. The project management module

“IT project management” is an elective module in the 2nd semester of a Masters in Information Systems (MIS) course at the University of Macedonia in Thessaloniki, Greece. The course consists of three semesters of taught modules and one semester during which the students undertake their MSc dissertation. Most of the students are highly IT literate.

The class meets weekly for 2 hrs 30 min. The class employs a problem-based learning approach, according to which students are expected to learn through their involvement in the management of a project. Students are split in groups of 4-6 members, and usually there are 2 groups, although this may vary. Each group must first decide on a specific project to take on, which it is expected to carry out throughout the entire

semester: from planning to design and then to the actual implementation and evaluation of the project. Group leadership rotates from student to student every week, so everyone gets to be a group leader at least twice. The leader has specific tasks to complete: Each week he/she makes a presentation of the new theory. Independent research is required for this. During the presentation, the rest of the students are expected to assess the leader(s) in four different ways: 1)provide comments on the material presented 2)provide comments on the nature of the presentation and 3)grade the presentation for content 4)grade the presentation for a general impression on a 1-10 scale. The instructor uses these comments for grading students' (the ones who assess the leader's presentation) participation in class, and also grades the group leader for the presentation. Then the instructor also presents the new theory, followed by students' questions and discussion. Last, each group's preceding week leader gives a presentation on their project's progress during that week. This presentation is also commented upon by the students and graded in the same fashion as the first one.

Assessment for the class is as follows: 50% of the grade comes from the final exam and 50% from the work on the group project throughout the semester. This consists of:

- 2 presentations (theory)
- 2 presentations (group project progress of the preceding week)
- Contribution to weekly reports
- Commenting on other students' presentations
- Personal report written at the end of the semester, including self-assessment
- Weekly reports
- Deliverables submitted during the project's implementation

Besides lectures given by the instructor, the students attend three 2.5-hour workshops, given by a teaching assistant. The aim of these workshops is to acquaint students with the software tools they will need to use for their assignment and to introduce them to some other tools, solely for information purposes. After the tools are presented, students are given a small scenario to practice with the use of each. Students also need to use the official, university web-based LMS (Compus) for downloading course material and assignments, for submitting assignments, and for asynchronous communication with the instructor or/and each other. They use "Microsoft Project" (project management software) for their assignments. Another tool, "A-Tutor", a free LMS, was used for

grading the group leaders' weekly presentations during the Fall 2010-2011 semester. "A-Tutor" was meant to support active collaboration between group members during the tasks' execution of each project management phase. Its use aimed at engaging students into building knowledge while learning, according to constructivist theory (Maria Zotou, teaching assistant, private communication). This tool wasn't employed again, because of various problems related to it. The fact that students needed to learn to use multiple new software tools for this class may have been a cause of academic overload with class requirements (Zotou, 2011). Therefore it was decided to make things simpler and in the following year students used LAMS, where they simply followed a link that led them to the presentation assessment questions (Maria Zotou, private communication). From all the above information, the author of this current MSc dissertation suggests that this class might benefit from a tool that students are already familiar with, such as Facebook, so that they can concentrate on the content rather than the tools. In this chapter we will explore how Facebook has already been used by the specific students, and how it might be used to help them with the specific course requirements.

6.3. Student Interview Results

Brief interview sessions with all the students of the project management class (8 in total) were held on January 9th 2012. The questions asked were related to internet and FB use, and particularly on whether the students used FB for the class and how. Their opinion about using FB for education was also asked. Here are the findings:

6.3.1. Demographics

The average age of class students was **25.125** (ranging from 23 to 27) and they were evenly split between the sexes: 4 male and 4 female. Two of the male students work full-time (40hrs/week), and one of the female students works part-time (20hrs/week).

6.3.2. Internet access and use

The average student started using the internet in the year 2001, i.e. has around 10 years of experience. All the students have internet access at home, while the 3 students who

work also have internet access at their workplace. Six out of eight students have internet access on their mobile phone. The two who do not have mobile access are students who do not work. Those who have internet access on their mobile phone use it on average on 14 days/month. The students who work full-time use it every day, the student who works part-time uses it for 10 days/month, while the others use it approximately once per week. Although this could be purely coincidental, the reasons may be financial (the ones who work can afford the internet charges on their mobile) or related to increased time & space constraints of those who work longer. Students spend an average of **4.25 hours** on the internet every day. They were asked to specify three sites they visit. The results were the following:

Table 16: Popular sites among project management students

Internet sites that students visit	Number of cases
Email services (hotmail, yahoo, gmail)	7
Portals (in.gr, Google)	5
News & sports sites	4
Facebook	4
University sites (uom, Compus)	3
Music video (YouTube)	2

Although Facebook was mentioned slightly more frequently than the university websites, the two were very close. Almost all students mentioned email service sites.

6.3.3. Use of the University LMS

The project management students visit the university LMS (Compus) on average **4.75 times/week**, while they believe that their classmates do so 4 times/week (i.e. they think that others visit it less often than they actually do). They all find Compus useful. When asked what they use it for, their responses were:

Table 17: What students do on the university LMS

Activity	Number of cases
Download material (lecture notes)	7
Check for new assignments/upload assignments	6
Check for announcements	2

Check for deadlines	1
Reading course material	1
Communication with professors	1

The fact that students use the LMS mainly for downloading course material and not for discussions is in agreement with findings of Margaryan & Littlejohn (2008), Parslow et al. (2008) and Martini & Cinque (2011). It should be noted that the LMS is not used frequently for checking for announcements and deadlines, or for communication with professors. This may indicate that a more immediate, online, real-time tool as Facebook could provide a benefit to these students and fill the existing gap. One of the students said that professors do not use Compus frequently, and for that reason students do not see the point of using it for communication with them.

6.3.4. Email

Students check their university email **5 times per week**, while they check their other, personal email, **every day**. Three out of eight students have forwarded the university mail to their personal email, so they don't need to check it separately.

6.3.5. Facebook

Seven students are registered on FB, which is a rate of **87.5%**, consistent with the findings of student surveys mentioned in chapter 4. One student refuses to register to FB because he thinks it would be a distraction from his academic duties, but uses LinkedIn instead. Two students are also registered on Twitter, but they don't log on to it often. Among the seven students who are registered on FB, six log in **daily** and spend an average of **1hour and 6 minutes** there, while one member logs in twice per week and only spends 5 minutes on FB (all students' average: 56min/day). All the interviewees believe that their classmates log in to FB every day, and that they spend more than 2 hours daily on the site, which is actually much higher than the self-reported time. One student even said that his classmates are on Facebook all day!

When asked about their preferred method of communication with their classmates, the 1st choice was telephone (3/7), 2nd was email (2/7) and Skype (2/7), while FB was last (1/7). The methods that were mentioned though, regardless of priority, were:

Table 18: Media used for communication with classmates

Media used for communication with classmates	Number of cases
Facebook	6
Telephone	5
Email	4
Skype	4

It is noted that although Facebook was not the primary means of communication with their classmates, it was still the one mentioned by most of the students. The project management students don't seem to have replaced email with Facebook. Roblyer et al. (2010) also found that students check email and Facebook with equal frequency, in contrast to the 2007 Pew Report they refer to, which had found a decrease in the use of email (though among teenagers).

On average, FB members opened their FB accounts towards the end of 2007, half of them remain logged in while they do other things on the internet, and their average number of FB Friends is 352. Their main reason for using Facebook is communication with Friends (7/7 FB users) and communication with classmates (6/7 FB users). The one student who doesn't use FB for communication with classmates is the infrequent FB user. Two students specifically mentioned communication with Friends who are far away and one mentioned old friends. So FB supports communication with real-life friends, who cannot meet in person easily. Facebook is used for email by 4/7 students (57%), for sharing links by 7/7 (100%) and for documents by 1/7 (14%).

6.3.6. Facebook and Education

Of the students who use FB, 87% (6/7) also use it for education, to discuss class-related topics, approximately once a week, although the frequency is higher near exams or assignment deadlines. The students participated in a group for the whole MIS course that was created during the 1st semester of their studies. They used that group to ask questions to each other, to inform others in case one happened to be the first to find out about an announcement, and to share resources such as articles and links to websites. One stressed that "someone from class will always be on Facebook" as a benefit.

In addition to this group, and specifically for the project management class, four students (a group working on a joint assignment) set up their own FB group. They used it throughout the semester for communication with each other, but not as a tool for uploading or editing documents together. For that purpose, they used another tool: Dropbox¹⁴. They found Dropbox more suitable for sharing files and said that it has better structure for file exchange and common use. What's more, they said that FB docs are not "MS Word" (which they mostly use for writing documents) and that if they had used FB docs they would have needed to change file formats every time. They used FB because it provided quick communication: to inform each other about the progress of their work, to ask each other to 'go check Dropbox' for a new document they had uploaded, to ask each other's opinion, make comments, and discuss their assignment in general.

The other group (also consisting of four members working on a joint assignment) didn't use Facebook for the project management class. The reason was that one member wasn't registered in FB and refused to do so, when asked by others. This makes it obvious that (unless Facebook becomes compulsory in the class syllabus) registering on FB is a personal choice. If one student doesn't want to use it, then the others, as a group, cannot use it either. This is an important point to consider when redesigning the course.

6.3.7. Student opinion on the academic use of Facebook

Among the students with a FB account, 6/7 believe that FB could be used in this course while 50% of the students also believe it could be used by the university. Furthermore, 6/7 would like to use a FB group for this class, while 1/7 is undecided. When asked whether such a group should be **with** or **without** the participation of the **instructor**, all students gave it some thought before answering. They acknowledged that the professor's presence would be beneficial if he could use the group page to answer their questions, make announcements, provide links to interesting articles, use it instead of Compus for answering student questions, use it instead of 'office hours' (e.g. with the chat facility), and replace personal email for answering students' questions, so that the whole class could benefit from reading the answer on the group wall. One student suggested that the instructor could transfer some of the existing class tools on FB.

¹⁴ www.dropbox.com

Although the students see all these benefits in sharing a FB group with the professor, they are reluctant to be in the same group, because they also want to write things there that they don't feel comfortable with a teacher to see, such as pure fun stuff & stupid comments, or questions like "what do you think will be on the exams?". Therefore, the majority of the students said that they would benefit from the instructor's presence, but on a **separate** FB group. They would like to have one group with the instructor's participation and another for communication with their group mates alone. As mentioned earlier, half of the students used two FB groups already: One for the whole MIS course (30 students approximately) and one for their project management assignment group (4 students).

When asked if they might prefer FB over Compus (the official university LMS) the majority opted for Compus. The reasons stated for this were: privacy (student 1), preference for consistent use of one system for all classes (student 3), using FB would be weird (student 4), FB is good only for communication (student 6) and Compus is more suited for learning (student 8).

6.3.8. Concluding remarks

It must be noted that the answers provided by the project management students are very much alike those found within previous, extensive student surveys on the academic (and not only) use of Facebook. The author was amazed that students repeated exactly the same concerns and thoughts reported in the relevant bibliography.

6.4. Suggestion for the use of FB in the Project Management class

It is a necessary condition for everything that will be suggested in the following section, that the course designer consults with university authorities and inquires if permission is required for using Facebook for class. If it is, it should be granted before any class-related activity is initiated on Facebook. Different universities might have different policies on Facebook, or they may have none at all.

Another option, regardless and independent of any FB class activity, is to build a Facebook application that notifies students on their FB account whenever there is something new on their Compus (the university LMS) account. This would be useful for all classes. It would save students time from needlessly checking Compus, and ensure that they do not miss any urgent announcements. This would be a great way of capturing the benefits of both Facebook (instant communication) and Compus (secure, University-approved system for all classes), by bringing the two together. Another feature of such an application could also enable students to access their Compus account directly from within their Facebook account, e.g. an application called 'MyCompus' that only students of the University of Macedonia could have access to. Commercial applications that provide CMS options that synchronise with Facebook are mentioned in Loving & Ochoa (2010).

As we have noted earlier, the students of the project management class are **IT literate**, their ages range from **23-27** and they are **experienced internet users**. Furthermore, the class is an **elective**. Based on the findings from chapter 5 (case studies) and the student interviews, we conclude that Facebook **can** be used for this class, and that using it may be both **compulsory and graded** and **optional and non-graded**, in a way that will be explained further on.

Facebook can be used **in parallel with the university LMS** (Compus). Most of the research has indicated that Facebook is insufficient as a LMS, at least with its existing tools. It was also observed that most of the Facebook initiatives that carried on for more than a semester took place in parallel to the use of a university LMS. University permission may be required for uploading lecture notes on the FB class group. Data protection issues and relevant university regulations must be considered. Compus is probably more suitable for graded activities. Thus, Compus could be used by the students for downloading course material and checking for new assignments and uploading assignments (official tool), while Facebook could be used as an additional tool, for improved communication and other activities.

Some case studies pointed out that Facebook has limitations compared to a LMS (Wang et al., 2011; Loving & Ochoa, 2010). For example, Loving & Ochoa, 2010 argue that it could not compete in regard to grading, assessment uploading and online testing

because of the applications that are needed for these purposes, and which do not exist on Facebook. However, there is also a data security concern, i.e. guaranteeing that material that is posted will not be revealed to third parties. This is important, especially for graded homework, so perhaps homework/assignments should only be uploaded on a university-owned system, where the university has control of the data.

The project management students believe that their classmates use **Facebook** more **often** than the university **LMS**. This was also reported in research papers (e.g. Szwelnic, 2008), and it is a strong argument for Facebook as a tool for communication among students. FB is favoured over Compus as a communication tool, because if students believe that others (classmates or instructors) will not be using a certain communication tool, they are not likely to use it for communicating with them (Margaryan & Littlejohn, 2008). Furthermore, some university instructors' infrequent and irregular use of Compus for replying to student questions doesn't promote its use by students. Inconsistent lecturer use of WebCT was also reported to perplex students (Margaryan & Littlejohn, 2008). If on most times they log into Compus there is nothing there, students will be discouraged from doing so frequently. Schroeder & Greenbowe (2008) claim that receiving minimal feedback must have been a reason why their students stopped asking questions on WebCT a month after the course had began.

In most of the case studies examined in the previous chapter instructors played an **active** role in the Facebook initiative. Where instructors kept some distance, students often wished for a more active presence. It was also noted that students participated in a discussion after a prompt by the instructor. The lecturer's participation is considered a key factor for encouraging student participation (Fernández & Gil-Rodríguez, 2011). Therefore it is suggested that the instructor actively participates in a FB group for the whole class. The instructor's commitment to using the Facebook group and regularly answering the students' questions is considered an important factor of success.

Facebook group activities should be designed in a way that motivates students and at the same time provides an academic benefit they will be able to appreciate. Ideally, it should promote learning in an enjoyable way and help students collaborate for their joint assignments.

The fact that Facebook is used for class should be stated in the course **syllabus**, so that students who may not wish to use Facebook can choose another module. The syllabus should also explain **how** Facebook will be used and provide some guidelines about appropriate behaviour and what is expected of students on the FB group.

In particular, the creation of two types of groups is proposed: **One for the entire class**, with the participation of the instructor and the students, and possibly the laboratory instructor, and **separate groups for each assignment group** with only the participation of the (4-6) students who will be working on a joint assignment throughout the semester. Both groups should be either closed or secret to safeguard students' privacy.

