# What Types of Learning May Occur Through Casual Use of a Social Network Site: The Case of Facebook

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**Abstract**

Over the past decade, World Wide Web has undergone a subtle but profound shift to Web 2.0 to become more of a social web. Social network sites (SNSs) form an integral part of everyday life for a plethora of people and represent a typical paradigm of this web evolution. Yet, little is known about how casual use of SNSs is related to learning, while most studies on SNSs revolve around adolescents and emerging adults. This study aims at casting light on the types of learning through casual use of SNSs by adults who seek for learning activities. For this purpose a quantitative survey has been administered to the most active members of a Greek Facebook group, whose main goal is to share announcements among members regarding learning events. The results showed that participants integrate Facebook in their daily practice, with women and younger adults spending slightly more time on site. Participants reported that several distinctive occurrences of learning emerge through casual Facebook use and it is concluded that everyday Facebook use may help in developing multiple types of learning.

**Keywords:** learning, Facebook, social network sites, adults, Greece

Rapid development of information and communication technologies has brought changes in various technological applications, which, in turn, have had an impact on many aspects of everyday life. The latest evolution of the Web, often dubbed Web 2.0, enables individuals to take an interactive part in a website and to communicate with other people. The implications of this revolution in the Web have been significant for the way that people form, and participate in, social networks. This has resulted in the genesis of new, technology-mediated types of social networks.

Social Network Sites (SNSs) are perhaps the most socially significant Web 2.0 technology. Although all Web 2.0 applications afford participation and interaction, in SNSs social interaction and connection is the objective. In this paper the term "social networking sites" is eschewed, though it appears in public discourse regularly and it is often used interchangeably with the term "social network sites", because "networking" implies the active seeking and forging of new social connections (Boyd & Ellison, 2007). Surely, networking is possible on these sites, as in real life also, yet it is not the scope of this study to delve into that aspect of technology-mediated networks.

Currently, SNSs are being adopted rapidly by millions of users. While numerous people use SNSs, it is uncertain whether the potential of such systems have been realized. Scholars from diverse fields have examined SNSs in order to understand the practices, implications, and culture of these sites, as well as users' engagement in them (e.g., Hargittai, 2007; Manago, Graham, Greenfield, & Salimkhan, 2008; Papacharissi, 2009; Smith & Kidder, 2010; Stutzman, 2006). Nevertheless, research questions around SNS use continuously emerge. For example, what is largely missing from the research are the voices of adult users. Not surprisingly perhaps, studies on SNSs tend to revolve around teenagers or college students, leaving adult users aside. Accordingly, most studies on SNSs are on U.S. and U.K. populations; currently, there are no studies concerning Greek SNS users. What is more, empirical studies of how use of SNSs is related to learning remain a sparse field of research. Given the popularity of SNSs among adults there is surely a need for additional studies around this area. The present empirical study is meant to help fill that gap.

The goal of this study is to investigate the link between learning and casual use of SNSs by adults. In order to encompass how casual use of SNSs may facilitate learning, it is useful to

understand a great deal more about social networkers' attitudes and perceptions towards using these sites. The following questions guided this investigation:

- How do adults use SNSs?
- What are their perceptions about learning through casual use of SNSs?
- What types of learning may occur through the medium of a SNS, if any?

In order to address these questions, research was conducted within the most active members of a Facebook group with peripheral-to-learning purposes using an online survey. This group was considered appropriate for this study because its members hold an individual interest in learning. Accordingly, the focus was on Facebook as it constitutes a rich site to study the affordances of SNSs due to its heavy usage patterns and technological capacities. This paper begins by investigating the relevant theoretical and empirical literature related to technology-mediated social networks, SNSs and Facebook, learning on SNSs and, more broadly, learning on online domains. The study goes on to postulate the conceptual framework in which the research is grounded. A brief overview of the methodology is provided before reporting the findings of the research. Finally, the last section summarizes the research and discusses issues concerning the study.

**Dominance and Dynamic of Technology-mediated Social Networks**

The rise of technology-mediated social networks is heavily related to qualitative changes in web technologies, commonly described as Web 2.0, which offer people innovative and varied ways of communication. In fact, compared with earlier uses of the World Wide Web, Web 2.0 is more of a social web: the active participation of individuals leads to a more social online world. Maness (2006) emphasizes that Web 2.0 "is not a web of textual publication, but a web of multi-sensory communication. It is a matrix of dialogues, not a collection of monologues".

Web 2.0 applications are increasingly embedded in people's daily routines (Clark, Logan, Luckin, Mee, & Oliver, 2009; Lenhart, Purcell, Smith, & Zickuhr, 2010; Ofcom, 2008), and users are increasingly engaged in creating web content as well as consuming it (National School Boards Association, 2007; Lange, 2007; Lenhart & Madden, 2005), regardless of their race, ethnicities, beliefs and customs (Boyd & Ellison, 2007; Fu, Liu, & Wang, 2008). This phenomenon has been described as "a participatory culture", where "members believe their

contributions matter, and feel some degree of social connection with one another" (Jenkins, Clinton, Purushotma, Robinson, & Weigel, 2006, p.3). Finally, greater access to broadband connectivity (Ofcom, 2008) and increase of internet users in the last decade both confirm the growth in use of Web 2.0 technologies, as more people want to have easy and fast internet access, and underlie the Web 2.0 phenomenon, as there is a huge community connected through the internet.

**Background on SNSs**

Perhaps the most typical paradigm of online networks is SNSs. It is not incidental that many widely used Web 2.0 applications (e.g. YouTube, Blogspot, Flickr, etc.) integrate SNS features and structure. Accordingly, not all SNSs began as such; instead they were initiated as online applications and progressively developed to SNSs (e.g., QQ, LunarStorm, Cyworld, Skyrock, Classmates.com) (Boyd & Ellison, 2007). Applications like online multiplayer games, bulletin boards, news groups, mailing lists, and dating services were the forerunner to SNSs (Mitrano, 2006), while today's SNSs began in 1997 with the launch of SixDegrees.com (Boyd & Ellison, 2007).

Since their introduction SNSs have attracted millions of users while their worldwide prevalence and popularity have grown rapidly in recent years. Several surveys published by PEW Internet & American Life Project have shown the dominance of SNSs in online activities and that the number of SNS users is continuously escalating (Lenhart, 2009, Lenhart & Madden, 2007a, Lenhart et al., 2010). According a recent survey, 73% of US adolescent and 47% of US adult internet users have a profile on a SNS (Lenhart et al., 2010). A nationwide UK report has shown that adult social networkers use several SNSs, chiefly Facebook, Bebo and MySpace, and it is common to have a profile on more than one SNS, while half of adult users access their profiles at least every other day (Ofcom, 2008).

There is a plethora of SNSs, most of them open to anyone and free to use, with various technological applications serving a wide range of interests and purposes (Valkenburg, Schouten, & Peter, 2005). Most importantly, SNSs "build and verify social networks for the individuals and communities who share interests and activities with one another, or who are interested in exploring the interests and activities of others" (Kwon & Wen, 2010, p.255). Although most SNSs primarily support the maintenance of pre-existing social networks

(Ellison, Steinfield, & Lampe, 2007; Lenhart & Madden, 2007b; Subrahmanyam, Reich, Waechter, & Espinoza, 2008), as people use SNSs to discuss daily episodes and to organise physical meetings (Kim & Yun, 2007; Pempek, Yermolayeva, & Calvert, 2009), the connection of individuals based on shared interests, activities, or ideas is also supported (Beer & Burrows, 2007), either by SNSs which target specific demographics, contexts, or interests (e.g., Dogster, MyChurch, Linkedln.com), or by user-formed theme-specific internal groups, or even by niche user-created online networks (as in the case of Ning).

SNSs allow individuals to create their profile, articulate their online network, and establish or maintain connections with others. Like other Web 2.0 applications, SNSs provide an easy, accessible way to interact with other people and gather feedback. Nevertheless, unlike other Web 2.0 applications, SNSs allow people to explicitly articulate their social networks and define their community egocentrically, therefore reflecting more authentically real-life relationships of people than traditional online communities (Kiehne, 2004 as cited in Rau, Gao, & Ding, 2008).

The focus of this study is on Facebook as this is the SNS that has become the most popular online social network for adults (e.g. Ofcom, 2008; Lenhart et al., 2010), while it is at least one of the dominant SNSs in Greece. Numerous empirical studies focalising on Facebook in particular, though referring to teenagers or emerging adults only, confirm that it is a commonly used SNS (e.g., Cain, Scott, & Akers, 2009; Debatin, Lovejoy, Horn, & Hughes, 2009; Lewis, Kaufman, Gonzalez, Wimmerb, & Christakis, 2008; Selwyn, 2009; among others).

**Learning through SNS Use**

Research concerning SNSs emerges from diverse disciplines and addresses a broad range of themes (see Boyd & Ellison, 2007 for a review of prior research), yet only a few empirical or theoretical studies explore the link between SNS use and learning. The handful of published studies that exist, as regards learning through SNS use, delves into sociopolitical engagement and socialization, identity performance, and technological skills development. Some studies explore the acceptance or usage of Facebook in educational contexts (e.g., Lockyer & Patterson, 2008; Mazman & Usluel, 2010; Roblyer, McDaniel, Webb, Herman, & Witty, 2010), however this is somewhat tangential to the focus of the present study.

**Sociopolitical Engagement and Socialization.**

To begin with a purely theoretical perspective, Maranto and Barton (2010) esteem the opportunities for sociopolitical engagement that SNSs afford. There is anecdotal evidence (Maranto & Barton, 2010; Shapiro, 2009) that more and more people form and join Facebook groups for overt political and social reasons; hence, educators are encouraged to embrace the SNS "realm that promises to have impacts on the workplace and the polis" (Maranto & Barton, 2010, p.44). In that sense, even individuals who feel that they are unheard by authorities can channel their voices through online networks (Shapiro, 2009). On the other hand, Boyd (2007) suggests that SNSs are an extra form of public space where adolescents gather and, through peer interaction, learn social norms, status structures, and how to negotiate relationships of all types. Along the same lines, Greenhow and Robelia (2009), on investigating whether participation in a SNS can prepare adolescents for future citizenship, found that adolescents who use a SNS demonstrate a partial understanding, at least, of their forthcoming roles and responsibilities as citizens. Finally, Pempek et al. (2009) found that more than 95% of students prize the role of Facebook in their social lives. Similarly, Madge, Meek, Wellens, & Hooley (2009) revealed that Facebook facilitated students' settlement into university life and created a sense of community. To conclude, it can be suggested that participation in a SNS has at least some positive effect on the lifelong process of socialization and citizenship of an individual.

**Identity Performance.**

Learning how to manage impressions is a critical social skill (Boyd, 2008; Dwyer, 2007), and SNS offer people an additional environment to practice and reevaluate their outward communication cues (Boyd, 2008). From the very beginning of online networking, individuals have to create profiles in order to register in a SNS, and although profiles are constructed through a series of generic forms, users can still manipulate them in order to express themselves. The choice of the profile photo and personalized answers in questions, such as political or religious views, as well as favorite books, music, movies, or quotations, allow individuals to make an implicit "identity statement" (Zhao, Grasmuck, & Martin, 2008, p.1820), and, in that sense, "a profile can be seen as a form of digital body where individuals must write themselves" (Boyd, 2008, p.129). To further complicate things, it is not only in profile construction that people must learn to "write themselves", but rather in all types of online social interaction. Whereas identity performance in a physical milieu is both served

and constrained by our body (that is through our appearance, speech, and facial expressions), in the online environment we must learn how to convey identity cues without somatic facilitators. In line with the axiom "people learn from observing other people" (Merriam & Caffarellam, 1991 quoted in Smith, 1999b) of social learning theory, an effective way to achieve that kind of learning is through looking at others' profiles (Boyd, 2008) and online behavior in general. What is more, through our online social interactions we can assess how well we have conveyed what we intended to, and subsequently adjust our performance (Boyd, 2008).

**Development of Technological Skills.**

SNSs afford practice of basic, and thus vital, technological skills in a social context, as participation in a SNS requires, and thus develops, a range of skills, such as posting messages, audio and video file sharing, uploading and downloading files, and so on (Greenhow & Robelia, 2009; National School Boards Association, 2007). Buckingham (2007) suggests that these skills are "mundane", yet, even if this is true, it does not diminish their value since it underlines that they constitute basic skills in the digital world. Moreover, since there are individuals that are more technological competent than others (Greenhow & Robelia, 2009; National School Boards Association 2007), we can safely hypothesize that there are also less technological competent individuals who struggle to master even these basic skills.

**Learning in Online Environments**

Online environments such as blogs, wikis, and forums, have recently been emphasised as means to enhance the learning process in educational contexts (George & Labas, 2008; Kerawalla, Minocha, Kirkup, & Conole, 2009; McLoughlin & Lee, 2007; Trentin, 2009). Web 2.0 tools support and encourage desirable qualities of learning such as active participation, collaboration, interaction, and peer feedback (Murphy & Cifuentes, 2001). Additionally, individuals learn how to develop several strategies in order to overcome technological and interpersonal relationship problems (Murphy & Cifuentes, 2001). What is more, learning with Web 2.0 tools stimulates adults' interest, as it supports self-directed approach to learning and it facilitates choice and use of a wide range of resources (Mason, 2006). Finally, due to the global character of the internet, people from different cultural backgrounds join groups and online communities expanding their size and diversity. Hence,

online environments bear a more diverse set of information resources and provide increased opportunities for information sharing and idea genesis.

## Conceptual Framework

Essential for the study was to employ a robust conceptual framework to compare and contrast users' perceptions of learning through casual use of Facebook. Foremost, it is necessary to define what *learning* is. Learning can be understood as a *process* and as the *outcome* of this process (Smith 1999a). When learning is conceived as an outcome, the focus is placed on the individual and the emphasis is on knowledge acquisition and skills development. Yet, learning does not occur in a vacuum; it is an inherently social and participatory process situated in the sociocultural milieu. While these conceptions are often treated independently as two typical levels of analysis, understanding their interrelationships yields a conceptually more satisfying picture of learning. Salomon and Perkins (1998) unfold the interplay between these two perspectives, providing an appropriate theoretical perspective from which to approach learning through SNS use:

> **Active social mediation of individual learning**. It is the socially facilitated acquisition of knowledge and skills and occurs when a person or a group of people help an individual to learn. It is one of the most fundamental social forms of learning and it can be considered the same as instruction: a teacher teaches its students; parents guide their child, and so on. Here, there is a rather clear distinction between the individual learner, the learning products carried away as transferable cognitive commodities and the social agents facilitating that learning.