Table 19: Facebook groups proposed for the project management class

	Class group	Assignment group (s)
Participants:	<ul style="list-style-type: none"> • project management students (all) • Instructor • Teaching assistant 	<ul style="list-style-type: none"> • Students (4-6) working on a joint assignment
Privacy:	Closed/secret	Closed/secret
Type:	Compulsory & graded	Optional & non-graded
Activities:	<ul style="list-style-type: none"> • Asking questions to each other and to the instructor on the Wall (asynchronous) or the 'chat' facility (synchronous) • Announcements by the instructor on the Wall • 'Events' for every class/presentation, with relevant links and the possibility for other students to write comments. • 'Questions' for voting on administrative class matters • 'Quizzes' for exam practice 	<ul style="list-style-type: none"> • Discussing the joint assignment on the Wall or private messages (asynchronous) or using the 'chat' facility (synchronous) • Editing documents (MSword, Excel, ppt) together, using the 'Docs' application • 'Questions' for voting when a decision needs to be made
Applications to be used:	Wall, Events, Chat, Quizzes, Questions, Links, Photos	Wall, Chat, Questions, Docs
Graded activity:	Comments on other students' presentations in the 'Events', presentations, independent research	Non-graded

The class FB group will be created by the instructor and could be named, for instance, “**Project Management MIS UOM 2012-2013**” with the years changing every semester. As indicated by previous research, the instructor doesn’t need to be ‘**Friends**’ with the students to participate in this group. Therefore the **privacy concerns are partly resolved**, as the instructor won’t be able to see the students’ personal profiles, pictures, videos or anything else they post. Students will not worry that the instructor might form a negative opinion on them, as he will only be able to see what they post on the class group page.

The instructor (or/and the teaching assistant) will maintain group membership, making sure that only students are in the group. All the participants should be advised to join using their real Facebook profiles. The group should be either closed or secret (private) as suggested in the bibliography. This serves to protect the privacy of the students (e.g. their comments on the group will not be seen by their other Friends) and also protect the group from spam. Spam has been observed in other cases of education-related groups on Facebook, such as a group called “Using Facebook in Education” intended for educators to discuss the educational use of Facebook, but receiving wall postings advertising “Russian women need to be your wife” and “real naughty women dating site” or similar (<http://www.facebook.com/group.php?gid=25326983963>).

A **seminar** on FB use and **privacy** options should be given at the beginning of the course. This could be done during the first laboratory lecture (all the lectures are held in a computer lab) with the teaching assistant, after the students have formed their assignment groups. During this lecture, the teaching assistant will explain in detail how the class FB group can be used, show students the group page on FB, give them the link for requesting to join, accept their requests, etc. At the same time, the students can also set up their own assignment groups. The teaching assistant will describe how they can use them, suggest privacy settings for them, and explain how ‘Docs’ (to be described later) work and how students can use them to share and co-edit their documents, etc.

All the participants should choose to receive **notifications** whenever there is any activity on both FB groups. Thus, they will be notified instantly on their FB homepage, and won’t need to check the group pages for new posts. If they are on FB already

(which is very likely, from what the interviews have shown) they will be notified immediately when another member posts.

The **class FB group Wall** can be used for communication with the entire class, both for academic and practical issues. During the interviews the project management students indicated that they could ask academic questions on the Wall of a FB group, and would like the instructor to answer them there. These questions could be related to the theory, e.g. things that the students didn't fully understand during the lecture (like in the case studies described by Ractham & Firpo, 2011 and Rambe & Ng'ambi, 2011). All the students can benefit by reading the answers. The laboratory instructor could also answer students' questions and so could other students, and there can be some discussion. All class students would benefit from either merely 'attending' such a conversation, or by participating, sharing their opinion or providing links and other resources. The possibilities are endless, and they depend on the participants' eagerness. As Bae (2010) points out "Class Facebook pages resemble a company R&D centre that is open to the interested, involved and qualified customers". The instructor must encourage students to express their opinions freely, and to provide arguments for what they say, which should promote academic debate. This way FB will supplement and extend the classroom. The educational benefit for students from the discussion of subject-related material can be significant. Higher-order thinking occurs in online discussions (Meyer, 2003), and since this class approaches learning according to the principles of the constructive theory, this method should definitely be experimented with.

It has been observed that students' contributions were frequently motivated by a prior contribution from the lecturer (Fernández & Gil-Rodríguez, 2011). Instructors can use a FB group to actually **initiate discussion**, i.e. ask a question and let the students give their opinions. This requires more time, and it is up to the instructor.

Students may ask questions on practical as well as academic issues, e.g. questions about the assignment, such as deadlines, clarification of the requirements, details or advice on technical difficulties with the software. Group leaders preparing their presentation of the following week's theory could ask for sources of information, clarification on findings they may be unsure of, advice for their up-coming presentation, etc.

The instructor will also make **announcements** on the group wall, so that every class member can see it. As indicated during the interviews, the students who have a FB account log in the site every day (except for one who logs in twice a week), so they would be sure to receive the information on time.

It would be possible for the instructor/teaching assistant to build some **Quizzes** on Facebook, using already existing applications for Quizzes. Students may take this as a fun way of learning, and it could also help them practice for their exams.

Another tool that could be used is '**Questions**'. This is a voting tool that can be used by the class when all students need to make a decision based on the preferences of the majority. For instance, to schedule a lab session or a missed class, the instructor may ask students when it suits them and provide 1-2 alternatives, so the date & time with the greatest number of votes will be selected. This procedure can make things much faster than having to ask in the next class. Students may also add comments underneath the question, or add their own options. This could also be used by the students, whenever they need to make a decision based on the majority's opinion, either on the class group or on their assignment groups.

The instructor can also provide subject-related **links** to interesting articles, software, educational videos etc., either on the Wall or preferably inside 'Events' (structured by topic, one for every lecture) and so could the students, as will be described below.

It is possible for the **assessment of other students' presentations** (until now on A-tutor or LAMS) to be transferred to Facebook. This requires building a specific FB application that does exactly the same thing. Alternatively, existing FB tools could be used, albeit with some modifications: Every student presentation or every class (including 4 presentations) could take the form of an '**Event**'. Students will be able to write their comments on the presentations in the space provided there. The main difference with this method is that the comments will be visible by all group members. This has advantages and disadvantages: Writing something that will be read by other students, i.e. making it public, can act as a motivating factor (Downes, 2007; McLaughlin & Lee, 2007). Public exposure also leads to more independent research (deVilliers, 2010). On the other hand, students might hesitate to write something

negative about the presentation of their fellow-student (as evidenced in White, 2009) knowing that the student in question will read it. A photo of the person presenting could be taken in class and posted as an event picture, if the student wishes, or alternatively, a photo of something relevant to the topic of the presentation (as in the case study described by Wang et al., 2011). The student making the presentation will have posted a link to the presentation document (ppt) in the 'Event' so that it can be viewed from there during the presentation in class. Events can host Links, Photos & Videos as well as comments by participants. Links to relevant websites, research papers, etc. could also be added during the week prior to the presentation, either by the instructor or by the students preparing their presentations. Other students could also read this material and thus be somewhat informed before class and better equipped to participate in the discussion or comment on the presentation. This practice can result to the creation of a repository of relevant material and student-generated data (as found by Fouser, 2010). Events can also be an automatic way to take class attendance (as it was done for tutorials in the case study by Wang et al., 2011).

The **assignment groups** will consist of the students working on a joint assignment for the whole semester. They may use the group for discussions instead of meeting in person, and in ways similar to those described for the class group, except that no activity on this group will be graded. Students will be free to use it any way they like, and its sole purpose will be to assist them with collaboration. A useful tool for them, available in Facebook is the '**Docs**' application, described below.

The project management students indicated that documents on Facebook are not 'MS Word' and that sharing files on FB is more functional for 1-1 exchange, rather than sharing with a group. This needs further inquiry. Actually, there is a 'Docs' application where the file formats available are **MS Word, Excel and PowerPoint**. The 'Docs' application is available on Facebook since April 21, 2010: "Built on Microsoft Office 2010, the Docs app enables Facebook users for the first time to create and share Microsoft Office documents directly with their Facebook friends, using the Office tools they already know" (Docs Com blog, 21-4-2010 <http://blog.docs.com/>). Students can write and co-edit documents using it. Perhaps the project management students were not aware of this option, but if they were, it may not be as good as it claims. This should be experimented with, to determine the application's functionality. Group notifications will

ensure that students get notified when another member posts a link to a document or anything else on the group page. The students noted that specifying access rights to documents on Facebook is not easy, so, this also should be looked into. When one creates a document using 'Docs', they can simply choose who to share it with (some of the options are: "All my friends", "Individual friends", "only me" and "group") and who can edit it (same options) (<http://docs.com/BQ60>). When a document is open, the right part of the screen shows details, such as who can view and who can edit it. Members can navigate between the application and their FB profile. Students who are in the same assignment group can use it to co-edit their documents. They could also use it for writing common presentations, if two students need to make a joint presentation at some point.

The above-mentioned application allows Facebook users to use Word, Excel and PowerPoint. If **MS Project** was also added to this application, it would be perfect for the project management students, because then they would only need to use Facebook instead of the separate tools they use now: Facebook, A-Tutor (or LAMS), MS Project and Dropbox.

Students in the same **assignment group** can further use it to:

- Discuss issues related to the assignment.
- Arrange meetings, asking each other when it suits everyone best through the Questions app or simply on the Wall.
- Vote on a topic they cannot otherwise reach consensus, using the Questions app.
- Keep up with the progress of their work. This could be done using a calendar application, to remind students of deadlines, e.g. when each phase of their project needs to be completed. A specific application could be developed for this, like a checklist sending a reminder to the students who are expected to perform a specific task and where students can note down what they have done for others to see.

Another possibility that resulted from the case studies of the previous chapter is collaboration with other project management classes that are doing something similar on Facebook. Students could have discussions about the class material and perhaps work on a joint project. This would require some coordination between the course

instructors, but it could enhance the students learning experience and their degree of involvement. The instructor could look for colleagues in other counties who teach similar classes and inquire whether there is interest on their and their students' behalf (for example, there is a page for a class called "TDDD29IT-project management" for project management students of Linköping University).

At the end of the semester there should be a **survey**, inquiring all participants' opinion of their experience with using Facebook for class, asking for improvement suggestions and for additional tools they might consider useful. These suggestions should be taken into consideration for making improvements to the Facebook group in the following year. This evaluation process should be repeated every year, to ensure constant improvement and keeping up with student needs, similar to a TQM approach.

7. Conclusions and future work

Initially, this MSc dissertation examined the relevant literature, and collected information about learning theories, the debate about the Net Generation, Web 2.0 and Social Network Sites, as well how these can support e-Learning. Facebook, the most popular SNS was examined in more detail, especially in regard with its use by university students and academics. On that basis, we analysed 19 case studies where Facebook was used for aiding students' learning and proceeded to make a proposal for the employment of Facebook in a particular module.

The main **conclusions** are summed up to the following:

Facebook **can** be employed as an educational tool at university level education, and it has significant **benefits** over a university LMS. However, with its current tools and applications, it cannot replace the LMS, but rather act as a **supplement**. Facebook and a LMS can complement each other, each having different strengths, thereby enabling students to enjoy the benefits of both. An alternative is to **'link'** students' LMS accounts to their Facebook accounts. Among other functions it can serve as a discussion and collaboration tool. Facebook can be **optional** in compulsory modules (so as not to disadvantage students who are not FB members) but can also be **compulsory** in elective modules. The successful use of Facebook for class depends to a large extent on the personal commitment of the **instructor**, and this may require quite some time investment, depended on the way in which Facebook is used. In any case, when a Facebook **group** (which is the most popular method for academic purposes) is set up, the activities that will be undertaken on it should be **planned** in advance, and the educational aims for employing Facebook should be clear. An important consideration is whether there are any **institutional restrictions** regarding the use of SNSs by instructors and students. Because SNS are third parties to the university, it may not be obligatory for students to provide **personal data** to a third party as a course requirement. Also, there may be **legal** issues involved, e.g. the university may be held liable for content that is posted on a class page. These **risks** should be examined carefully before any FB academic activity is taken.

Limitations and weaknesses

It is probably impossible for any study to take into consideration all the relevant literature, even if new studies weren't being published. For instance, some papers were not available for free download, so they were necessarily excluded from this analysis. Some important papers may simply have been missed. As pointed out earlier, the number of case studies (19) examined in chapter 5 is not sufficient for drawing definite conclusions, yet the findings can be taken into consideration when planning a future initiative. They allowed some initial observations, helped to pinpoint areas of interest, and provided some indications about how Facebook can be employed and what is to be expected. These case studies served to open up new, more specific questions regarding the use of SNSs, and Facebook in particular, in academic-level education.

Suggestions for further relevant research

The discussion of the findings left some unanswered questions and brought up areas for further research. The following came from the examination of the case studies:

- More case studies should be collected, with as similar features as possible (and thereby directly comparable).
- Define criteria upon which to rate the success of a FB group for educational reasons (e.g. academic results, participants' opinion, participation rate, repetition, or other)
- Examine the common characteristics of successful and 'not so successful' cases.
- Identify factors of success / failure.
- Identify correlated variables, especially with regard to success criteria (e.g. is there a correlation between class size and success?).
- Build a model for rating the success of employing FB (or other SNS) for academic learning.
- Can Facebook be used in fields where it hasn't been used so far (e.g. law, history, literature, etc.)? Is there a reason why it hasn't been used?
- Build a model of 'best practice' for employing Facebook for a class, according to its unique characteristics, e.g. class size, level of studies, nature of the module, age of the students, instructor time available, etc.
- Is the students' level (what academic year they're in) related to successful academic use? Is it related to student activity on a FB group and how?

- Are certain types of activities better suited for different levels?
- How is class size related to success? Is Facebook more beneficial in smaller/larger classes? What are the different requirements (if any) related to FB group size? Is there a different strategy needed according to group size?
- Does previous familiarity with FB group members lead to better results? Does Facebook help students get to know each other better? Does it work both ways, and under what conditions?
- What are the different benefits (if any) from a FB group if the instructor didn't devote much time & effort to it, or if there was no instructor participation whatsoever? Compare two such groups.
- Is there indeed a drop in new case studies of academic FB use? If there is, what are the reasons?
- Was it coincidental that 5/6 cases where a FB group was re-employed in the following year were in the USA & Australia, or are there other factors that played a role in this?
- What is the role of the parallel existence of an LMS? Is it related with the success of Facebook use? If Facebook is augmented by additional applications, can it possibly eliminate the need for a LMS?
- What could be the long-term effects of SNSs in the relationship among students, between students and academics, between students and the academic institution?

Specific suggestions for the use of Facebook in the project management class were made in chapter 6. However, **developing academic applications for Facebook** is an area where further research is needed. Specifically, the following is suggested:

- Design and build educational applications based on the needs of the module.
- Develop an application on Facebook that sends students a notification when there is any activity on Compus (for all the university's students).
- Build applications that can be used by any academic institution/class. For example, besides the options of a profile, a page and a group, there could be a '**class**', with designated roles for 'instructor' and 'students' and educational activities (applications) that can be added to the 'class'.

- As suggested in chapter 6: use Facebook for the project management class and observe how it is used by the students, make a survey / interviews at the end and ask for their opinion and for improvements suggestions. In the subsequent year make changes according to the participants' comments. Repeat.
- Another possibility, for the entire MIS course, would be to create a new module, teaching students how to build a Facebook application.
- Build educational Facebook applications that any module/course/university could use. If possible, build these applications in a way that they are transferable to other SNS.

Humans are social beings, and social network sites are probably here to stay, due to both the affordances and the limitations of the modern way of life. Perhaps they will be somehow different and have more advanced features in the future. Just like with any other tool, technology, and therefore Facebook or any other SNS, can be used for many different purposes, including education, that are only limited by our imagination.

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Appendix A: Case Studies Papers

Here we provide the tables that were constructed from the analysis of the 19 case studies, the results of which were presented in chapter 5.