> **Social mediation as participatory knowledge construction**. While in the previous category the focus falls on the learner's learning, here individual cognitive activity and the social mediation of learning are seen as an integrated and situated system in a particular context. Rather being transmitted from a knowledgeable authority to its apprentices, knowledge becomes jointly constructed through interaction. Accordingly, the learning products are distributed over the entire system, rather than being owned by the individual.

> **Social mediation by cultural scaffolding**. When individuals' learning is supported by cultural artifacts, such as books or tools. Artifacts, being culturally and historically situated per se, convey the wisdom that directed their design. In that way, the learner and the artifacts form a learning system, which reorganizes action and determines

what can be carried out (along with when, where, in what form and for what purpose) (Cole, 1995 cited in Salomon & Perkins, 1998).

**Learning to be a social learner**. A social dimension of meta-learning. Through social interaction, people develop knowledge, skills, and understanding not only in particular domains, but also about learning itself in social settings. Hence, for example, they learn where, when, and how to ask questions or how to participate in reciprocal learning relationships. Here, the individual extends its capacity to overcome learning obstacles by participating in and capitalizing on the social milieu.

**Learning of social content**. The last category includes matters such as how to get along with other people, how to collaborate harmoniously, and so on. Here, it is not introduced a new way of understanding learning systems rather the learning system would be one of the previously discussed, operating on social content.

## Methodology

The study aims at casting light on the types of learning through casual use of SNSs by adults who pursue learning activities. As aforesaid, Facebook is the SNS prototype used in this study as it surged in popularity the recent years.

A quantitative survey method has been selected, as it is a simple and straightforward way to study attitudes, beliefs, and motives (Robson, 2002, p.233), while it is a time/cost saving method and affords access to unique populations (Wright, 2005).

The survey instrument administered to the most active members of a Greek Facebook group, whose main goal is to share announcements about learning events among its members. The study focused on this particular group for it seemed to constitute an appropriate study population as it will be explained below, and it is also a sheer Greek group, providing that way a good opportunity to study attitudes and perceptions of Greek Facebook users.

## Instrument

Data was collected by means of an online survey developed on the Bristol Online Surveys service. The survey comprised three sections and is presented in the Appendix. In the first section, demographic characteristics of participants were collected through four questions.

In the second section, data referring to participants' Facebook usage frequency and time length spent on Facebook on a daily basis were collected through two rating scale questions. Additionally, a 4-point Likert scale with seventeen questions, largely derived from Subrahmanyam et al.'s questionnaire (2008, p.427), inquired about participants' frequency of performing several Facebook activities.

The third section consisted of four 6-point Likert scales with 27 questions in total, aimed at gathering participants' perceptions about learning through casual Facebook use. The response scale for each item ranged from "strongly disagree" (1) to "strongly agree" (5), with middle-point (3) of the scale anchored by "neither agree nor disagree", while, consistent with Ryan and Garland (1999) suggestion, an additional "not applicable" option allowed respondents to provide an answer that is true to their experience.

In the second and third section there was an optional open-ended question so participants could provide examples and other qualitative feedback. This self-reported questionnaire was grounded on the above presented conceptual framework. The formulation of the questionnaire was facilitated by several unstructured short "informal" interviews which were conducted through the Facebook chat tool. This approach was chosen for its relevance to the research context. As Robson proposes (2002, p.282), seizing opportunities for short "informal" chats in the "research setting" is likely to provide authentic perceptions about anything concerning the research. Along the same lines, synchronicity embedded in the medium accelerated interaction, stimulated memories, and helped participants comment more freely about their experiences.

The instrument's validity was tested by three educators who are experienced Facebook users and who engage with learning in both their professional and personal life. By virtue of their profession they could reasonably be considered experts on what learning is possible in a given context, despite that the study is on a novel research field. Additionally, their experience on Facebook helped refine their understanding of the learning potentials afforded by the specific SNS. Therefore, their opinion was requested to check whether the questionnaire was conceptually on the right lines and whether the statements were understandable. Based on the received feedback, ambiguous items were revised and the instrument was modified prior to administration.

**Study Group**

The study focused on a Greek Facebook group, whose members post announcements on the group wall about impending learning events. When this group launched in January 2010 it attracted great numbers of users in a short span of time; the group listed more than 36,750 members nine months after launching. The group has no particular thematic focus, rather it embraces all disciplines and interests from astronomy to mathematics to history to poetry to dance. Interaction on the group wall among members is low as it is used mostly for posting and reading announcements about learning events. It is indicative that while 764 announcements were posted from group launch till September 2010, only 164 comments were made during the same period. All members are invited and welcome to post information on the wall about upcoming seminars, conferences, workshops, and so on, so as the rest of the group members can be informed about impending events.

However, the vast majority (more than 98%) of members do not contribute to the wall with any kind of information (i.e., post, comment, or even "Like" on others' posts). This is consistent with a study on Facebook which revealed that many users spend much of their time reading and viewing information without interacting in any way, while over half of users only rarely interact with groups (Pempek et al. 2009). This tendency of no contribution by the majority of group members can be explained by means of a study about reasons of not contributing in online communities, which revealed that the most popular reason among users for not posting is that they feel that their information needs can be satisfied without posting (Preece, Nonnecke, & Andrews, 2004). Hence, it can be safely hypothesized that most members of this group do not contribute to the group wall because they can satisfy their informational needs without explicitly posting.

This group was chosen as the study population mainly for two reasons. Firstly, the members of the group explicitly look for learning activities. So, they have a predisposition to attend to events which are directly related to their specific domains of interest, or to put it in other words, they hold an individual interest in relation to a particular topic or domain (Ainley, Hidi, & Berndorff, 2002). Individual interest is personal, robust, and often wide-ranging (Trend, 2005), therefore it is expected that members of the group will seek any kind of learning opportunity on Facebook which is related to their interests. It is also anticipated that they will engage in activities related to their interests while using Facebook, for example they

will follow relevant links, read discussions, chat with people who share the same interests, and so on. Additionally, it is hoped that they will be competent to identify any beneficial effect on their learning due to casual use of Facebook. Secondly, this group does not constitute an online community of practice neither purports to establish one. If this group had formed a community of practice then, inevitably, its members would have been involved in a learning process by engaging with the community's ethos and by participating in day-to-day interactions. It is beyond the scope of the present study to explore what types of learning may occur in a community of practice on Facebook, or whether Facebook affords or empowers the development of a community of practice; rather this study aims to explore what types of learning may occur through casual use of Facebook. Surely, members of this group may participate in other Facebook groups whose members form a community of practice, still participation in communities of practice can be reasonably considered as part of their casual use of Facebook.

**Participant Characteristics and Data Collection**

Research was conducted with the most active members of the "announcements about learning events" Facebook group over an eight-week period in July-September 2010. In this paper, active members are defined as those who have posted information about a learning event, or have given feedback on posts from the group launch. Most active members were purposively selected as the focus group, based on the premise that they are pursuing learning activities more energetically than the rest of the group members.

**Sampling Strategy.**

The sampling strategy involved a twofold approach. A personal invitation message with a short description of the study, information about confidentiality, and a link to the survey was sent to the 554 most active members twice during the research period. Some people who were invited and took the survey forwarded the survey's link to their friends voluntarily. Additionally, the survey's link with information about the research study was also publicised on the group wall twice and members were openly invited to participate. These mixed recruitment methods elicited a total of 250 responses, yielding a response rate of 45.1% of the total members invited. Yet, the number of respondents was very low (less than 2%) compared with the number of group members. Therefore it is impossible to know how well they represent the group as a whole (Wright, 2005). Of the 250 participants, forty-nine failed to

answer at least one survey question, thus the actual number of responses included in a particular analysis is indicated as "AN" (e.g., AN=217).


**Demographic Characteristics.**

From the total 554 most active members, 387 (69.8%) were female and only 155 (28%) were male. Additionally, most announcements (303; 39.7%) were posted from female members; male posted 193 announcements (25.3%), while the three group administrators (two male and a female) posted 232 announcements (30.4%). Females made approximately double (110) comments than males (54). Similarly, the overwhelming majority of the respondents to the survey were female (201; 80.4%). These observations are consistent with Lewis et al.'s (2008) findings that women are significantly more socially active on Facebook than men. Subsequently, any results must be seen in the light of these biases towards female participants.


In terms of age, respondents ranged from under 20 to over 50, with approximately 70% being older than 26 years old.

Respondents were highly educated; over 90% had a graduate degree or higher. This is consistent with Lenhart et al.'s (2010) findings that adults with at least some college experience are more likely to use SNSs than other users and supports the initial hypothesis that respondents were interested in learning. Table 1 summarizes the demographic profile of the respondents in the survey.

| Item | | Frequency | Percentage |
|---|---|---|---|
| Gender | Female | 201 | 80.4 |
| | Male | 49 | 19.6 |
| Age | under 20 | 9 | 3.6 |
| | 21-25 | 73 | 29.2 |
| | 26-30 | 81 | 32.4 |
| | 31-35 | 35 | 14.0 |
| | 36-40 | 24 | 9.6 |
| | 41-45 | 22 | 8.8 |
| | 46-50 | 5 | 2.0 |
| | over 50 | 1 | 0.4 |
| Educational level | High school | 24 | 9.6 |
| | first degree | 115 | 46.0 |
| | postgraduate | 111 | 44.4 |

**Table 1: Participants' demographic profiles.**


**Patterns of Facebook Usage.**

The majority of the participants reported that they spent 30 min to 2 hours a day on Facebook (148 participants; 59.9%), and almost equal number of participants reported checking their account 1-5 times a day (136 participants; 55.1%). The most common activities among participants were read comments/posts, listen to/find music, and post YouTube links. Table 2 summarizes the descriptive statistics of participants' Facebook usage.

| Item | Frequency | Median | Mode | AN |
|---|---|---|---|---|
| **Frequency of Facebook usage** | | 1-5 times a day | 1-5 times a day | 250 |
| Less than once a day | 60 | | | |
| 1-5 times a day | 137 | | | |
| 6-10 times a day | 33 | | | |
| 11-20 times a day | 7 | | | |
| 20-30 times a day | 5 | | | |
| More than 30 times a day | 7 | | | |
| **Length of stay on Facebook** | | 30 min-1 hour | 30 min-1 hour | 250 |
| Less than 30 minutes | 56 | | | |
| 30 minutes-1 hour | 84 | | | |
| 1-2 hours | 64 | | | |
| 2-5 hours | 34 | | | |
| More than 5 hours | 11 | | | |
| **Facebook activities** | | | | |
| Read comments/posts | | often | often | 250 |
| Listen to/find music | | sometimes | often | 247 |
| Post links to YouTube.com | | sometimes | often | 248 |
| Update my status | | sometimes | sometimes | 247 |
| Write comments on photos, walls, etc. | | sometimes | sometimes | 248 |
| Look at others' photos | | sometimes | sometimes | 245 |
| Watch video links | | sometimes | sometimes | 248 |
| Browse my friends' profiles/walls/pages | | sometimes | sometimes | 246 |
| Send personal messages | | sometimes | sometimes | 245 |
| Upload/tag photos | | sometimes | rarely | 247 |
| Find out about events | | sometimes | rarely | 247 |
| Search for profiles | | rarely | rarely | 243 |
| Edit my profile/change my profile picture | | rarely | rarely | 248 |
| Look for new friends, send friend requests, add friend requests | | rarely | rarely | 245 |
| Visit/join groups to talk about specific topics | | rarely | rarely | 241 |
| Create events and send invitations | | rarely | never | 244 |
| Create groups about specific topics | | never | never | 245 |

**Table 2: Participants' Facebook usage and activities.**

**Data Analysis and Findings**

This study follows both exploratory and confirmatory data analysis philosophies for data analysis, in order to maximize insight into the data set (Robson 2002). Non-parametric

methods were utilized, since only nominal (male/female) and ordinal (never/rarely/sometimes/often) data were used. However, in analysing participants' perceptions about learning on Facebook parametric methods were also employed, for they are more efficient and sophisticated than non-parametric methods (Carifio & Perla, 2008; Pell, 2005; Robson, 2002). Although data were once more ordinal in character, scholars have long argued for treating Likert scale data as interval in nature (Carifio & Perla, 2008; Pell, 2005); many studies use parametric methods to analyze attitude data (Göb, McCollin, & Ramalhoto, 2007), while a variety of studies have revealed that 'the Likert response format produces empirically interval data' (Carifio & Perla 2008, p.1150).

The technique implemented in this section is carried out in two phases. In the first phase, a graph is usually presented in order to immediately compare data across independent variables (gender, educational level, age) and examine possible relations. Gradation of colour from the fair to the dark represents increase in frequency or duration. In order to facilitate chart interpretation, adjacent categories with few responses were grouped together, as sacrificing detailed information is often acceptable in return of complexity decrease of the results (Robson, 2002). Therefore, age, frequency and duration of Facebook usage categories were reduced to five, four, and four respectively. In the second phase, several tests statistically validate, or invalidate, visual observations.

**Facebook Usage and Activities**

This part summarizes the results on the effect of gender, age, and educational level on the frequency and duration of Facebook usage and on users' activities.

**Differences in Facebook Usage Related to Gender.**

According to Mann-Whitney U test there is no important difference in frequency of Facebook usage among genders, yet it was found that female users tend to spend more time on Facebook than males.

**Differences in Facebook Usage Related to Age.**

Sommers'd test marked that, compared to older, younger users check their Facebook accounts more frequently, and that users aged between 21 and 25 spent more time on Facebook everyday than users from other age group categories. Moreover, partial correlation

tests confirmed that frequency and duration of Facebook usage and age are reversely associated, when controlling gender effect. Similarly, duration of Facebook usage is associated with gender differences, when controlling age effect. However, the strength of the relationship was low (close to 0.150) in all cases.