A.1 Case Studies

(1) Al-Atabi, M., & Younis, O. (2010). Use of Facebook to Support Module Delivery for Undergraduate Engineering Programmes. Proceedings of the 2010 AaeE Conference, Sydney	
Tool	Facebook group, closed
Class name	“Thermodynamics and Heat Transfer Module”
Faculty	[Engineering]
University	Taylor’s University, Selangor, Malaysia
Level	1 st year (2 nd semester) mechanical & chemical engineering students
Elective/compulsory class	compulsory
Time/duration	1 semester (14 weeks), June 2010
FB use Optional/compulsory	voluntary
Graded	no
Number of class students	66 (51 male + 15 female)
Number of participants	60
Percentage	60% at beginning, 90% at end of the course
Regular participation	
Age (mean)	19.28 (18 to 23)
Previous student XP with FB	95% already used FB regularly
Other e-Learning tools used in parallel	Blackboard, where all official course material was available (lesson plan, assessment details, lecture notes and tutorial sheets).
Student survey	Yes, questionnaire at the end of the course
Students’ previous familiarity with each other	yes
FB privacy advice given to students	Very simple instructions
In-class / on-line	combination of lectures, tutorial classes and lab sessions
Instructor made a “teacher-only” profile	Yes
Students made new profiles	No
Comments irrelevant to course	Yes a little, but not annoying, it was allowed, to have some fun too
Instructor’s role & presence	Was online at least 1 hour/day
Reasons to use FB	To exploit the growing trend of using online social networks by utilising FB To provide an additional platform for students learning & interaction To support students’ learning. This module is considered to be difficult and it is normally associated with lack of students’ motivation to study and high failure rates
How FB was used	addressing issues that relate to the basic theory that students may feel embarrassed to enquire about during the lecture time
What FB tools were used	Wall (majority of discussions), Discussion Forum (very few), Quizzes
participants	Instructor, students, some senior students who didn’t take the course but supported the other students
Postings / participant	
Problems faced/possible issues to consider	No problems
Comparison with other e-	

Learning tool	
Results, Findings and benefits that were observed	<p>6 quizzes throughout the semester (immediate feedback)</p> <p>The number of students who joined the FB group and attempted the online quizzes grew steadily throughout the semester (60% had joined at the time of the 1st quiz and 90% at the time of the last quiz) and the average performance in the quizzes improved. The increased participation was attributed to word of mouth among the students.</p> <p>The majority of students found the use of FB to support their learning an engaging and useful experience.</p> <p>The majority of the students thought that using FB for learning was a good idea and attempting the quizzes online was fun.</p> <p>75% of the respondents recommended the use of FB for other modules.</p> <p>62% of the students thought that the use of FB for learning helped them know their lecturer better.</p>
Suggestions	allow the students the opportunity to submit their own versions of the quizzes to increase the level of participation and ownership
Was it repeated?	yes
other	

(2) Bae, H. (2010). The Wikest Link: Intentionally informal use of SNS for post class discussion. ELIA, 11th Biennial, Emerging Social Media in New Educational Narrative, Nante, France, October 26-30	
Tool	Facebook page for a class, invitation only [=Group, closed or secret]
Class name	
Faculty	Different disciplines (arts & media)
University	Columbia College, Chicago, USA
Level	
Elective/compulsory class	
Time/duration	
FB use Optional/compulsory	
Graded	
Number of class students	15-25
Number of participants	
Percentage	
Regular participation	
Age (mean)	
Previous student XP with FB	students were already very active users of several SNS and networked through the college's internal networking site
Other e-Learning tools used in parallel	Moodle
Student survey	
Students' previous familiarity with each other	
FB privacy advice given to students	
In-class / on-line	
Instructor made a "teacher-only" profile	
Students made new profiles	
Comments irrelevant to course	
Instructor's role & presence	Administrator function, only for maintaining the membership the page. The instructor participates, does not lead.
Reasons for using FB	To explore the latent function of Facebook as a learning tool rather than for its utilitarian functions (e.g. submission of assignments, grading, sharing supplemental materials) To see if having an exclusive (classmates only) FB page can help students understand the material To find out how less structured interactions within a closed Facebook page influence/ facilitate learning For students' social interaction
How FB was used	Students were encouraged to post any topics that are relevant (if it's personal, they have to explain how the topic is related to class material) For students to ask questions To discuss topics left over from class discussion
What FB tools were used	Wall
Participants	Administrator (instructor) & students
postings/participant	40 discussion topics (each topic 1-20 postings)
Problems faced/possible issues to consider	The challenge for the instructors is quite similar to that of the conventional managers of large corporations: let go of control
Comparison with other e-Learning tool	Students found the process of logging in to Moodle system a "hassle" Moodle was used for instructional purposes whereas the Facebook page was designated as pure social interaction among classmates.
Results, Findings and benefits that were observed	enhanced participation While the effect of social interaction in the class Facebook page is observable in the in-class discussion and team collaboration, there was no visible collaboration outside of assigned class project Class Facebook pages resemble a company R&D centre that is open to the interested, involved, and qualified consumers
Suggestions	The contacts among the members of the class Facebook page must not

	<p>be staged or orchestrated. The sense of belonging and community building is an organic outcome rather than a goal.</p> <p>The key to success of these sites is the user-generated content with little interference from authority</p>
Was it repeated?	
Other	

(3) Bunus, P., (2010). The Social Network Classroom. In Proceedings of the 1st International Conference on Technology Enhanced Learning, Reforming Education and Quality of Teaching (TECH-EDUCATION 2010), Athens, Greece, 19-21 May 2010	
Tool	FB Page (open, so everyone can join) TDDDB84 Design Patterns
Class name	Design Patterns (Computer Science)
Faculty	Department of Computer and Information Science
University	Linköping University, Sweden
Level	80% in 3 rd or 4 th year and 20% graduate students from an International Masters Programme
Elective/compulsory class	Compulsory for Computer studies students, elective for others
Time/duration	One semester (3 months) in 2009+
FB use Optional/compulsory	Voluntary
Graded	no
Number of class students	170-180
Number of participants	Approx. 120 join
Percentage	71%
Regular participation	Most students have a very passive participation. They join but don't interact often.
Age (mean)	Various ages
Previous student XP with FB	[probably for all the participants, generally FB is adopted by 95% in Sweden]
Other e-Learning tools used in parallel	Course Web page (for lecture notes) but no discussion board. Facebook, Twitter, Blogger YouTube and iTunes were also used. The researchers proposed the use and integration of social networking sites, podcasting technologies and applications developed for mobile devices into a collaborative online educational platform called 'eSocialClassroom'
Student survey	3 interviews
Students' previous familiarity with each other	Usually no. Students' interaction was limited to the breaks between lectures. They mostly come from different study programmes.
FB privacy advice given to students	They are already very familiar with it (computer science students). The students were not concerned at all about privacy.
In-class / on-line	It was used to complement traditional classroom education
Instructor made a "teacher-only" profile	No
Students made new profiles	No
Comments irrelevant to course	No. The discussions were very professional.
Instructor's role & presence	Added material such as educational videos. Sometimes took a more active role, e.g. needed to intervene when students were too "shy" to communicate.
Reasons to use FB	To make the learning experience more engaging. To encourage collaborative work & knowledge sharing among students. To provide an interactive platform for the educators to reach students and deliver lecture material in a totally new way. To leverage and use the new online technologies that the students are already using in their every day work or in their free time for educational purposes. To make the learning experience of the students more effective and engaging. To complement traditional classroom education. Traditional classroom education does not fulfil the expectation of students anymore. To provide students with access to additional course material in a new and innovative way and get to know each other better and interact during the course.
How FB was used	For delivering educational material to students on mobile platforms like iPods and 3rd generation mobile phones. Facebook was used for distributing course announcements, course related links, interactive slide shows and quizzes. The lecturer posted educational videos relevant to class material (e.g.

	<p>after a lecture about it).</p> <p>The discussion forum was used by students for communication, e.g. students could ask for help about difficulties they were having regarding assignments.</p>
FB tools that were used	<p>Wall, discussions: Students could start a discussion thread.</p> <p>Short (e.g. 15 questions) Quizzes (made by the teacher) relevant to class material were posted on FB and students could compare their scores.</p> <p>This also helps to practice for exams because the questions are similar.</p>
Participants	<p>Instructor, students, former students + other external members with interest in computer science have also joined the group together with other academic people interested in educational aspects of the social networks.</p>
postings/participant	-
Problems faced/possible issues to consider	No problems.
Comparison with other e-Learning tool	<p>With a course webpage, although it's easier for the lecturer, students need to check regularly for updates and new material. Yet, this is available only on computers and can't be seen from a mobile device.</p> <p>This material is not interactive.</p>
Results, Findings and benefits that were observed	<p>342 "Likes" on the Page (December 16th, 2011).</p> <p>Accumulation of social capital.</p> <p>Students developed a "course identity" despite their cultural diversity.</p> <p>Former students from previous years joined the course social network site and interacted with students or the teacher.</p> <p>At the end of this experiment they could clearly see the potential of social networks as an educational tool for extending the traditional classroom education</p>
Suggestions	[probably more tools and dedicated FB apps are needed]
Was it repeated?	Yes, the Page is on-going.
Remaining questions	<p>Is there sufficient proof of educational value to consider the proposed platform as an alternative/complement and as a non conventional way to classical information distribution (printed lecture notes and course web page)? The educational benefits of social networks are largely untested.</p> <p>Will it improve learning or it will distract the students from their usual course work?</p> <p>How would teachers embrace this new technology and way of teaching and how will impact our traditional way of preparing teaching materials?</p>

(4) de Villiers, M. R., (2010). Academic use of a group on Facebook: Initial findings and perceptions. Proceedings of Informing Science & IT Education Conference (InSITE) 2010, 173-190	
Tool	FB group (UNISA E-Learning Study Group), closed
Class name	Concepts and Principles of e-Learning
Faculty	School of Computing
University	University of South Africa, S. Africa
Level	4 th year (BSc Hons.)
Elective/compulsory class	elective
Time/duration	2009, 1-year module
FB use Optional/compulsory	Optional
Graded	No
Number of class students	40
Number of participants	30
Percentage	75%
Regular participation	24 active students
Age (mean)	Mostly 30+ professionals, but there were other ages too (some 50+)
Previous student XP with FB	Not all. At least 6 people (4 aged 50+) joined FB specifically for this
Other e-Learning tools used in parallel	Yes, there was an institutional official student website, which also offers discussion board facility.
Student survey	No. Some students chose to write an essay about the FB group and their answer had to do be grounded in theory.
Students' previous familiarity with each other	no
FB privacy advice given to students	The students were informed that research would take place about the FB group and only the content of points made from those who signed informed consent forms is included in the paper.
In-class / on-line	Distance-Learning course
Instructor made a "teacher-only" profile	no
Students made new profiles	no
Comments irrelevant to course	Yes. e.g. technical issues, general queries or about another module. These were brief and had few contributions. Light-hearted banter and humour occurred. 'intruder'.
Instructor's role & presence	Three academics were involved: The lecturer, an administrator, and an external marker. There were also two academic guests: The faculty dean as observer and a 'guest speaker' from another university who provided some links and made 5 posts. The lecturer asked questions to prompt the learners or give guidance to useful resources. Not interfering, but participating. The lecturer took a 'back seat', but stepped in from time to time to guide. Made 12 responsive contributions (some were phrased as questions to prompt the students or guide to useful sources).
Research methods	content analysis of the discussions, qualitative evaluation research using a simplified grounded theory approach, and thematic analysis
Reason for using FB	To investigate if such a venture can support true learning. FB group was set up with the aim of supporting participative learning in a constructivist paradigm way
How FB was used	Discussions on academic content-related topics, largely initiated by the students.
FB tools that were used	Discussion forum,
Participants	30 students (approx.24 active) 3 UNISA academics: the course leader, the FB Group administrator and an external marker 2 external academics who served as 'virtual visiting scholars'
Postings/participant	There were 20 discussion topics In the 8 discussions that are analysed in the article, the lecturer made 12/123 contributions 5/123 by the academic guest

Problems faced/possible issues to consider	<p>One person (non-student) advertised 'get-rich' books (the administrator mistakenly let him join, and was removed after 2 students complained)</p> <p>Some students had reservations about contributing (were intimidated by the expertise of others).</p> <p>Some students were worried about being misled by incorrect student contributions. However, the lecturer feared that forced removal of student contributions might intimidate students from posting and chose to remind students that the accurate information is in the study material. Only 1 posting was deleted.</p> <p>Three students experienced distraction while logging in to study.</p> <p>Some students were disappointed when there was no feedback from others on their postings, or when there were no new posts in general.</p> <p>Older learners experienced some discomfort with the learner-centred approach.</p> <p>Because of its nature and facilities, FB cannot serve as a system for uploads and downloads of files nor for the maintenance of records.</p>
Comparison with other e-Learning tool	Participation was higher in the FB forum than in the university system.
Results, Findings and benefits that were observed	<p>The discussions were on aspects of the module that were less clear-cut or involved additional reading.</p> <p>Much of the content revealed insightful contributions</p> <p>Students initiated discussions that applied syllabus topics to contemporary phenomena</p> <p>There was independent research, academic debate and a range of opinions.</p> <p>The greater amount of independent research may be due to the public exposure in sharing one's findings with fellow-students.</p> <p>There is more time to think than when responding verbally.</p> <p>Some students participated more than others.</p> <p>Most participants enjoyed it.</p> <p>Most students indicated that they had truly learnt from others' contributions to the discussions.</p> <p>One student said that the benefit was more in meeting fellow student rather than academic.</p> <p>Students appreciated the interaction, in contrast to the isolation of distance learning. The FB group lifted the isolation of distance learners</p> <p>There were varying perceptions about the role of the leader.</p> <p>Overall: Group members did indeed learn, in particular by searching beyond the study material and by making personal contributions.</p>
Suggestions	<p>Some older students thought that it might be better for undergrads.</p> <p>The instructor says that she should have done a tutorial to explain how to participate in discussions and how to write on the Wall (for students who were not familiar with FB).</p> <p>Some students suggested that participation should be compulsory.</p> <p>The researcher believes that in contact teaching participation can be mandatory and scores assigned to the content and extent of participation. However, in distance learning, where learners with heterogeneous ages and experience are distributed globally, it cannot be enforced. Personal circumstances can make connectivity complex or expensive. Use of Facebook is blocked in many workplaces, so some students without connectivity at home could not use it at all.</p> <p>This mode could serve well for special-needs, such as autistic learners who battle with face-to-face communication.</p> <p>A brief survey would have been a good idea.</p> <p>Four students suggested collaboratively constructing input on a theme.</p> <p>Facilities for editing others' contributions didn't exist on FB at the time.</p>
Was it repeated?	No, because of a change of lecturer. This lecturer would have used it again.
Other	The actual usage of the FB group is up to the students (could it be enforced or not?)

	<p>FB wasn't used for posting course material. FB can't be an official repository. Membership cannot be mandatory and there should be no disadvantage to students who won't join. In the study material, students were told, 'It's YOUR group. Feel free to initiate discussions, new topics, do Wall writing'. Several postings were made after 03:00 in the morning, local time. Some students requested course material to be uploaded on the FB group, but this was not done, so as not to disadvantage non-participants. Some students had profile pictures not of themselves, but of babies, pets, etc.</p>
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(5) English, R., & Duncan-Howell, J. (2008). Facebook© Goes to College: Using Social Networking Tools to Support Students Undertaking Teaching Practicum. MERLOT Journal of Online Learning and Teaching Vol. 4, No. 4, 596-601, December	
Tool	FB group, closed
Class name	business education
Faculty	Education
University	Queensland University of Technology, Australia
Level	4 th year
Elective/compulsory class	compulsory
Time/duration	2008 one practicum period (4 weeks)
FB use Optional/compulsory	Optional
Graded	No
Number of class students	33
Number of participants	28 (joined the group = those who used FB)
Percentage	85%
Regular participation	18 (actively participated)
Age (mean)	21-40
Previous student XP with FB	Yes. Non-users didn't join.
Other e-Learning tools used in parallel	No (those who didn't participate in the FB group communicated by email)
Student survey	no
Students' previous familiarity with each other	yes
FB privacy advice given to students	No, they were already familiar with FB, so they knew how to keep things private if they wanted to
In-class / on-line	Quasi-distance mode as a result of their practicum placements
Instructor made a "teacher-only" profile	no
Students made new profiles	no
Comments irrelevant to course	There were "support" & "joke" posts but these were ok. Overall, the students were very professional.
Instructor's role & presence	2 administrators (lecturer + colleague) Answered questions that the students were unable to answer.
Research methods	All the posts were analysed, coded and grouped.
Reasons for using FB	To see how the digital behaviours and habits of students may be used in developing supportive tools that can be harnessed during practicum periods To see if these online learning tools provide environments that lead to sustained social collaboration away from campus or study imperatives. To find advantages and disadvantages of using FB to support classroom learning. To connect with students while they are on practicum. To examine the students' experiences and behaviours during their teaching practicum placements
How FB was used	to support students undertaking teaching practicum
FB tools that were used	Wall, discussion forum, photos, videos
Participants	2 administrators (Instructor + colleague) + students
Postings/participant	100 posts 31 posts by the lecturer (4 were on behalf of a student who was unable to post). 17 posts by a student in a rural/remote area. Two discussion forums were started by one rural student who also posted 32 photographs and two of the three videos. Three discussion topics were set up and attracted 15 posts.
Problems faced/possible issues to consider	One student was placed in China, so had no access to FB One student couldn't post because her school had blocked FB Only administrators could start discussion topics, so students had to ask the administrator to start a topic on their behalf. The discussion forum requires several steps to gain access.

Comparison with other e-Learning tool	<p>The prevalence of LMSs within tertiary education means that students are potentially members of multiple online unit-based discussion groups. Often there is an initial flurry of activity as students ask for advice, help, contact details, resources and general assistance. However, it often diminishes over time, and cannot be sustained during teaching practicums. This manifestation of online discussion groups [FB group] might be more active over a sustained timeframe.</p> <p>The students prefer it to Blackboard because they have to log onto something different, while they are already on FB [twitter didn't work well either – (personal communication)].</p>
Results, Findings and benefits that were observed	<p>The majority of the activity was on the wall.</p> <p>The lack of activity in the “discussion forum” is probably a result of the steps required to access discussion topics.</p> <p>The posts can be classified in 5 themes: Other (n=54), Excitement (n=37), Problem (n=20), Joke (n=19) and Solution (n=18) (some of the 100 posts fit in more than one category)</p> <p>The students used the Wall a lot, because that was very easy.</p> <p>The majority of posts were associated with affective communication such as group reinforcement, encouragement, and support which may suggest that the sense of community was strong in this group, but also that the key use of these types of online tools may lie more in the affective domain.</p> <p>Students undertaking practicum studies would appear to need more support from their peers and lecturers during this period.</p>
Suggestions	<p>The small number of students, and their relationships, which had been established two years earlier, and over their involvement in other subjects throughout the four years of their degree may have skewed the data in favour of the Facebook group, creating an enthusiasm and a community that might not otherwise have been present. It would be interesting to replicate this study with the postgraduate cohort who do not know each other and who meet for the first time.</p> <p>The key use of these types of online tools may lie more in the affective domain.</p>
Was it repeated?	Yes. They still use it. A new group every year.

(6) Estus E.L., (2010). Using Facebook Within a Geriatric Pharmacotherapy Course. American Journal of Pharmaceutical Education 2010; 74 (8) Article 145	
Tool	Facebook group, closed
Class name	geriatric pharmacotherapy
Faculty	College of Pharmacy
University	University of Rhode Island, USA
Level	3 rd year
Elective/compulsory class	elective
Time/duration	10 weeks, Fall semester 2009
FB use Optional/compulsory	Compulsory (the course was elective and FB use was stated in syllabus)
Graded	Yes. Weekly posts were not graded specifically, but consistent participation carried a point value that was allocated to the final grade
Number of class students	30
Number of participants	30
Percentage	100%
Regular participation	Yes, some were more active than others.
Age (mean)	21-22
Previous student XP with FB	yes
Other e-Learning tools used in parallel	Yes. University Web-based platform was used to upload readings and e-mail assignments with attachments, among other functions.
Student survey	Yes. 28/30 with some open-ended questions
Students' previous familiarity with each other	yes
FB privacy advice given to students	Students discussed the appropriateness of content posted on FB profiles. There was a talk about privacy & professionalism.
In-class / on-line	Class meetings once per week
Instructor made a "teacher-only" profile	no
Students made new profiles	no
Comments irrelevant to course	No. Students were given instructions in the syllabus about the expectations of participating in the group. All posts within the Facebook group had to be appropriate, professional, and consistent with the purpose of the activity.
Instructor's role & presence	Two faculty members were involved in the group so that active facilitation could occur within the discussion topics. This fostered a positive environment to guide the discussions. Students appreciated the instructors' contributions in facilitating discussion threads.
Reason for using FB	To evaluate the use of an Internet-based social networking site within an elective geriatric pharmacotherapy course To create and evaluate an interactive forum about course-related topics To enhance communication among students and faculty members within the course To communicate between classes
How FB was used	Each week, 3 students were assigned to post a healthy aging topic (explaining it and providing a relevant link), and other students in the class were expected to post their comments and reactions. The healthy aging topics were also discussed during class. There were times when the class ended before assigned readings were discussed. When this occurred, the instructor posted questions on the Facebook group board during the subsequent week and students commented and provided feedback that was viewable by all members of the group. Facebook was also used to enhance other course requirements (one assignment was to read a book) nearly 90% of the students agreed that topics posted throughout the semester on the weekly discussion board effectively supplemented the concepts presented in the book
FB tools that were used	Discussion board

Participants	2 instructors + students
Postings/participant	-
Problems faced/possible issues to consider	<p>Students were regularly on Facebook, but not on the academic group site. Activity that occurred on the group discussion board was not immediately evident unless the student actually clicked on the group link and then viewed the board, often a multistep process. There were no reminders that new activity occurred, and the group activity was not viewable from an individual's home Facebook page.</p> <p>FB's inability to serve as a single comprehensive tool when running a course. Parallel use of a university platform was necessary. This created 2 places for students to check for course updates, which was time consuming.</p>
Comparison with other e-Learning tool	Different uses for each tool.
Results, Findings and benefits that were observed	<p>Using Facebook allowed students to discuss topics more openly and encouraged classroom discussions of healthy aging topics.</p> <p>A wide variety of topics were posted throughout the semester pertaining to geriatrics and health care.</p> <p>One forum discussion topic initiated another interesting class discussion that continued beyond the Facebook group and into class time.</p> <p>In some instances, written comments were more structured and insightful than oral class discussions.</p> <p>Opportunity to discuss topics in depth that were not covered adequately during class time.</p> <p>Great discussion followed the comments, both in FB and in class.</p> <p>The majority of the students valued the FB group activities.</p> <p>Discussing topics on the group discussion board was easy, and over 90% agreed that class discussions and activities effectively supplemented the topics posted by their peers.</p> <p>Students felt that using the Facebook discussion board was a valuable part of the course, and they supported its continued use, with additional capabilities and expansion in future course offerings.</p> <p>Several students commented that formulating their thoughts through online posts was easier than offering those same comments in class.</p> <p>An improved relationship among the students also was evident as the course progressed.</p> <p>The group postings were always available, enabling 24-hour access 7 days a week. Students appreciated checking and commenting at their convenience.</p>
Suggestions	Further research must be conducted to evaluate the personal, academic, and professional implications of merging Facebook into an academic setting before consensus can be reached
Was it repeated?	Yes, every year since and the activities were expended too. The instructor plans to continue using it.
Other	<p>In 2011 3/21 students didn't have FB accounts (either de-activated their accounts because they felt they spent too much time on FB, or never signed up), so they posted via the lecturer (emailed her their material).</p> <p>It seems that they did benefit, however, less than the others.</p>

(7) Fernàndez, C., & Gil-Rodríguez E.P. (2011). Facebook as a Collaborative Platform in Higher Education: The Case Study of the Universitat Oberta de Catalunya in: T. Daradoumis et al. (Eds.): Technology-Enhanced Systems and Tools, SCI 350, pp. 27 – 46	
Tool	Two FB groups (one in Spanish and one in Catalan), closed
Class name	2.0 Travel: on-line tools and resources
Faculty	
University	Open University of Catalonia, Spain
Level	this was not a degree course
Elective/compulsory class	Free and open to all Facebook users
Time/duration	5 weeks, October-November 2009
FB use Optional/compulsory	Only way of course delivery
Graded	no
Number of class students	52 Spanish + 37 Catalan = 89 in total registered
Number of participants	14 Spanish + 13 Catalan = 27 totally participated
Percentage	
Regular participation	14/52 = 27% + 13/37 = 35%
Age (mean)	30-45
Previous student XP with FB	yes
Other e-Learning tools used in parallel	no
Student survey	Yes – 22 students responded
Students' previous familiarity with each other	no
FB privacy advice given to students	Some instructions on the methodology of the course and the reason to use FB
In-class / on-line	fully on-line
Instructor made a "teacher-only" profile	no
Students made new profiles	no
Comments irrelevant to course	no
Instructor's role & presence	<p>Facilitator: the lecturer proposes, but does not impose; suggests, but does not give definitive answers.</p> <p>The ultimate objective is that the community self-manages its own learning process and understands that the lecturer is another resource</p> <p>A facilitator, previously trained in these methodological aspects, proposed forums, different forms of working, actively participated without becoming the main character, offered students the possibility of opening and managing discussion forums themselves, provided a multitude of web resources for cooperating in the learning activities, interwove the experiences of the students to promote a more cooperative work, encouraged a higher participation limiting their own, proposed practical and open activities based on which the students could use their previous experiences.</p> <p>85% Catalan and 80% Spanish completely agreed that the role of the instructor was necessary</p> <p>The main reason for contributions from students was to respond to the subject opened by the lecturer</p> <p>The reputation a priori of the lecturer continues to give a hierarchical structure to contributions even on such an open environment as Facebook, strengthening the perception of quality of the experience but, to the contrary, distorting its spirit.</p> <p>Contributions from the lecturer conditioned those of the students. In other words, the majority of student contributions were motivated by a prior contribution from the lecturer.</p> <p>There is an intrinsic trend towards transforming the learning activity, "open" by definition, into an activity with a more "facilitator-centred", traditional structure</p>
Research methods	"virtual" Ethnographic methodology
Reason for using FB	To analyse the impact of Facebook on open learning methodologies

	<p>To prove that learning can be enormously promoted if educational methodologies are designed that are closer to open social interaction, with a direction and power that falls more to the actual users and using tools that they are accustomed to using.</p> <p>To explore its potential as a learning platform.</p>
How FB was used	<p>As a virtual basic learning environment</p> <p>Each student reported their journeys using the existing web 2.0 tools</p>
FB tools used	<p>Wall and discussion forums opened by instructor or students</p> <p>Blogs were opened in “Blogger” (not in FB) & linked to the FB group</p>
Participants	Facilitator + students
Postings/participant	<p>Spanish + Catalan:</p> <p>9 discussion forums + 7 discussion forums</p> <p>155 posts in total + 87 posts in total</p> <p>14 students + 13 students</p>
Problems faced/possible issues to consider	<p>The main criticism of the course: “five weeks is not enough”: an initial adaptation period was necessary for the course methodology.</p> <p>Lack of notifications from the Facebook groups as a limitation. students are obliged to continually visit the group if they want to be up to-date with the discussion forums</p> <p>The lack of flexibility is a very significant limitation which is obviously balanced out by other positive aspects of Facebook. The FB groups structure doesn’t permit any level of customisation or personalization</p> <p>FB is a platform that is not owned by us. We have no control over Facebook. Any modification or changes in the Facebook policy will have a direct and unquestionable impact on the learning actions we develop. This case study coincided with changes in the structure of discussion forums & groups, so the learning community suddenly suffered.</p>
Comparison with other e-Learning tool	
Results, Findings and benefits that were observed	<p>68% of Catalan and 92% of Spanish students completely agreed that they had fun participating in the activities of this course</p> <p>With regard to social or peer-to-peer learning, in contributions from students we could observe explicit and implicit elements that denote this type of learning within forums, for either:</p> <ul style="list-style-type: none"> a) achieving objectives proposed, based on doubts resolved between various students, b) providing links to help explain something or to inform about something related to the forum subject, c) contributing new information relating to the subject under discussion, d) displaying critical opinions <p>Somehow, the student who opens the forum acquires a certain lecturer role, simply for having had the initiative of opening a forum on the course subject and also by thanking the other students for their contribution, lecturer-style</p> <p>The influence of active users made the forum activity more dynamic. On both the Spanish and the Catalan course there was a group of 3 or 4 students who participated more than the rest of the students</p> <p>Values such as horizontality and openness are not simple changes to the educational design but imply a special effort to be made along many different lines in order to change a 1.0 paradigm which is more ingrained in our teaching minds than we had thought.</p>
Was it repeated?	No. The weaknesses that were observed made them consider the adequacy of FB for their context. They think of using it for communication and participation, but not as a pedagogical tool.
other	<p>Udutech is an application that adds certain functions (to use it as a LMS) to the original Facebook platform.</p> <p>Finishing the course or completing all of the activities was not compulsory and UOC did not offer an official diploma for doing the course. This facilitated the abandonment of all those users who did not have a strong commitment to the experience.</p>

(8) Fouser R.J. (2010). From CMS to SNS: Exploring the Use of Facebook in the Social Constructivist Paradigm. 2010 10th Annual International Symposium on Applications and the Internet (SAINT), 19-23 July 2010.	
Tool	FB group, private
Class name	Korean Language and Culture Education (teacher education)
Faculty	Korean Language Education
University	Seoul National University, S. Korea
Level	3 rd & 4 th year
Elective/compulsory class	elective
Time/duration	1 st semester of 2010
FB use Optional/compulsory	optional
Graded	Yes, 10% (participation)
Number of class students	11
Number of participants	11
Percentage	100%
Regular participation	By 10/11
Age (mean)	n.a.
Previous student XP with FB	1/11
Other e-Learning tools used in parallel	Blackboard
Student survey	Yes, questionnaire in the 8 th week
Students' previous familiarity with each other	yes
FB privacy advice given to students	Yes. Students were given a brief introduction on how to maintain privacy and report any abuse to Facebook.
In-class / on-line	75min * 2 times per week class time
Instructor made a "teacher-only" profile	yes
Students made new profiles	Not required, but 10/11 were not using FB before, so their profiles were new anyway
Comments irrelevant to course	unknown
Instructor's role & presence	He intervened to raise questions and initiate discussion (only 1-2 times per week not to give students the impression of using Facebook to transmit messages to students between class meetings) Posted comments
Reason for using FB	To engage students to share observations between class meetings as a supplemental activity in the social constructivist paradigm
How FB was used	To extend in-class discussion As a repository of student-generated data The instructor used data and comments posted by students to stimulate further in-class discussions.
FB tools used	Discussion forum, Wall, photos,
Participants	Instructor + students
Postings / participant	-
Problems faced/possible issues to consider	The instructor found the lack ability to upload PDF and Word attachments frustrating but the students didn't mind, since they used it for discussion, not for sharing files. Students might be distracted by friends, games and other applications. Comments on FB can cause legal problems, so staff must consider students' familiarity with SNSs and institutional guidelines for using non-university ICT systems for teaching. Students found it inconvenient that they couldn't get notifications of group activity via SMS so they had to check email instead. This was because there weren't regular FB users, so they wouldn't log into FB for other reasons. Web access to FB via mobile phone is too expensive
Comparison with other e-Learning tool	students were more positive toward the use of Facebook for class discussion than Blackboard because of its simplicity and ease of use
Findings and benefits that	Ease of sharing

were observed	<p>Integration of student-generated data into face-to-face activities</p> <p>FB helped students think about the class between class meetings</p> <p>FB augmented the face-to-face meetings</p> <p>FB was a valuable resource as repository of student-generated data</p>
Suggestions	<p>The researcher believes that previous face-to-face familiarity promotes the effectiveness of FB, and that FB will work well in small classes where students and teachers have good rapport.</p> <p>More research on the use of Facebook and other SNS systems as tools to enrich face-to-face teaching is needed to develop an understanding of the immediate and long-term benefits of such activities to students.</p> <p>Research on the use of Facebook and other SNS systems in a variety of cultural and educational settings would be particularly useful.</p>
Was it repeated?	Unknown.