**Differences in Facebook Activities Related to Gender.**

Mann-Whitney and partial correlation test with the effect of age and time spent on Facebook in turn controlled indicated that women present a statistically significant higher tendency to listen to/find music than men (p=0.000; Correlation=-0.280), whereas men present a statistically significant higher tendency to create groups about specific topics (p=0.000; Correlation=0.230) and look for new friends (p=0.10; Correlation=0.169).

**Differences in Facebook Activities Related to Age**

Sommers'd test marked that older users create events more often than younger ones and that under 25 years old users tend to look at others' photos more often than the rest of the users. Both findings were confirmed by partial correlation analysis with the effect of time spend on Facebook controlled (p=0.001, Correlation=0.207; p=0.028, Correlation=-0.143).

**Learning through Facebook Use**

This part is comprised of five subsections, each devoted to a distinctive occurrence of learning according to the conceptual framework and presents summarized results of the perceptions of adult users with respect to learning through Facebook. It is also explored whether gender, age, and educational level influence these perceptions. Participants had the chance to opt for "not applicable" regarding their pragmatic experiences to each questionnaire item of this section, yet less than 4% of the total responses, almost equally distributed over the twenty-seven questions, belonged to this category. Thus, since "not applicable" responses were not meaningful for the study, they were grouped with missing responses, and, as before, the actual number of responses in a particular analysis is indicated as "AN".

**Active Social Mediation of Individual Learning on Facebook.**

Users' perceptions with respect to active social mediation of individual learning on Facebook were gathered through nine questions (see table 3 for descriptive statistics). Only a small amount of the participants perceived that they gained knowledge concerning native language use through Facebook usage, yet more than one out of three identified knowledge benefits on foreign language use. Two out of ten participants identified favorable outcomes to their writing skills and concurred that they got guidance about issues of interest by asking other people on Facebook. Approximately half of the participants agreed that they: (a) seek information about issues of interest by asking other people on Facebook, (b) gain knowledge about issues of interest by asking other people on Facebook, (c) express their thoughts/ideas on their wall and get feedback which help them to develop their thoughts/ideas further, and (d) get ideas/tips about issues of interest by asking other people on Facebook. Finally, more than seven out of ten participants agreed that they use Facebook groups to keep updated about issues of interest.

| Active social mediation of individual learning | | strongly disagree | disagree | neither agree nor disagree | agree | strongly agree | not applicable/ missing | AN |
|---|---|---|---|---|---|---|---|---|
| I seek information about issues that are of interest to me by asking other people on Facebook | Frequency | 11 | 32 | 71 | 96 | 27 | 13 | 237 |
| | Percent | 4.4% | 12.8% | 28.4% | 38.4% | 10.8% | 5.2% | |
| | Valid Percent | 4.6% | 13.5% | 30.0% | 40.5% | 11.4% | | |
| I gain knowledge about issues that are of interest to me by asking other people on Facebook | Frequency | 15 | 42 | 72 | 90 | 20 | 11 | 239 |
| | Percent | 6.0% | 16.8% | 28.8% | 36.0% | 8.0% | 4.4% | |
| | Valid Percent | 6.3% | 17.6% | 30.1% | 37.7% | 8.4% | | |
| I express my thoughts/ideas on my wall and get feedback which helps me elaborate/question my ideas and develop them further | Frequency | 19 | 44 | 47 | 97 | 28 | 15 | 235 |
| | Percent | 7.6% | 17.6% | 18.8% | 38.8% | 11.2% | 6.0% | |
| | Valid Percent | 8.1% | 18.7% | 20.0% | 41.3% | 11.9% | | |
| I get guidance about issues that are of interest to me by asking other people on Facebook | Frequency | 31 | 75 | 70 | 52 | 10 | 12 | 238 |
| | Percent | 12.4% | 30.0% | 28.0% | 20.8% | 4.0% | 4.8% | |
| | Valid Percent | 13.0% | 31.5% | 29.4% | 21.8% | 4.2% | | |
| I get ideas/tips and hints about issues that are of interest to me by asking other people on Facebook | Frequency | 15 | 39 | 58 | 106 | 23 | 9 | 241 |
| | Percent | 6.0% | 15.6% | 23.2% | 42.4% | 9.2% | 3.6% | |
| | Valid Percent | 6.2% | 16.2% | 24.1% | 44.0% | 9.5% | | |
| Through Facebook use I have developed my writing skills | Frequency | 79 | 70 | 50 | 24 | 17 | 10 | 240 |
| | Percent | 31.6% | 28.0% | 20.0% | 9.6% | 6.8% | 4.0% | |
| | Valid Percent | 32.9% | 29.2% | 20.8% | 10.0% | 7.1% | | |
| Through Facebook use I have gained knowledge concerning native language use | Frequency | 105 | 86 | 31 | 9 | 5 | 14 | 236 |
| | Percent | 42.0% | 34.4% | 12.4% | 3.6% | 2.0% | 5.6% | |
| | Valid Percent | 44.5% | 36.4% | 13.1% | 3.8% | 2.1% | | |
| Through Facebook use I have gained knowledge concerning foreign language use | Frequency | 50 | 45 | 56 | 64 | 23 | 12 | 238 |
| | Percent | 20.0% | 18.0% | 22.4% | 25.6% | 9.2% | 4.8% | |
| | Valid Percent | 21.0% | 18.9% | 23.5% | 26.9% | 9.7% | | |
| I use Facebook groups to keep myself updated about issues of interest | Frequency | 7 | 23 | 40 | 110 | 60 | 10 | 240 |
| | Percent | 2.8% | 9.2% | 16.0% | 44.0% | 24.0% | 4.0% | |
| | Valid Percent | 2.9% | 9.6% | 16.7% | 45.8% | 25.0% | | |

**Table 3: Participants' responses to questions about active social mediation of individual learning on Facebook.**

**Differences in Perceptions Related to Demographic Characteristics.**

As can be observed from the pie chart series below, users under 25 years old perceived, more than other age group categories, that they developed their writing skills and gained knowledge concerning foreign language use through Facebook.
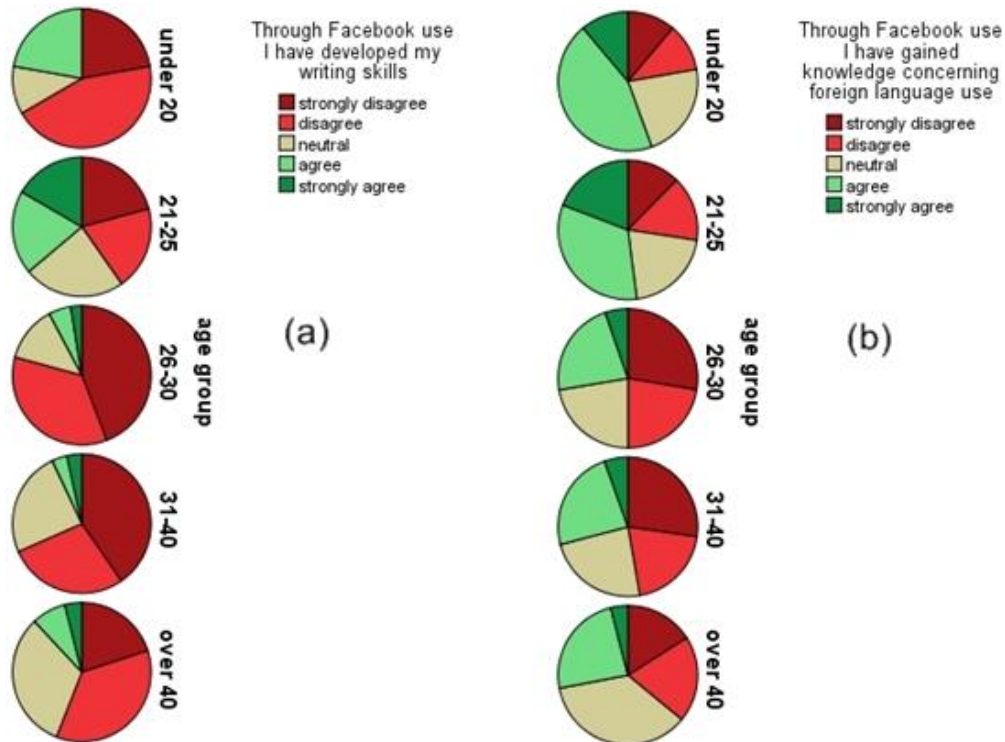
**Figure 1: Age group differences as regards perceptions about: (a) writing skills development, and (b) foreign language knowledge acquisition through Facebook use.**

An analysis of variance test was conducted using age as the independent variable. For both findings it was confirmed that there is statistical significant effect of age (p=0.002 and p=0.008 respectively) on users' perception. As can be observed from the pie chart series below, lower educational level users tend to perceive more that they developed their writing skills and that they gained knowledge concerning foreign language use than higher educational level users.
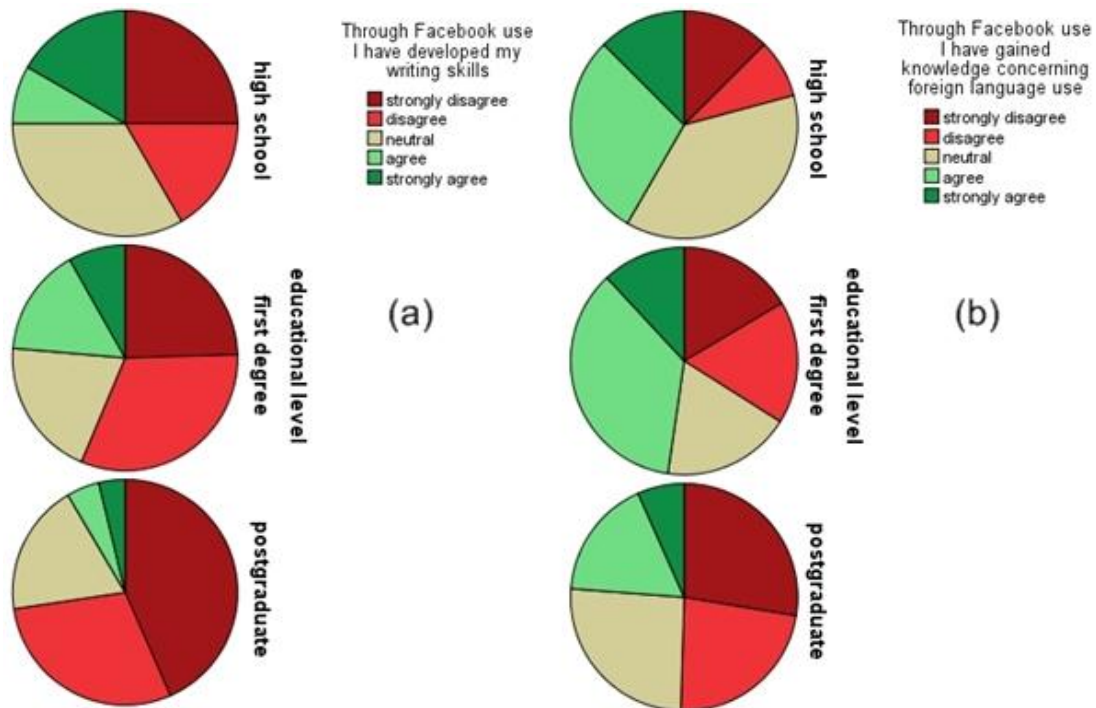
**Figure 2: Educational level differences as regards perceptions about: (a) foreign language knowledge acquisition and (b) writing skills development.**

An analysis of variance test was conducted using educational level as the independent variable. Same as before, for both findings it was confirmed that there is statistical significant effect of educational level (p=0.002 and p=0.022 respectively) on users' perceptions.

Two multiple linear regression analyses were conducted using foreign language knowledge acquisition perception as the dependent variable in the first analysis, and writing skills development perception as the dependent variable in the second analysis, while age, educational level, and time spent on Facebook were independent variables. In both analyses the coefficient of determination was low ($Ra2=0.120$ and $Rb2=0.095$ respectively). Age was not statistically associated with their perceptions, while educational level and time spent on Facebook were jointly significant in predicting users' perceptions ($Fa=10,643$, $pa=0.000$, $Fb=8.259$, $pb=0.000$). Finally, standardized coefficients indicated that educational level was reversely related with users' perception while time spent on Facebook had a greater effect on the result.

**Social Mediation as Participatory Knowledge Construction on Facebook.**

Users' perceptions with regard to social mediation as participatory knowledge construction on Facebook were collected through three questions (see table 4 for descriptive statistics).

More than half of the participants agreed that they chat on Facebook with people about issues related to their interests, whereas two-thirds of the participants concurred that they participate in wall discussions where people exchange information and opinions about issues related to their interests and that they actively participate in groups thematically related to their interests. It was explored whether gender, age, and educational level influence these perceptions, yet no statistically significant effect was found.

| Social mediation as participatory knowledge construction | | strongly disagree | disagree | neither agree nor disagree | agree | strongly agree | not applicable/ missing | AN |
|---|---|---|---|---|---|---|---|---|
| I chat with people on Facebook about issues related to my interests | Frequency | 19 | 40 | 53 | 95 | 29 | 14 | 236 |
| | Percent | 7.6% | 16.0% | 21.2% | 38.0% | 11.6% | 5.6% | |
| | Valid Percent | 8.1% | 16.9% | 22.5% | 40.3% | 12.3% | | |
| I actively participate in groups which are related to my interests | Frequency | 8 | 24 | 42 | 125 | 42 | 9 | 241 |
| | Percent | 3.2% | 9.6% | 16.8% | 50.0% | 16.8% | 3.6% | |
| | Valid Percent | 3.3% | 10.0% | 17.4% | 51.9% | 17.4% | | |
| I participate in wall discussions where everyone exchanges information and opinions about issues related to my interests | Frequency | 12 | 21 | 59 | 117 | 33 | 8 | 242 |
| | Percent | 4.8% | 8.4% | 23.6% | 46.8% | 13.2% | 3.2% | |
| | Valid Percent | 5.0% | 8.7% | 24.4% | 48.3% | 13.6% | | |

**Table 4: Participants' responses to questions about social mediation as participatory knowledge construction on Facebook.**