(9) Kayri, M., & Çakir, Ö. (2010). An Applied Study on Educational Use of Facebook as a Web 2.0 Tool: The Sample Lesson of Computer Networks and Communication. International Journal	
Tool	(2) FB Groups, open
Class name	Computer Networks and Communication
Faculty	1. Faculty of Educational Sciences, Department of Computer Education and Instructional Technologies 2. Faculty of Education, Department of Computer Education and Instructional Technologies
University	1. Ankara University, Turkey 2. Yuzuncu Yil University, Turkey
Level	3 rd year
Elective/compulsory class	compulsory
Time/duration	3 months, 2008-2009 academic year
FB use Optional/compulsory	voluntary
Graded	no
Number of class students	1. 31 (18 male + 13 female) 2. 27 (22 male + 5 female)
Number of participants	All
Percentage	100% [maybe it was compulsory?]
Regular participation	Most of the students participated
Age (mean)	22.65 (+/- 1.59)
Previous student XP with FB	4/58 never used Facebook
Other e-Learning tools used in parallel	no
Student survey	yes
Students' previous familiarity with each other	yes
FB privacy advice given to students	It wasn't necessary, as students were familiar with it (computer science)
In-class / on-line	2 hours per week of theory + practice lessons on Facebook group
Instructor made a "teacher-only" profile	yes
Students made new profiles	yes
Comments irrelevant to course	no
Instructor's role & presence	Not very active. Generally watched. Only intervened in case of wrong information. Sometimes asked questions in order to trigger a discussion. It is reported that when the instructors acted as moderators on Facebook the students were under control and became more participant. And the scholars conclude that in this sense, Facebook management must be under the supervision of instructors.
Research methods	semi-experimental setup, observation descriptive research and a general survey model correlational research
Reason why FB was used	To examine the educational use of Facebook. To show the attitudes of the students towards educational use of FB
How FB was used	Information sharing, not restricted to the practice hours.
FB tools used	Discussion forum or wall?
Participants	The 2 instructors and the students
Postings/participant	
Problems faced/possible issues to consider	None are mentioned.
Comparison with other e-Learning tool	The fact that learning management systems present e-mail, forums and chat facilities together with personal profiles (like Facebook does) enables instructors to use the systems without introducing an additional teaching management system.
Results, Findings and benefits that were observed	Heterogeneous students' attitudes towards the educational use of FB. Those who spent much time on Facebook also perceived Facebook as

	<p>an educational tool. Those who had previously considered Facebook as a social setting had positive attitudes towards educational use of FB.</p> <p>It was considered natural that those who frequently use Facebook could easily use it in education, as well.</p> <p>It might be suggested that Facebook can be used in education.</p> <p>Student talking time is longer than teacher talking time.</p> <p>It is student-centred.</p> <p>Lesson materials are saved on Facebook lesson page, students can access to information and answers to the previous questions by classmates do not prevent them from re-asking questions (?)</p> <p>Most of the students actively participated in virtual environment during the study, unlike the traditional method.</p> <p>Learning was shaped by the students, as constructivist approach suggested, and even lesson materials were developed by the students.</p> <p>Facebook makes the lesson enjoyable.</p> <p>Facebook provides lots of electronic material.</p> <p>Facebook might be suggested as an effective learning environment</p>
Suggestions	<p>FB use is more effective with instructors' presence.</p> <p>Facebook must be improved. The emergence of next generation networks & services has ushered in a new era of technological advancement. At this time, the focus is to have some technology-independent, network-agnostic and completely autonomic management framework for networks and its related services</p>
Was it repeated?	No, but intend to

(10) Loving, M., & Ochoa, M. (2011). Facebook as a classroom management solution. <i>New Library World</i> , 112 (3/4): 121—130	
Tool	FB Group, private (secret)
Class name	BA Honors Research Methodology
Faculty	various
University	University of Florida, Gainesville, Florida, USA
Level	Undergraduate, there was a mix of levels, many were working on the senior honours thesis project
Elective/compulsory class	elective
Time/duration	One semester, Spring 2008
FB use Optional/compulsory	Compulsory (on the 1 st day students were asked if anyone objected)
Graded	Yes.
Number of class students	17
Number of participants	17
Percentage	100%
Regular participation	
Age (mean)	17-22
Previous student XP with FB	16/17
Other e-Learning tools used in parallel	no
Student survey	no
Students' previous familiarity with each other	Probably yes.
FB privacy advice given to students	Privacy was addressed on the 1 st day and emphasized throughout the course.
In-class / on-line	In-class
Instructor made a "teacher-only" profile	no
Students made new profiles	no
Comments irrelevant to course	no
Instructor's role & presence	Very active.
Reason for using FB	<p>Improving classroom communication.</p> <p>As online course management software (as a complete CMS substitute)</p> <p>To create a closed environment for their students with the ability to communicate privately about assignments, questions and topics of discussion related to the very specific subjects covered in the course syllabus.</p> <p>Facebook allows instructors to distribute documents (via posting and messaging), administer discussion lists, conduct live chat and handle some assignment posting as long as it is alright to cut and paste and share between students.</p>
How FB was used	<p>To submit course work.</p> <p>To stay informed about course deadlines and objectives.</p> <p>To communicate with other class members and the instructor</p> <p>For students to communicate about assignments, questions and topics of discussion.</p> <p>Depending on the work and whether it was important to share ideas, students sent their assignments either to the instructor's inbox or the group page.</p> <p>The instructor could accommodate discussions, send group e-mails, update announcements and to provide an online forum that did not require additional software or other downloads.</p> <p>For instructors to distribute documents, administer discussion lists, conduct live chat and handle some assignment posting.</p>
FB tools used	Wall, discussions, messages, live chat
participants	Instructor + students
Postings / participant	
Problems faced/possible issues to consider	<p>There are inconveniences for instructors.</p> <p>The instructor must simply rely on e-mailing, spreadsheets and other</p>

	non-integrated tools to support course management with unsophisticated patchwork of satellite applications
Comparison with other e-Learning tool	<p>With other CMS options, it is not always clear which e-mail the students are using to receive such messages (school or personal) and what priority they assign to logging into a specific online tool that is likely only used for coursework.</p> <p>Facebook cannot compete with other CMS is in grading, assignment uploading and online testing. For these aspects of conventional CMS functionality, the instructor must simply rely on e-mailing, spreadsheets and other non-integrated tools to support course management.</p>
Results, Findings and benefits that were observed	<p>Facebook groups can serve as an appropriate and functional class page to which students are drawn back in order to submit course work, to stay informed about course deadlines and objectives, and to communicate with other class members and the instructor.</p> <p>Communicating with students through messages and knowing that they are receiving and reading those messages gives the instructor a renewed confidence in the classroom support environment.</p> <p>Putting names with faces became much easier for the instructors, providing an easy reference via student's page image which in most instances is a recognizable personal photo.</p> <p>It is a great way to connect to the students.</p> <p>The tradeoffs between the appropriation of Facebook as an online classroom management solution and using a conventional CMS were relatively few and in many ways worth the necessary workarounds.</p> <p>The greatly improved level of communication that was reflected in student interest and in all classroom interactions, both real and virtual.</p>
Suggestions	<p>An important initial consideration before fully committing to using a Facebook groups page is to verify that all members of the class have a Facebook account or are otherwise not opposed to signing up.</p> <p>Define the preferred method of communication and delivery of assignments using Facebook and remembering to communicate clearly that information to students at the earliest possibility.</p> <p>Suggest creating a private group</p> <p>Would have been a good idea to make a survey afterwards.</p>
Other (privacy related)	<p>Not long after inviting students to the class's group page, instructors noticed that many of student profile images changed to more toned down versions of their former profile pictures. Images morphed quickly into modestly attired, sobered up versions of former depictions under the instructor's virtual gaze.</p> <p>The private group setting was chosen (this is highly suggested) to ensure a closed environment for student postings, class assignments, to ask questions freely and reply to group discussions. Instructors wanted the course content not to appear in searches or be viewable by non-members. Also, by using the private group setting, the name of the group did not display on faculty or student Facebook profiles.</p>
Was it used again?	Yes, and intend to use it in the future, as it is a great way to connect with students.
	It was a great improvement when FB made it possible to use pdf and other documents.

(11) McCarthy, J. (2009). Utilising Facebook: immersing Generation-Y students into first year university. The Journal of the Education Research Group of Adelaide, Volume 1, Number 2, pp. 39–49, February	
Tool	FB group (IOW) open
Class name	Imaging Our World
Faculty	design
University	University of Adelaide, Australia
Level	1 st year
Elective/compulsory class	Elective
Time/duration	12 weeks, 2008
FB use Optional/compulsory	compulsory
Graded	Submission and comments 15% of final grade
Number of class students	100 (23 international)
Number of participants	100
Percentage	100%
Regular participation	Participation was higher in the early weeks
Age (mean)	81% of the students were between 17-20 years old
Previous student XP with FB	75/100
Other e-Learning tools used in parallel	Paper says Moodle, on email he said Blackboard, for all official course documents and additional communication.
Student survey	Yes. At the beginning and end of the course
Students' previous familiarity with each other	no
FB privacy advice given to students	2-hour workshop in the opening tutorial to help inexperienced students get to know how FB works.
In-class / on-line	both
Instructor made a "teacher-only" profile	No
Students made new profiles	no
Comments irrelevant to course	Discussions often evolved from formal academic critiques to informal social interactions as the students became more comfortable with each other
Instructor's role & presence	The success of this tool relied heavily on a proactive attitude from the course lecturer. It was important not only to monitor the discussions that took place between students, but to get involved and participate by providing comments and critiques, prompting dialogue between students and in some cases driving the discussion.
Reason for using FB	To investigate the efficacy of Facebook as an academic tool in tertiary education, specifically in design education. To help immerse 1 st year students to university culture, by furthering the development of academic and social relationships between peers To improve the general experience of first year by tackling the common social barriers, such as language differences and introversion, students face in the early stages of university life
How FB was used	Every two weeks, students were required to submit images to an online gallery in Facebook, plus a 25+ word description, and to provide critiques (50+ words) on peers' submissions The galleries were open for submissions for a period of two weeks, but remained open for viewing for the duration of the entire course.
FB tools used	Photos, photo galleries in the form of "Events"
Participants	Instructor + students
Postings / participant	Example: An image that generated the most discussion within the first gallery, received 57 posts from 23 students.
Problems faced/possible issues to consider	Academic workload. It was very time-consuming for one person to assess and monitor all submissions.
Comparison with other e-Learning tool	It was determined that students would be more inclined to participate in the study if it was hosted on a site they already intended to visit; this criterion told greatly against the use of Moodle, which would have resulted in an independent university site.
Results, Findings and benefits	The 'group' and 'event' applications enabled the creation of an

that were observed	<p>accessible, easily-maintained, and highly interactive online forum</p> <p>The 24/7 availability of the site conformed with the ‘anytime, anywhere’ work attitude of Generation-Y students</p> <p>The galleries allowed students to connect with each other in a virtual environment, and to develop academic relationships freed from the constraints of the classroom and their own inhibitions.</p> <p>Through the use of such collaborative learning, students were able to engage with their peers and develop a sense of belonging within the learning community.</p> <p>The discussion transformed from formal critiques and responses in regards to the submission, to social interaction between students including topics such as personal computers, digital cameras and overseas travel.</p> <p>The majority of students indicated they were more comfortable asking questions and critiquing peers in an online environment rather than in class</p> <p>The Facebook group and image galleries also had positive effects on developing cross-cultural relationships from both an academic and social perspective</p> <p>There was a considerable increase in the number of Facebook ‘friends’ within the majority of students, which often translated into face-to-face interaction.</p> <p>As the students become more comfortable within their new academic networks, in-class participation increased dramatically.</p> <p>The addition of a virtual environment enabled international students to formulate meaningful comments and critiques, as opposed to rushing immediate responses under pressure in the classroom (written vs. spoken)</p> <p>An unexpected outcome from the study was an accessible and effective marketing tool for the school</p>
Suggestions	<p>The project will be adapted in 2009 based on the initial findings of this study and the design of course-specific Facebook applications.</p> <p>There needs to be a much stronger link between in-class and on-line environments in order to strengthen the face-to-face engagement between peers.</p> <p>The on-line tasks were most beneficial during the early weeks of the semester with participation waning during the latter weeks, possibly due to major assignments, exam revision and other courses. In 2009 the Facebook assessment will be compressed into an intensive 6-week program to capitalise on the initial enthusiasm of the students.</p> <p>The design and construction of course-specific Facebook applications, as opposed to using the default ‘group’ and ‘event’ tools, will enhance the experience by ensuring a more cohesive design language throughout the course content, and a stronger connection between the ‘in-class’ and ‘on-line’ environments.</p> <p>A move to collaborate with other Group of Eight universities will be instigated.</p>
Was it repeated?	Yes. In the following 2 years as a group. In 2011 it changed to a Page.
Other	Collaboration with other universities, one from the same country and one in another.

(12) Ractham, P., & Firpo, D. (2011). Using Social Networking Technology to Enhance Learning in Higher Education: A Case Study Using Facebook. In 44th Hawaii Intl. Conf. on System Sciences (HICSS), pp.1–10	
Tool	Facebook group “IS201” Group, closed
Class name	Introduction to MIS (Management Information Systems) - 3 courses
Faculty	Faculty of Commerce and Accountancy
University	Thammasat University, Bangkok, Thailand
Level	1 st year
Elective/compulsory class	compulsory
Time/duration	5 months (15 week = 105 days) 10/2009-2/2010
FB use Optional/compulsory	compulsory
Graded	Yes 10% of the grade, the students had to submit 4 news pieces
Number of class students	69
Number of participants	69
Percentage	100%
Regular participation	
Age (mean)	18-19
Previous student XP with FB	Most of the students
Other e-Learning tools used in parallel	no
Student survey	Yes + semi-structured 3 minute video “interview” from each student Survey: 75 distributed, 58 returned, 55 were valid.
Students’ previous familiarity with each other	No (1 st year students)
FB privacy advice given to students	Facebook Social Learning Project training during the first week of the semester. Students were informed about privacy on FB. Two instructors trained and instructed students how to use FB to collaborate & communicate with others within the “IS201 Group”.
In-class / on-line	In-class weekly sessions
Instructor made a “teacher-only” profile	Yes. (however, over time found it to be unsuccessful and integrated the personal and instructor accounts)
Students made new profiles	Mostly not.
Comments irrelevant to course	no
Instructor’s role & presence	A teaching assistant was assigned to oversee the communication lines between all members. Her main task was to answer class related inquiry by students, as well as send out assignment reminders to students. The instructor played a facilitator role and let the system run by itself.
Research methods	Adhere to Social Constructivism and Situated Learning concepts to help in building an effective learning environment for the course. This study is grounded in the concept of Communities of Practice. Data gathering techniques: usage analysis, survey, semi-structured interviews
Reason for using FB	To explore the possibility of using Web 2.0 technology, specifically social networking technology to support a community of practice in a classroom setting in order to enhance learning To explore the use of social networking to enhance education. To explore ways to improve the teaching pedagogy. To leverage social networking to share and generate tacit knowledge amongst each other within a small group environment. To set up an informal social constructivist learning environment. To form a community of practice as a supplement to a college-level course to better help students share and generate tacit knowledge To enable our instructors to build and maintain strong connections with and amongst the first year students To create an informal learning environment by having students collaborate and learn from each other To explore how users use Facebook in the context of a course To investigate the extent to which using Facebook would lead to collaboration amongst all members,