**Social Mediation by Cultural Scaffolding on Facebook.**

Users' perceptions with regard to social mediation by cultural scaffolding on Facebook were gathered through seven questions (see table 5 for descriptive statistics). Nearly one-third of the participants signified that Facebook helped them become more self-regulated in learning how to use ICT, gain experience in computer related tasks, and find new/better ways to accomplish computer related tasks. Over four out of ten participants credited Facebook for facilitating their understanding of several ICT issues. More than half of the participants asserted that posted videos/images on walls helped them reflect on or gain new knowledge. Finally, two-thirds of the participants acknowledged that their personal wall facilitates their effort to directly present or express their ideas, while approximately eight out of ten recognised their personal wall as a way to present their ideas or express them through representative means. Same as before, gender, age, and educational level does not seem to influence these perceptions.

| Social mediation by cultural scaffolding | | strongly disagree | disagree | neither agree nor disagree | agree | strongly agree | not applicable/ missing | AN |
|---|---|---|---|---|---|---|---|---|
| Facebook as a software tool helps me to gain experience in computer related tasks | Frequency | 42 | 51 | 60 | 65 | 28 | 4 | 246 |
| | Percent | 16.8% | 20.4% | 24.0% | 26.0% | 11.2% | 1.6% | |
| | Valid Percent | 17.1% | 20.7% | 24.4% | 26.4% | 11.4% | | |
| Facebook as a software tool helps me to find new/better ways to accomplish computer related tasks | Frequency | 49 | 65 | 55 | 55 | 20 | 6 | 244 |
| | Percent | 19.6% | 26.0% | 22.0% | 22.0% | 8.0% | 2.4% | |
| | Valid Percent | 20.1% | 26.6% | 22.5% | 22.5% | 8.2% | | |
| Facebook as a software tool facilitates my understanding of several ICT issues | Frequency | 42 | 46 | 54 | 87 | 18 | 3 | 247 |
| | Percent | 16.8% | 18.4% | 21.6% | 34.8% | 7.2% | 1.2% | |
| | Valid Percent | 17.0% | 18.6% | 21.9% | 35.2% | 7.3% | | |
| Facebook as a software tool helps me to become more self-regulated in learning how to use ICT | Frequency | 45 | 51 | 72 | 66 | 11 | 5 | 245 |
| | Percent | 18.0% | 20.4% | 28.8% | 26.4% | 4.4% | 2.0% | |
| | Valid Percent | 18.4% | 20.8% | 29.4% | 26.9% | 4.5% | | |
| Posted videos/images on Facebook walls help me reflect or gain new knowledge | Frequency | 18 | 36 | 55 | 117 | 17 | 7 | 243 |
| | Percent | 7.2% | 14.4% | 22.0% | 46.8% | 6.8% | 2.8% | |
| | Valid Percent | 7.4% | 14.8% | 22.6% | 48.1% | 7.0% | | |
| My personal wall is a way to present my ideas or express them through representative means | Frequency | 5 | 16 | 38 | 138 | 47 | 6 | 244 |
| | Percent | 2.0% | 6.4% | 15.2% | 55.2% | 18.8% | 2.4% | |
| | Valid Percent | 2.0% | 6.6% | 15.6% | 56.6% | 19.3% | | |
| My personal wall facilitates my effort to directly present or express my ideas | Frequency | 10 | 24 | 48 | 115 | 45 | 8 | 242 |
| | Percent | 4.0% | 9.6% | 19.2% | 46.0% | 18.0% | 3.2% | |
| | Valid Percent | 4.1% | 9.9% | 19.8% | 47.5% | 18.6% | | |

**Table 5: Participants' responses to questions about social mediation by cultural scaffolding on Facebook.**

**Learning to be a Social Learner on Facebook.**

Users' perceptions with respect to learning to be a social learner on Facebook were gathered through five questions (see table 6 for descriptive statistics). Nearly two out of ten of the participants asserted that they learned how to seek help or when and how to pose questions due to Facebook use, three out of ten that they learned to accept different thoughts and perspectives, and four out of ten that they can more easily start a conversation with an unknown/little known person. Finally, approximately two-thirds of the participants affirmed that they observe other people's behavior on Facebook and the consequences of those behaviors.

| Learning to be a social learner | | strongly disagree | disagree | neither agree nor disagree | agree | strongly agree | not applicable/ missing | AN |
|---|---|---|---|---|---|---|---|---|
| I have learned when and how to pose questions | Frequency | 39 | 78 | 79 | 28 | 6 | 20 | 230 |
| | Percent | 15.6% | 31.2% | 31.6% | 11.2% | 2.4% | 8.0% | |
| | Valid Percent | 17.0% | 33.9% | 34.3% | 12.2% | 2.6% | | |
| I have learned how to seek for help | Frequency | 45 | 60 | 79 | 42 | 3 | 21 | 229 |
| | Percent | 18.0% | 24.0% | 31.6% | 16.8% | 1.2% | 8.4% | |
| | Valid Percent | 19.7% | 26.2% | 34.5% | 18.3% | 1.3% | | |
| I can more easily start a conversation with an unknown/little known person | Frequency | 44 | 43 | 57 | 76 | 13 | 17 | 233 |
| | Percent | 17.6% | 17.2% | 22.8% | 30.4% | 5.2% | 6.8% | |
| | Valid Percent | 18.9% | 18.5% | 24.5% | 32.6% | 5.6% | | |
| I observe other people's behavior on Facebook and the consequences of those behaviors | Frequency | 14 | 30 | 53 | 99 | 41 | 13 | 237 |
| | Percent | 5.6% | 12.0% | 21.2% | 39.6% | 16.4% | 5.2% | |
| | Valid Percent | 5.9% | 12.7% | 22.4% | 41.8% | 17.3% | | |
| I have learned to accept different thoughts and perspectives | Frequency | 24 | 49 | 94 | 55 | 11 | 17 | 233 |
| | Percent | 9.6% | 19.6% | 37.6% | 22.0% | 4.4% | 6.8% | |
| | Valid Percent | 10.3% | 21.0% | 40.3% | 23.6% | 4.7% | | |

**Table 6: Participants' responses to questions about learning to be a social learner on Facebook.**

**Differences in Perceptions Related to Demographic Characteristics.**

As can be observed from the chart below, male perceive more that they can more easily start a conversation with an unknown/little known person on Facebook than female users.
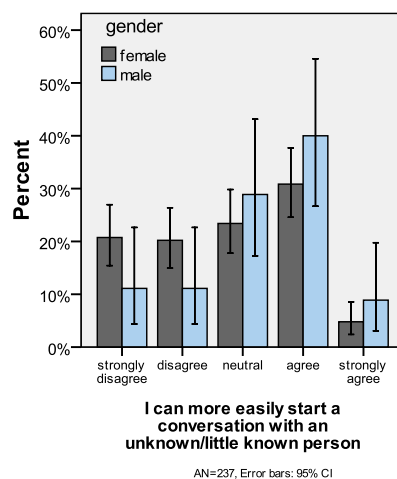


**Figure 3: Gender differences on perception regarding their easiness to initiate conversation with unknown/little known persons on Facebook.**

A regression analysis was conducted with users' perception as dependent variable and gender, age, educational level, and time spent on Facebook as independent variables. The analysis revealed that all independent variables were jointly statistically significantly related to users' perception ($R^2 = 0.082$).