	<p>To examine if FB could help foster an engaging learning environment</p> <p>To form a community of practice that enables the students to achieve learning through social interaction via the Social Networking</p> <p>Artifact to set up an informal social constructivist learning environment</p>
Way FB was used	<p>As a learning resource for an MIS course for learners to share prior knowledge and experience.</p> <p>The instructor asked the students to participate in discussion, to make an evaluation video and post IT news in the pictures section.</p> <p>As our Social Networking artifact.</p> <p>The instructors often gave students a weekly assignment to complete before the next class discussion. This strategy further promoted collaboration amongst all members, who can carry on class discussion online through FB and allow all members to voice and respond to each other thoughts outside of the classroom.</p> <p>The students had to submit 4 news pieces, for which they were graded.</p> <p>The active participants also constantly update the Facebook group by posting IT-related news, as well as responding to each others' comments, answering and responding to others' questions, and asking others questions through their FB wall.</p> <p>Discussion, Wall Posts, and Tagging were used by students to converse and subsequently participate in different collaborative activities.</p> <p>The Wall was used mainly for: announcements & homework inquiries</p> <p>Instructors and students use the Wall to communicate with each other.</p> <p>Often students help each other in answering each other's questions.</p> <p>The discussions were used for the weekly assignments (one discussion per assignment?) Students shared knowledge with one another by sharing their answers to the discussion assignments. In addition, many returned to the discussion thread to response to other posters.</p> <p>Students made constructive comments on each other's posts, sometimes helping other class members to answer some simple questions.</p> <p>Photos (for taking class attendance and for students to upload subject related pictures),</p> <p>Students scanned and posted IT news on Facebook and gave summaries of the posted news. Many students often made interesting comments and responded to each other in this section.</p> <p>Video (instructors' class introduction and assignment example videos. Students also submitted a 3 minutes Facebook system evaluation video as a class assignment)</p> <p>Comments (on Wall, video and photos),</p> <p>Tags (from photo/video Student tagged each other in pictures and videos. They usually tagged each other to identify their friends who attended the class, thus they might borrow their class notes if they missed lecture.)</p> <p>Quizzes - Students created educational quizzes and shared them with the rest of the participants</p> <p>Private messages (between instructor and students).</p>
FB tools that were used	<p>The students made wall posts, commenting on others' content, and posting photos and videos. Tagging and quizzes were also used.</p>
Participants	<p>Facilitator: Instructor & another professor, teaching assistant, and 69 students were the active participants, while 3 other faculty members who were interested to observe and 6 non-registered students took the role of non-active participants</p> <p>The privileges non-active members were limited, in order to prevent certain possible misuse scenarios (e.g. breach of students' privacy).</p> <p>Three faculty members from the MIS and Finance Department who were interested in using Facebook for their future courses joined the IS201 subgroup but they mostly observed the ongoing activities without any active role in system usage. However, the often gave instructors off-line suggestions and feedbacks.</p> <p>Six students from prior classes who requested to join the Facebook subgroup. There was no definite task assigned to this group, but they</p>

	occasionally made comments on various wall posts and conversed with friends who were taking the course to advise them and share knowledge gleaned from prior experience
Postings/participant	2640 posts Posts by students: 2305, by instructors 282 by assistant 33: friends 20 On average each student wrote 34 posts or 2 posts per week.
Problems faced/possible issues to consider	Many students worried that if students were the allowed to create their own quizzes, the content validity might be compromised. A student suggested: "I like to see more quizzed for our class. It is fun, but I am not sure if the answers were all correct." The instructor wanted the students to write down what they read on the IT news, but they only did a screen-shot of the news.
Comparison with other e-Learning tool	
Results, Findings and benefits that were observed	Facebook provides an easy-to-use and familiar technology for learners. Sharing IT news and responding to others in the Photo section were popular amongst all users. The Quiz feature was a big hit, where a lot of students could create and take each other's quizzes. The highest amount of activity occurred in November- December. These months were the busiest in terms of class assignments, as well as members starting to get acquainted with one another in ways which involved generating a high amount of discussion and comments between participants. Collaboration was independent of space and time. There was strong evidence of a high number of communicative and collaborative activities amongst all student 78% of the students think it's useful to use FB as a supplemental learning tool however only 55% think that FB helped them in learning. The high volume of communication between students and the overall positive responses from the survey led us to conclude that there is great potential for informal learning environments where users utilize FB as a centralized space to communicate, collaborate, and achieve complementary learning to the in-class material. Informal learning occurred in a social constructive manner where students, instructors, and other community members collaborated, conversed, shared knowledge, and helped each other to gain better understanding of the subject matter through vigorous discussion. Social networking technology can be used effectively to foster a culture of learning, as a learning tool within a small group of users.
Suggestions	Many students suggested employing different edutainment, such as Quizzes, Games, and Mobile features to make the class more fun. 94% (52/55) of students asked for the integration of mobile phone technology for the class. A student suggested: "I usually use my mobile phone to answer the question in the discussion forum. I wish the instructors will offer other Facebook related homework, so I can do it on-the-go." Further research on mobile learning through smartphones, as well as different strategies to transcend from informal to formal learning should be investigated. Class activities i.e. lectures, homework, assignments & participation (in-class and virtual) must be well organized. An instructor should employ different learning strategies that are well suited for her/himself, while constantly remaining aware of the importance of keeping the interaction fun, honest, and – most importantly – articulated. The trend of Web 2.0 adoption will continue as long as there is a need for people to socialize and communicate.
Was it used again?	No, tried other things instead.

(13) Rambe, P., & Ng'ambi, D. (2011). Towards an information sharing pedagogy: A case of using Facebook in a large first year class. <i>Informing Science: The International Journal of an Emerging Transdiscipline</i> , 14(1), 61-89.	
Tool	Facebook group, closed
Class name	Information Systems
Faculty	Commerce Faculty
University	University of Cape Town, South Africa
Level	1 st year
Elective/compulsory class	Compulsory for Information Systems' students, elective for others.
Time/duration	2 semesters / 1 semester (depending on the cluster)
FB use Optional/compulsory	Supposed to be compulsory, but students weren't motivated much
Graded	+2% extra for those who participated
Number of class students	850 (divided in 3 clusters)
Number of participants	165 students + 3 instructors
Percentage	19.4%
Regular participation	Low participation...
Age (mean)	[1 st year students]
Previous student XP with FB	Not all
Other e-Learning tools used in parallel	
Student survey	in-depth semi-structured interviews with 46 students and 3 instructors
Students' previous familiarity with each other	Not all.
FB privacy advice given to students	Some introductory lectures that also involved information about the risks of overdisclosure, privacy settings, appropriate communication.
In-class / on-line	There were regular lectures held in class
Instructor made a "teacher-only" profile	No
Students made new profiles	No
Comments irrelevant to course	Students used the space to socialise in addition to inquiring about academic matters. Some students hijacked the space for impressionist behaviours. The absence of specific academic tasks in-built into the technical architecture of Facebook posed challenges of the capacity of the space to recruit and focus academic behaviour among participants and elimination of off-the-task behaviour.
Instructor's role & presence	A course convener offered limited administrative support. The educator assumed the online course instructor's role of addressing academic queries and questions students asked during the normal working hours (8h00 - 16h30).
Research methods	ethnographic case study approach using Cultural Historical Activity Theory (CHAT)
Reason for using FB	To explore the possibilities for pedagogical change & innovation. To explore how FB can impact pedagogical strategy and student learning in authentic learning contexts. To develop an Information Sharing Pedagogy based on learners' social networking environment. To explore the role of FB as an Informing Network. To uncover tensions between the informality and identities of learners in FB environments, and the educators' conceptions of academic uses of FB. To create a shared educational, communicative and informing space for developing understanding of theoretical and practical issues in a specific discipline. Facebook also served as an interactional space for negotiation of meaning of academic concepts and academic networking. Educators' object of appropriating Facebook was informed by the multiplier effect of networked interaction. Uncooperative students' discernment of their peers' academic engagement was deemed to

	vicariously spur their voluntary involvement.
How FB was used	Students consulted with the educator on theory, practical, and course administration issues. To share academic information, examples and study issues, and also to contact and question the educators.
FB tools that were used	Wall, discussion board, private messages to the administrator's inbox
Participants	Lecturer, course convener & students
Postings / participant	154 wall posts, 121 discussion board posts, and 139 posts to the administrator's inbox
Problems faced/possible issues to consider	Registration to Facebook is a learner's decision. Challenges of redundant postings, limitations of collective responsibility, subtle negotiations of power between educators and learners, and confusion of roles among novice learners. The preference for private communication was problematic for academics driven by networked knowledge production as it violated the principle of public contribution to knowledge for peers' benefit (that is, through public spaces). It was envisaged that the benefits of academic networking would spill over to all peers thus generating a compact networked community. In practice, the limited peer-based networking suggests that academics had not sufficiently rationalised a pedagogical strategy on networked learning. The principal informer was overwhelmed by the manifold of questions that limited her ability to address them without the support of colleagues who co-taught the course The concerns about privacy seemed to supersede the academic worthiness of the space for unsophisticated students, who perceived this space as a potential threat to personal freedom and social existence. Incidences of repetitive or related questions constrained the instructor's capacity to respond given the volume of questions. Some students who were already on FB resisted its academic usage.
Comparison with other e-Learning tool	Unlike discussion forums that are usually accessed via the LMS, FB is accessed anywhere, anytime by students from their mobile phones.
Results, Findings and benefits that were observed	An Information Sharing Pedagogy of an informing network balances demands for academic networking, protection of identity of agents, and safeguards learning interests and expectations of less confident, academically challenged learners. It bolstered shy students' confidence to seek information from the educator on academic matters, which was occasionally frustrated in class (the class size con-strained direct questioning behaviour). As time progressed, the interaction allowed shy students to discern that they were not the only ones with comprehension problems and, therefore, triggered their improved participation. Students echoed perceivably flippant considerations like pragmatic functionality of the informing system (quick communication, instances of synchronicity), visibility of online participants (social presence of peers or informers) and possibility for self expression in a "safe and user-friendly space." The unintended consequence of Facebook was that it modelled and accentuated timid students' information seeking behaviour as they were anonymous (in Facebook in-box communication) or thought they were (in Facebook public space) An educator said that Facebook made their work easier, because dealing with so many students one-on-one could take long. Educators refer to FB and say that question has been answered there. For academics, Facebook is an open, easy and quick channel of communication with all students. Students can network amongst each other, as students provide responses on content and source to peers.
Suggestions	The pedagogical use of Facebook would allow academics to eliminate and transcend the sense of alienation and academic powerlessness that

	<p>pervade unprepared students.</p> <p>There was need for a programme or software for searching frequently asked queries related to what students have asked. Students can search if their question has been asked before so as to reduce the number of redundant questions.</p> <p>Creation of sub-groups dealing with different aspects on Facebook like practicals, exams, conceptual issues. Educators do not have time to answer every kind of question. The workload was too much on the instructor.</p> <p>A mission statement on the Facebook group home page to spell out in detail the educators' goals and expectations of students and the roles and obligations of educators and students as well as ground rules for appropriate behaviour.</p>
Was it repeated?	In the following year FB was used for issues such as announcing scholarship opportunities, internship and career development programmes.

(14) van Rooyen, I.J., & Pieterse, V. (2010). Differences in educational value of formal and informal discussion forums. Southern African Computer Lecturers' Association (SACLA) '10 3–5 June 2010, Pretoria	
Tool	1. ODF that resembles FB discussions (formal) 2. FB group started by students (informal) “COS130/132”, open
Class name	1. Formal ODF: COS 130 (introduction to programming using C++) 2. Informal ODF: COS 110 (advanced data structures and algorithms using C++) and COS 121 (program modelling and design)
Faculty	Computer Science Department
University	University of Pretoria, South Africa
Level	1 st year
Elective/compulsory class	compulsory
Time/duration	Formal 2/2010 for 1 semester, Informal 8/2009 on-going
FB use Optional/compulsory	The formal ODF was compulsory. The FB ODF was voluntary
Graded	The formal ODF was graded 5% of the total mark
Number of class students	Formal: 82 Informal: 273
Number of participants	Formal: 33 Informal: 63
Percentage	Formal 40% Informal 23%
Regular participation	Formal 40% of the class, informal 52% of the ones who joined the group
Age (mean)	19-21.5
Previous student XP with FB	Formal: FB not used Informal: had to be
Other e-Learning tools used in parallel	One of these forums is an informal forum that was created by students for themselves on Facebook, while the other is the formal forum on the module webpage that was created by the teaching staff for the students
Student survey	no
Students' previous familiarity with each other	yes
FB privacy advice given to students	Students used FB on their own initiative
In-class / on-line	These were in-class taught modules
Instructor made a “teacher-only” profile	Did not participate in the student forum
Students made new profiles	no
Comments irrelevant to course	The informal forum had some irrelevant posts (about other groups). In the formal forum non-conforming posts would be removed.
Instructor's role & presence	Only in the formal ODF. There were 3 administrators. Reduced their presence as students started answering each other's questions.
Research methods	Interpretive paradigm. The researchers wanted to monitor whether a difference in educational value can be observed. A snapshot of all the messages that was posted on both the discussion forums at that time and considered them as our data source. All the posts were analysed and classified and their educational value was rated.
Purpose of case study	To evaluate the posts that were made by students on two different discussion forums in terms of their educational value and contribution to the collaborative learning of the students who participated. To discern whether or not starting a formal discussion board for students is necessary, since students already created one for themselves (so as to make decisions that will minimise lecturer effort and maximise educational impact). In the face of the hard work required to manage a successful discussion forum for students, an investigation was needed to determine if the effort is really needed. To examine if the formal ODF duplicates work that the students are doing for themselves anyway.
Reason why FB was used by the students	To help each other with specific problems, but also to share resources like tutorials and tools they could use to code C++ on their home

	<p>computers.</p> <p>Students needed more help and advice for preparing for the practical assessments for both of these subjects.</p>
FB tools that were used	Students posted on the group's wall (posts appear in chronological order), and discussions forum.
Participants	Formal: instructor & students Informal: students
Postings / participant	3 discussion topics (with 5, 5 and 3 posts under each) Informal: of those who joined, 52% were active with an average of 1.23 posts per person
Problems faced/possible issues to consider	In the informal group there were not always answers to questions. As participation was low, students didn't see the point in participating. In an informal group, students may post solutions to assignments, thus leading to plagiarism. This was not observed though.
Comparison with other e-Learning tool	Lower frequency of posts compared to the formal ODF (42 vs. 120) This may be due to the compulsory nature of the formal ODF. In the formal ODF student answers were more concise and clear. More questions were answered. This allowed tutors to minimize their presence. Care was taken to keep the formal ODF well organized, whereas the informal group was disorganized with unsorted answers. In the formal ODF students knew that their questions would be answered, and most likely by an expert.
Results, Findings and benefits that were observed	<p>3 topics were posted in the FB group and they were all relevant to the class. They contained useful information and links with relevant tutorials, which had great educational value and encouraged students to do and explore more.</p> <p>Participants conformed to basic netiquette</p> <p>Equal frequency of posts with low and high academic value</p> <p>The technical topics were of great value.</p> <p>Students felt more comfortable asking questions.</p> <p>Solutions to assignments were posted, but only after the deadline.</p> <p>Many questions regarding practical assignments and projects went unanswered.</p> <p>Technical advice was given.</p> <p>Some students used it to complain.</p> <p>Due to the large amount of class students, the informal ODF may have contributed more to the creation of a community feeling among students.</p> <p>The educational value of a forum is mostly dependent on good administration.</p> <p>The researchers conclude that formal ODFs have greater educational value than informal ODFs.</p>
Suggestions	Formal forums have greater educational value. This was attributed to the application of some of the strategies described in the paper. The educational value of a forum is mostly dependent on good administration.
Was FB used again?	A FB group was created where the instructor participated, but it was maintained and controlled by the students. The result showed that the presence of the instructor didn't influence the quality of the content (i.e. it was similar to the informal forum described above). However, this forum was not actually a Formal Forum, despite the presence of the instructor (e.g. not assessed, not organized by the university, not required to participate).

(15) Schroeder, J., & Greenbowe, T. (2009). The chemistry of Facebook: Using social networking to create an online community for the organic chemistry laboratory. <i>Innovate: Journal of Online Education</i> , 5(4)	
Tool	Facebook group "Chemistry 231L", closed
Class name	Introductory organic chemistry laboratory
Faculty	
University	Iowa State University, USA
Level	From 2 nd to 4 th
Elective/compulsory class	Compulsory
Time/duration	Fall 2007, 1 semester
FB use Optional/compulsory	Optional
Graded	No
Number of class students	128
Number of participants	52
Percentage	41%
Regular participation	yes
Age (mean)	19-21
Previous student XP with FB	yes
Other e-Learning tools used in parallel	WebCT with bulletin board and chat facility. Grades and course announcements were posted on WebCT. The tool that students used most frequently was WebLinks (a collection of instructor-supplied links). The second reason students logged on to WebCT was to check their grades. The discussion feature came 4 th , with only 58seconds average use. Students stopped using discussions on WebCT in September (maybe due to receiving minimal feedback). In total 8 discussion topics emerged generating a total of 17 posts.
Student survey	no
Students' previous familiarity with each other	Some yes, some not.
FB privacy advice given to students	No, because students were already familiar with FB. The instructor explained he wouldn't "Friend" any of them, so wouldn't check their personal profiles.
In-class / on-line	3 hours/week laboratory class + 1 hour/week help session with teaching assistants
Instructor made a "teacher-only" profile	No
Students made new profiles	No
Comments irrelevant to course	No
Instructor's role & presence	Instructor served only as a moderator. Posted photos and relevant links. Suggested answers to some questions.
Reason for using FB	The researchers were concerned with low participation in their course. The interaction between students was minimal. In light of the much higher and more dynamic participation in social networking sites by members of the Iowa State University community, a course-related Facebook group seemed a viable alternative virtual environment through which students could communicate and interact. There was evidence that FB may provide an alternative environment to facilitate student communication about coursework. To see if students would discuss chemical concepts outside regular class time in a Facebook group more frequently than in WebCT.
Way FB was used	The FB group was used as a communication platform. As a supplementary tool for communication & discussion outside class. It was promoted as a community where students could discuss questions with one another, the laboratory instructor, the teaching assistants and the project librarian. The group was to serve as a place where students could compare results of their work with each other in order to identify trends in their data and

	<p>to generate more precise results. Members could post interesting relevant links.</p>
FB tools used	Discussion forum, wall, links, photos.
Participants	Instructor, teaching assistant, project librarian and students.
Postings/participant	There were 20 discussion topics and a total of 67 posts
Problems faced/possible issues to consider	Students said they didn't want to join a group moderated by their professor.
Comparison with other e-Learning tool	<p>Previous instructors had encouraged students to use WebCT, yet the students used it rarely.</p> <p>The content-first nature of WebCT, which structures interactions around the course, the textbook, or the instructor, seems to discourage students from using the platform to communicate and interact.</p> <p>Students used WebCT until September, whereas the Facebook group communication patterns were more complex. When an assignment was due in short order, students frequently used Facebook to communicate.</p> <p>Students used Facebook more frequently and more dynamically than WebCT.</p> <p>None of the students who posted in Facebook posted in WebCT and the reverse was also true.</p> <p>The instructor observed a 400% increase in participation compared to what they had seen in WebCT.</p>
Results, Findings and benefits that were observed	<p>The ability to upload photos proved very useful to complement associated text.</p> <p>A student posted a question and got a reply from another student 38 minutes later, showing that it was a very fast way to communicate.</p> <p>Students never used the Facebook discussion board to appeal for answers to assignments, but only to ask for assistance. Students did not give direct answers in their replies to their classmates, but explained how they were approaching the problem and offered suggestions.</p> <p>There was an increase in student communication and participation outside of the class, something that was very much lacking before the Facebook group.</p> <p>There was a dramatic increase in the students' interaction.</p> <p>The students didn't use it as a platform to share answers.</p> <p>Students seemed really trying to help each other.</p>
Suggestions	<p>The instructor didn't become Friends with the students.</p> <p>A more thorough study exploring the value of Facebook as a venue for academic discussion.</p> <p>Further research how FB or other SNSs can be used as a discussion board or bulletin board to post announcements.</p> <p>Explore Facebook groups as a supplement to face-to-face classroom instruction.</p> <p>Investigate why 59% of students didn't join FB.</p> <p>The researchers didn't explore the reasons why 59% of the students didn't join the FB group, but suggest that students might:</p> <ul style="list-style-type: none"> -not feel comfortable using Facebook for class -not be Facebook members. -forgot / did not want to bother with the enrolment process -didn't want to devote extra time to another ODF. <p>The researchers believe that students were already accessing Facebook for personal use and checked in on the group when they accessed Facebook for other reasons.</p> <p>The academic impact of using Facebook needs to be explored.</p> <p>Various participation measures, such as frequency of postings, could be tracked and correlated to student performance on both laboratory reports and exams.</p> <p>Student reactions and opinions could be collected as part of end-of-course evaluations.</p>
Was it repeated?	<p>Yes, in the following semester, with similar results.</p> <p>Then the lecturer changed workplace, and when contacted said he didn't try it again, but intends to.</p>

(16a) Skiba, D. (2010). Nursing Education 2.0: Social Networking and the WOTY. Nursing Education Perspectives 31 (1), 44-46	
(16b) Sherrill, K., & Breed, D. (2010). Strategies for Nurse Educators. Official Newsletter of the Academy of Medical-Surgical Nurses, 19(5), 21-23, September/October 2010	
Tool	FB profile (open)
Class name	Maricopa Nursing Laboratory
Faculty	
University	Mesa Community College, Phoenix, Arizona, USA.
Level	Students of various levels use the lab
Elective/compulsory class	
Time/duration	Indefinite, started in 2009
FB use Optional/compulsory	optional
Graded	no
Number of class students	250 new students every semester
Number of participants	792 Friends (December 7 th , 2011) not restricted to current students
Percentage	
Regular participation	
Age (mean)	
Previous student XP with FB	Only FB members have access to the page
Other e-Learning tools used in parallel	
Student survey	
Students' previous familiarity with each other	
FB privacy advice given to students	
In-class / on-line	Taught course (lab)
Instructor made a "teacher-only" profile	"yes"
Students made new profiles	no
Comments irrelevant to course	There are often jokes where students also share, this creates a friendly atmosphere
Instructor's role & presence	Active but students do not perceive Stella as faculty member! Provides interesting links, encouragement, course information, asks questions to start discussions, guides discussion. [it is probably time-consuming for the instructors]
Reason for using FB	To create a community where instructors can interact with students and to facilitate learning.
How FB was used	FB profile of "Stella Bellman", the nursing class manikin Stella, posts on her wall one to two times a week, announcing upcoming department events and posing NCLEX-style questions for students to discuss (faculty guide the discussion by posting and directing students' comments). She congratulates graduates, welcomes new students, provides encouragement on test days, and more. Friends of Stella (i.e., students) use it to post books for sale and offer tutoring service, while alumni friends share support for current students
FB tools used	Wall, links, videos, pictures
participants	2 instructors, course secretary and students Outsiders who may be interested can request to "Friend" Stella.
Postings / participant	"Stella" posts about twice/week.
Problems faced/possible issues to consider	It may be time consuming for the instructors to maintain the profile. Approx. 1h/week.
Comparison with other e-Learning tool	FB connects current students with alumni. If the course management system for the college was used, students could have access only during a particular course; once the course ended or after they graduated, they would no longer have access.
Results, Findings and benefits	Humanizing the manikin teaches students to be more cognizant of the

that were observed	<p>lives they were responsible for as well as teaching them how to practice ethical and moral behaviours as a nursing student.</p> <p>Students were already on Facebook. Students were more likely to engage in a Facebook page than follow a separate blog site.</p> <p>Within her first two days on Facebook Stella had more than 100 friends.</p> <p>Facebook allowed the creation of a cyberhallway for the learning lab. It's a great way to interact with students in a fun, nonthreatening way. Students will spend hours on Facebook, because they think they are playing, not studying.</p> <p>It is time consuming to maintain, but fun...and free.</p> <p>Stella has brought instructors a new level of understanding of the student psyche. The faculty were able to recognize the distress a student had when she had to repeat a semester. Now, there was wonderful encouragement from the Facebook family.</p> <p>Stella can create the icebreaker all classes need to start the collaboration process. She throws the party that brings students and faculty together.</p> <p>Graduates and alumni send Stella updates about their employment status and network with current students in the program through Stella it connects current students with alumni</p>
Suggestions	
Was it repeated?	It is on-going and active.

(17) Alice Szwelnik, BMAF Project Report: Embracing the Web 2.0 Culture in Business Education – The New Face of Facebook, 2008.	
Tool	Facebook group
Class name	Business in Context
Faculty	
University	Oxford Brookes, UK
Level	
Elective/compulsory class	
Time/duration	2007-2008, 1 semester
FB use Optional/compulsory	voluntary
Graded	no
Number of class students	
Number of participants	
Percentage	60%
Regular participation	Depending on the activity
Age (mean)	
Previous student XP with FB	For the majority of students
Other e-Learning tools used in parallel	teaching material, academic guidance and support with coursework was also available outside of Facebook, so students who decide not to join Facebook were not disadvantaged
Student survey	Semi-structured interviews with 12 participants by an independent researcher
Students' previous familiarity with each other	Not everyone knew each other
FB privacy advice given to students	
In-class / on-line	Taught course
Instructor made a "teacher-only" profile	
Students made new profiles	
Comments irrelevant to course	
Instructor's role & presence	facilitated different activities on Facebook to create 'social learning space'
Research methods	action research, The data has been analysed using Miles and Huberman (1994) approach where they break down the analysis into tree stages: data reduction, data display and conclusion drawing
Reasons to use FB	Design and test different on-line activities on Facebook to enhance student learning Evaluate the appropriateness and effectiveness of using Facebook in education Explore students' views on perceptions of 'public space' (university, formal, eg. WebCT) and 'private space' (social, informal, eg. FB) To explore to what extent educators could use Facebook as an effective platform for communication with students supporting their learning
How FB was used	'picture competition', on-line discussions, support regarding assessment, encouragement and academic guidelines
FB tools used	Wall, private messages to lecturer, links, videos
Participants	Instructor, students
Postings / participant	15 students participated in the 'Picture competition'
Problems faced/possible issues to consider	Some students might not want to be on FB. There were privacy concerns. They didn't want other people in the group to see their personal information. Some students might prefer to be anonymous, for fear of being judged. Students were also concerned of being judged by lecturers from their photos. Some students saw it as an invasion of their private life. Some felt that Facebook use was imposing more homework in a place they meant to be social. There was a consensus that students keep their social space separate from education

Comparison with other e-Learning tool	<p>Students used it more than WebCT.</p> <p>Because not many students use WebCT, students have no incentive to visit it, whereas they are on FB anyway.</p> <p>WebCT is more appropriate for those who haven't got a FB account.</p> <p>WebCT is better for separation social – university life.</p>
Results, Findings and benefits that were observed	<p>Only few students engaged in the on-line discussion on generation X and Y initiated by the module leader.</p> <p>All students expressed both positive and negative comments regarding use of Facebook in education.</p> <p>The positive comments related to convenience, easy access, friendly environment, quick communication, and features like photo/video links and other applications.</p> <p>Negative comments were related to privacy, security, invasion by university and desire for separation of personal from formal space.</p> <p>There is no clear formula of using Facebook in education.</p> <p>There is some potential in using Facebook in education as 60% of students joined, on voluntary basis</p>
Suggestions	<p>Some students expressed a need to use one official university-approved technology for all modules.</p> <p>More extensive research is required to evaluate potential use of Facebook in the educational context.</p>
Was it repeated?	Unknown.

(18) Wang Q., Woo H.L., Quek C.L., Yang Y. & Liu M. (2011). Using the Facebook group as a learning management system: An exploratory study. <i>British Journal of Educational Technology</i>	
Tool	One FB group (first it was open, so students could see it, and when they all joined, so the class could start, it became closed)
Class name	[teacher education]
Faculty	Academic Group of Learning Sciences and Technologies
University	National Institute of Education, Singapore.
Level	1. Master degree 2. Undergraduate (various levels)
Elective/compulsory class	Elective
Time/duration	One semester, 2010
FB use Optional/compulsory	compulsory
Graded	no
Number of class students	1. 16 2. 15
Number of participants	All
Percentage	100%
Regular participation	yes
Age (mean)	1. 24-55 2. 20-23
Previous student XP with FB	Yes. (only 2 Masters students didn't have an account)
Other e-Learning tools used in parallel	No.
Student survey	Yes, online, a link for it appeared on the FB group Wall. It included 15 items (Likert 5-point) & an open-ended question. 14 participants from each class answered it
Students' previous familiarity with each other	The undergraduates knew each other already, whereas for the graduates it helped them get to know each other.
FB privacy advice given to students	no
In-class / on-line	1. 13 sessions (10 face-to-face and 3 on-line) 2. 12 sessions (9 face-to-face and 3 on-line)
Instructor made a "teacher-only" profile	no
Students made new profiles	no
Comments irrelevant to course	
Instructor's role & presence	Active
Reason of using FB	To explore the use of a FB group as LMS and the students perceptions of using it To overcome the limitations of commercial LMSs.
How FB was used	As a LMS in two courses for putting up announcements, sharing resources, organizing weekly tutorials and online discussion. The Wall was used to disseminate 'just-in-time' information Announcements could have links, pictures and videos. Participants could share resources and get feedback from others When a discussion topic was started (in the 'discussions') it also appeared on the wall. The 'Event' function of the group was used to organize weekly course material: weekly material was uploaded to the event. A profile picture of the event was chosen to represent the topic of that session. Access to the event was 'open' so students could access it without sending a request (was this because they were not Friends?). Whenever an event was created, this was automatically announced on the group wall. Student participation to the event was kept automatically so the tutor didn't have to monitor attendance. Two methods of online discussion were used: the feedback space under the event function and the 'discussions'. A spreadsheet (using Google docs) was used by the Masters students to choose their preferred timeslots for oral presentations.

	A survey for getting feedback on the course was done and the link for it was posted on the group wall.
FB tools used	Wall, Discussion forum, Events, pictures, videos
Participants	Instructor & students
Postings / participant	
Problems faced/possible issues to consider	<p>FB didn't support the sharing of pdf, ppt, or text files, so another application (Google docs) was used instead (a link to these files was posted on the group).</p> <p>The institution had blocked some features, so the students faced technical problems when using FB from university.</p> <p>The system didn't support threaded discussions (so students had to specify who they were replying to).</p> <p>Some students (esp. Masters) thought it interfered with their personal life on FB, because their real-life Friends could see the education-related posts. They didn't want their Friends to know what they were doing in the course.</p> <p>The discussions had the shortcoming of adding a post at the end so students had to specify which previous post their comment referred to.</p> <p>Some students didn't use real profile pictures, so it was not helping to get to know each other...</p> <p>Non-registrants could join the 'course events'.</p> <p>It was troublesome for the tutor to add teaching materials (Google docs)</p>
Comparison with other e-Learning tool	<p>The researchers believe that commercial LMSs have some constrains.</p> <p>Using FB groups is cheaper than commercial LMSs.</p> <p>The resources of LMS are not accessible to students after their graduation.</p>
Results, Findings and benefits that were observed	<p>Students were basically satisfied with the affordances of FB.</p> <p>The fundamental functions of LMS could be implemented on FB.</p> <p>Younger students found it more acceptable.</p> <p>FB can be used as LMS because it has social, pedagogical and technological affordances.</p> <p>There are some limitations:</p> <p>It did not support files to be uploaded directly.</p> <p>The discussion was not organized in a threaded structure.</p> <p>Students didn't feel safe regarding their privacy.</p> <p>Most of the Masters students didn't become Friends with classmates.</p> <p>More of the undergraduates 'friended' each other.</p> <p>Most students didn't feel a close social relationship created through the group. This may be related to the fact that they didn't become Friends and that some people didn't use their real photographs (comment by a Masters student).</p> <p>Especially the older (Masters) students didn't perceive it as safe.</p>
Suggestions	<p>FB can be used as LMS (substitute or supplement), especially if the educational institute requires a cost-effective solution.</p> <p>It is more appropriate for younger students.</p> <p>Teachers and students do not have to be Friends on FB.</p> <p>Third-party applications are needed to extend the capability of FB groups to act as a LMS.</p> <p>Students must feel safe, secure and comfortable when using socially enabled environments.</p> <p>Future research could compare students' learning effectiveness using FB as a LMS with using a commercial LMS in a solely online setting.</p> <p>The strong social connectivity of FB is a double-edged sword. It enables students to easily communicate and interact with peers and the teacher. However it fails to provide a safe environment as students' perceived privacy is decreased.</p> <p>If students use new accounts, created especially for learning, this may lead to the loss of social dynamism and a compromise of the sustainability that makes Facebook popular.</p>
Was it repeated?	No. A lot of constraints. Another tool was used in the following year and proved to be better.

(19) White, J., (2009). The use of Facebook to improve motivation and academic writing. Proceedings of the third international wireless ready symposium	
Tool	Facebook group, secret
Class name	English language course for students of the tourism industry
Faculty	tourism
University	Ritsumeikan University, Japan
Level	1st year
Elective/compulsory class	compulsory
Time/duration	5 weeks, 2008
FB use Optional/compulsory	voluntary
Graded	no
Number of class students	19
Number of participants	9
Percentage	47%
Regular participation	1/9 never participated, 2/9 only participated in the 1 st week. In the last week there were only 3 entries.
Age (mean)	18-25
Previous student XP with FB	Only 1 of the students
Other e-Learning tools used in parallel	No. There weren't any.
Student survey	interview
Students' previous familiarity with each other	Yes.
FB privacy advice given to students	Yes, in the 1 st lecture before starting to use FB.
In-class / on-line	Classes once per week
Instructor made a "teacher-only" profile	no
Students made new profiles	no
Comments irrelevant to course	Yes, but that was ok ☺
Instructor's role & presence	Active role providing feedback to student answers
Reason for using FB	To examine how Facebook can be used to enhance the motivational level of Japanese students, learning English, who are more familiar with the traditional grammar translation method. Improving language skills
Way FB was used	As a homework activity. A question was provided for discussion every week for five weeks and individual feedback was given with the goal of improving their writing skills. When grammatical problems common to all students occurred general feedback to all group members was posted on the group wall. Posting common mistakes on the discussion board was effective in reducing mistakes. (at the time Facebook didn't include a spell-checker)
FB tools used	Discussion board, private messages
Participants	Instructor + 9 students Participation decreased with time: In week one 7 students posted, in week two it was 6, week three 6, week four 5, and week five only 3.
Postings / participant	27/8 = 3.375 items of homework posted per participant (not taking into account possible comments that followed).
Problems faced/possible issues to consider	Students felt embarrassed to be the first to answer on the group page, in case they did not fully understand the question and they were worried their response would be a polar opposite to that of their peers. This was solved by posting a model answer to the question up first for students to look at and follow. Students were concerned about the privacy of their information and posts. The group was made secret so that nobody except group members had access to the page. Although the Facebook group was set up as a discussion group with the

	<p>desire of creating multilevel interaction, most students were reluctant to comment on other students work.</p> <p>There was low participation rate as students would need to do more work if they participated (and would not get extra marks).</p> <p>The 5 week time frame was too short to provide accurate results and be more beneficial.</p>
Comparison with other e-Learning tool	
Results, Findings and benefits that were observed	<p>There was an opportunity for multi-level interaction with the teacher and each other.</p> <p>Students were able to receive instant feedback and they enjoyed that (they didn't have to wait for the next class to submit their homework and then wait another week for feedback).</p> <p>Using Facebook as a homework activity increased the amount of homework submitted, reduced the level of mistakes and increased the level of effort of the students.</p> <p>Posting common mistakes on the discussion board was effective in reducing mistakes.</p> <p>Students became more motivated in terms of in-class discussion and offered opinions in ways that were atypical for this level of learner.</p> <p>The students talked about the questions in class with teachers and tried to gain the opinions of other teachers outside of class, which shows that there was increased involvement.</p> <p>Students began their own group e-mail to each other (the paper doesn't explain what for)</p>
Suggestions	The duration of the group should be indefinite.
Was it repeated?	No, because the lecturer changed university.

A.2 Case Studies - additional tables

Reasons for using FB in class (Expectations/Expected Benefits) Case Study

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Sum
To support/enhance students' learning	x	x		x			x	x				x		x	x	x	x		x	11
As an 'experiment' to explore its potential in higher education and students' perceptions/satisfaction		x	x	x	x	x	x	x	x	x	x	x	x		x		x	x		15
Because students were using it already	x		x		x	x	x			x	x	x	x	x	x	x	x	x		14
To engage/ motivate students	x		x			x	x				x	x	x		x	x			x	10
To provide an additional place for learning & interaction, complement the classroom	x		x		x	x		x				x			x	x				8
To support participative learning in a constructivist way				x				x				x					x			4
To enhance communication, debate, discussion		x		x	x	x		x		x	x	x	x		x			x		11
To get to know each other better			x								x	x								3
To use it as CMS/LMS									x	x								x		3
To connect students on practicum for emotional and practical support					x															
To form a 'community of practice'												x				x				3
To encourage collaborative work			x									x								2
To encourage knowledge-sharing			x					x				x	x	x	x		x			7

How FB was used (to do what)

Case Study

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Sum
For students to ask questions about the subject on things they didn't understand	x	x					x			x		x	x	x			x			8
For students to ask for help/advice on assignments, solving problems, etc.			x		x					x		x	x	x	x					7
To continue in-class discussion or to discuss the material, their thoughts about it, etc.		x		x		x		x	x						x		x		x	8
For students to share information, resources, links, other material				x			x		x			x	x	x				x		7
For the instructor to provide links, material, etc.			x							x					x	x	x	x		6
For a specific assignment that had to be posted on FB (regularly or not) & commented on (or not) by other students						x	x				x	x					x		x	6
To make announcements/ to get information about deadlines, announcements, etc.			x							x			x			x		x		5
For students to share experiences					x		x	x				x		x						5
To practice on the material (e.g. quizzes, questions)	x		x									x							x	4
To get feedback from others				x		x						x			x			x		5
To submit coursework										x										1
To collaborate on assignments												x								1
To take class attendance (photos & tagging)												x						x		2
For encouragement (psychological reasons)					x									x		x				3
Organizational purposes	x									x								x		3
To complain														x						1
To offer solutions to assignments (after the deadline)														x						1

FB tools that were used

Case Study

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Sum	
Discussion forum (no longer available)	X		X	X	X	X	X	X		X		X	X	X	X			X	X		14
Discussions (not specifying forum on wall)		X							X												2
Wall	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X		17
Photos			X		X	X	X	X			X	X			X	X		X			10
Videos			X		X							X				X	X	X			6
Links			X	X		X	X							X	X	X	X	X			9
Quizzes	X		X									X									3
Events						X					X							X			3
Live chat										X											1
Private message										X		X	X				X		X		5
Tagging												X									1
Notes			X																		1
Other apps (FB)			X																		1
External apps						X				X								X			3

Benefit (observed & reported)

Case Study

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Sum
Easy, convenient communication					x	x		x		x	x	x	x		x	x	x	x		11
Quick communication					x					x			x		x		x	x		6
It is free to use																x		x		2
A way to communicate with all the students					x	x				x			x	x		x	x	x		8
Student-centred (more student-talking-time)				x					x											2
It became a repository of student-generated data								x						x						2
The profile photos improved communication										x			x							2
Used it by mobile phone			x										x							2
Answers are saved so students can look them up									x				x							2
Helps students develop relations with each other			x	x	x	x					x	x	x		x	x	x			10
Collaboration between students		x		x			x		x			x			x					6
Students "Friended" each other											x							x		2
Students and faculty got to know each other better			x													x				2
Knowledge was constructed (constructivist theory)				x				x	x			x								4
It helped to think about class between meetings						x		x												2
Increased participation / motivation (more / better than in class) was motivating		x		x		x	x		x	x		x			x	x			x	10
Students learnt				x		x								x		x			x	5
Students did independent research				x		x	x					x		x						5
Students exhibited critical thinking				x		x	x				x			x					x	6
It was easier for shy ones to ask						x					x		x	x						4
Discussion /				x	x	x		x		x	x	x			x		x		x	10

interaction was promoted																				
Conversation moved from FB into class						x		x											x	3
Conversation moved from class to FB		x				x		x			x									4
Students received encouragement / support				x	x						x			x			x			5
Students could communicate with alumni	x		x									x					x			4
Instant/Quick feedback	x												x			x			x	5
Practice for exams	x		x																	2
Help with problem-solving					x		x						x	x						5

Problems/Issues

Case Study

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Sum
Privacy				x						x			x		x		x	x	x	7
Impossible to upload/download pdf, etc.				x				x		x								x		4
Shy students didn't feel confident to post, not wanting to be judged by teachers/students				x									x				x		x	4
Annoying/irrelevant posts (some humour is ok)				x									x	x						3
Being misled by incorrect statements made by other students				x								x								2
Distraction from other things on FB				x				x												2
No feedback/answer to all posts/questions				x									x	x						3
Lack of notifications when someone posted						x	x	x												3
No access from some countries/workplaces				x	x													x		3
Inconvenient for instructors, time consuming, too much workload										x			x			x		x		4
Can't force students to register to FB if they don't want to										x			x				x			3
It is difficult for instructors to let go of the control		x																		1
Intruders (outsiders)		x																		1
Older learners may find it difficult				x														x		2
Can't be used as a comprehensive tool, so students would check with university LMS too. That is time-consuming						x														1
Lack of flexibility, no customization/personalisation							x				x									2
Participation=extra work, students may not participate							x												x	2
FB is not owned by the university, so it may make changes that will affect the class activity							x													1
Too short duration (5 weeks)							x													1
FB comments can cause legal problems								x												1
Need to use additional applications for using it as CMS										x									x	2
Repetitive questions													x							1
Many students sent private message to instructor (so other students couldn't benefit and it would be repetitive)													x							1
It felt like imposing													x				x			2

homework in a social place																				
No threaded discussions, students had to specify to whom they were replying															x				x	2
Outsiders could also join 'Events' (privacy?)																			x	1
Some students didn't use real pictures				x															x	2
Not good for maintenance of records, grading, uploading				x		x				x	x								x	5

Students found that using FB

Case Study

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Sum
Was useful	X			X		X		X			X	X		X			X	X		9
Helped them learn	X			X		X						X								4
They enjoyed it	X			X			X		X		X	X				X			X	8
It helped them to get to know their classmates				X							X	X							X	4
It helped them to get to know their professors	X																			1
Was easier to participate than in class						X					X		X							3
Was convenient (24/7)				X		X					X	X			X		X		X	7
Provided quick/instant communication													X		X		X		X	4
Would recommend it for other classes	X																			1
Thought that the instructor should be more involved				X			X													2

A.3 Screenshots of the FB group ‘Experimenting with Facebook as an Academic Tool’

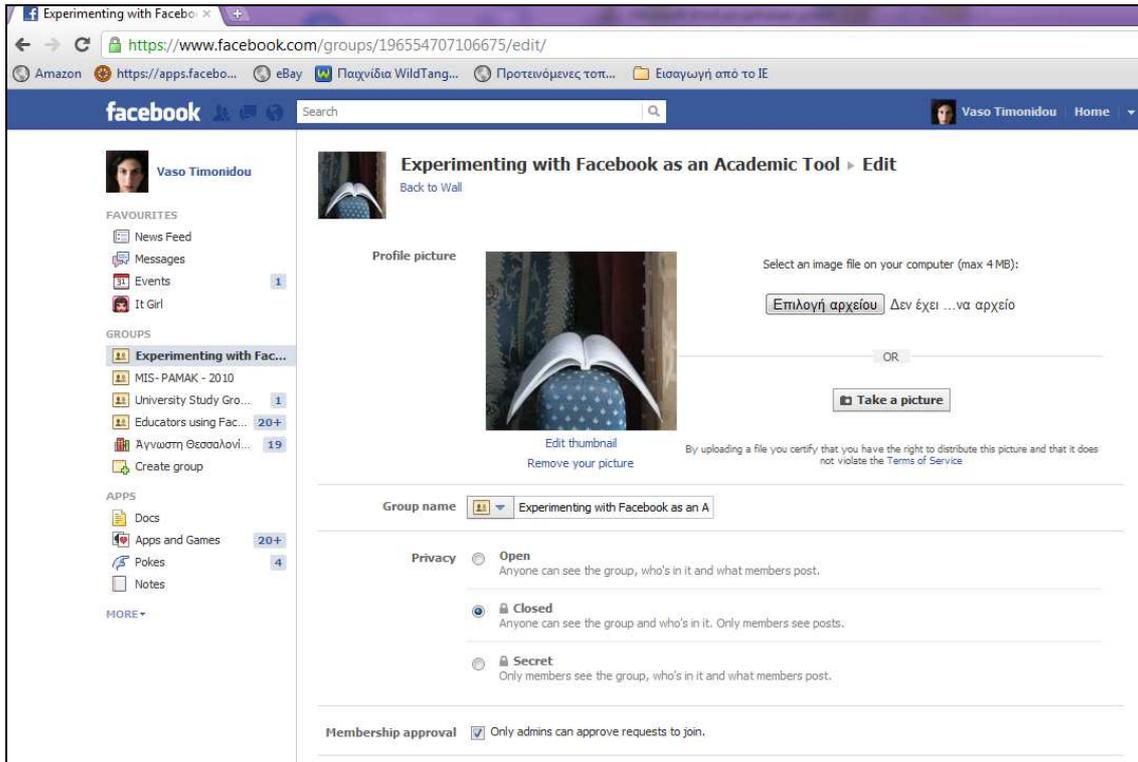


Figure 2: Editing the Facebook group settings



Figure 3: Conversation on the FB group Wall and the ‘mission statement’ (right)



Figure 4: FB group Wall conversation & adding new members

Appendix B: Interviews

B.1 Interview Questions for the Project Management Students

1. Age
2. Sex
3. Do you work, and if yes how many hours/week?
4. Since when have you been using the internet?
5. Do you have internet access at home/work/mobile?
6. How many hours/day do you spend on the internet?
7. Which sites do you visit?
8. How frequently do you visit Compus, and how frequently do you think your classmates do?
9. Do you find Compus useful? What do you do there?
10. How often do you check your university email?
11. How often do you check another email?
12. Are you on Facebook or any other SNS?
13. How frequently do you use Facebook/other SNS and for how long?
14. How often do you think your classmates visit Facebook and how much time do you think they spend there?
15. When did you register on Facebook?
16. Do you leave Facebook on while you are doing other things on the internet?
17. How many Facebook Friends have you got?
18. For what reasons do you use Facebook?
19. Do you use Facebook for educational reasons, and if yes, how?
20. Do you discuss class-related issues with your classmates on Facebook? If yes, how frequently?
21. Do you use Facebook for the project management class, and if yes, how?
22. How do you think Facebook could be used in the project management class or in other classes?
23. Do you think that the university could use Facebook, and if yes, how?
24. Do you use Facebook for email, links, docs?
25. Would you like to have a Facebook group for the project management class?

26. If there was one, would you like the instructor to participate or not?
27. How could the instructor use Facebook?
28. Would you rather use Facebook than Compus?
29. In what ways do you communicate with your classmates?