**Learning of Social Content on Facebook**

Users' perceptions with reference to learning of social content on Facebook were gathered through three questions (see table 7 for descriptive statistics). Nearly one out of ten participants reported that they often present a different personality either in their profile or in chat discussions so as to promote themselves better and two out of ten that they learned how to get along with other people due to Facebook use. It was explored whether gender, age, and educational level influence these perceptions, yet no statistically significant effect was found.

| Learning of social content | | strongly disagree | disagree | neither agree nor disagree | agree | strongly agree | not applicable/ missing | AN |
|---|---|---|---|---|---|---|---|---|
| I often present a different personality in chat discussions depending on the occasion or on how I want to promote myself | Frequency | 72 | 85 | 41 | 35 | 3 | 14 | 236 |
| | Percent | 28.8% | 34.0% | 16.4% | 14.0% | 1.2% | 5.6% | |
| | Valid Percent | 30.5% | 36.0% | 17.4% | 14.8% | 1.3% | | |
| I have learned how to get along with other people | Frequency | 32 | 64 | 89 | 37 | 8 | 20 | 230 |
| | Percent | 12.8% | 25.6% | 35.6% | 14.8% | 3.2% | 8.0% | |
| | Valid Percent | 13.9% | 27.8% | 38.7% | 16.1% | 3.5% | | |
| I present a different personality in my profile so as to promote myself better | Frequency | 90 | 97 | 30 | 20 | 3 | 10 | 240 |
| | Percent | 36.0% | 38.8% | 12.0% | 8.0% | 1.2% | 4.0% | |
| | Valid Percent | 37.5% | 40.4% | 12.5% | 8.3% | 1.3% | | |

**Table 7: Participants' responses to questions about learning of social content on Facebook**

**Discussion and Conclusions**

**Facebook usage**

Three out of four participants login to Facebook at least once a day and use it for at least 30 minutes. Hence, compared with adult social networkers from USA (Lenhart et al., 2010) and UK (Ofcom, 2008), participants in this study exhibit significantly increased SNS usage. In parallel with Lenhart et al.'s findings (2010), younger adults use Facebook more frequently than older ones, while this study revealed that they spent more time on Facebook too. Women tend to stay on Facebook slightly more than men, whereas taking into account the striking gender differences around activity in the study group they are also more energetic users. Consistent with Ofcom's report concerning men's attitudes on SNSs (2008), men reported looking for new friends more frequently than women, which is in harmony with their feeling that they can more easily start a conversation with an unknown/little known person on Facebook. Additionally, it was found that men are likely to create groups more frequently than women, whereas women tend to listen to music on Facebook more often.

In agreement to some extent with both Subrahmanyam et al.'s (2008) and Pempek et al.'s (2009) findings regarding activities on Facebook, the most frequent activities among participants were found to be reading comments/posts, listening to/finding music, and posting video links, whereas creating groups and events were the most uncommon activities. Boyd argued that adolescents use SNSs for entertainment and "social voyeurism" (2008, p.127); it seems that this disposition only gradually fades away since watching video links and looking at others' photos were more common activities among participants under 25 years old. Conversely, creating events was more frequently operated among older participants. This might be explained by qualitative feedback, as two participants over 41 years old noted that they use Facebook for profession-related matters or for advertising their activities, hence it can be hypothesized that creating events is an efficient way to achieve that.

**Learning on Facebook**

Current social learning theories posit that knowledge and learning are inherently social, while cultural activities and artefacts are regarded as integral to conceptual development (e.g., John-Steiner & Mahn, 1996; Palinscar, 1998; Prawat, 1996). Given the recent worldwide proliferation of SNSs, these sites presumably play a role in people's learning.

This study brought to light that half of adult users perceive that socially mediated individual learning is facilitated on Facebook either by getting feedback on ideas expressed on their wall or by gaining knowledge, getting ideas, and seeking information by asking other users, while most of them perceive that through groups they keep updated on issues of interest. Additionally, a significant number of participants acknowledged getting guidance by asking other people on Facebook, developing their writing skills and gaining knowledge concerning foreign language use. Moreover, it seems that young users and users with relatively low educational background are likely to acquire more writing skills and foreing language benefits due to Facebook use than their more educated or mature counterparts.Yet, the vast majority of users disputed that they gain knowledge concerning native language use.

Over half of users perceive that participatory knowledge construction takes place on Facebook by actively participating in groups, in wall discussions, and in chats. Social mediation by cultural scaffolding emerges on Facebook as well; most users recognise their personal wall as both a medium and a facilitator to express their ideas through representative

means. In addition, a large part of users perceive that Facebook facilitates their efforts to become more self-regulated in learning how to use ICT, to understand several ICT issues, to gain experience in computer related tasks, and to find new/better ways to accomplish computer related tasks.

Users acknowledge that they are learning to be social learners on Facebook. The majority of users observe other people's behavior and its consequences, whereas a significant part of users assert that they can more easily start a conversation with an unknown or little known person, and they have learned when and how to pose questions, how to seek for help, and to accept different thoughts and perspectives due to Facebook use.

Finally, a considerable number of participants identify learning of social content on Facebook as they often present a different personality so as to better promote themselves and assert that they have learned how to get along with other people due to Facebook use.

It appears, therefore, that everyday Facebook use can nurture multiple types of learning. This adds to the view that, by using digital technologies, online users learn "a whole range of skills", such as communication, general knowledge, multitasking, technical confidence, creativity, collaboration, and so forth (Green and Hannon 2007, p.35). However, this is not true for all users, in fact most users disputed that several distinctive occurrences of learning take place on Facebook and consequently it was not perceived as a holistically effective medium. Hence, what it works for some it might not be working for the rest. Even so, the results are promising as regards learning through casual use of a SNS and their potential for creating learning possibilities and opportunities needs to be further explored.

**Limitations**

This study has limitations in its methodology and results interpretation; these limitations indicate avenues for further research. As with any questionnaire-based survey, one concern is that participants' responses may have been subject to incorrect estimates, biases, faulty memories, and other similar problems (Robson, 2002). Another thorny issue is that several questions in the questionnaire were complex or double-barrelled, which is against good practices in question wording (Robson, 2002). Nevertheless, survey questions were well-linked to the learning framework, while it was not feasible to examine their perceptions about learning through short questions. Those issues indicate that much could be gained by using

flexible design research strategies to study users' perceptions concerning learning on Facebook. Additionally, the sample used consisted of participants from a single Greek Facebook group; most of them were highly educated, and the sample was severely biased towards women. Boyd (2006) argues that the meanings of SNS practices and features differ across sites and individuals, therefore we have to be careful in applying these findings to explain actual use and perceptions of learning on SNSs other than Facebook or on populations from a different educational level, culture, or ethnicity.

## References

Ainley, M., Hidi, S. & Berndorff, D. (2002). Interest, learning and the psychological processes that mediate their relationship. *Journal of Educational Psychology*, 94, 545-561.

Beer, D. & Burrows, R. (2007). Sociology and, of and in Web 2.0: Some initial considerations. *Sociological Research Online 12*, 5(17). http://www.socresonline.org.uk/12/5/17.html

Boyd, D. (2006). Friends, Friendsters, and Top 8: Writing community into being on social network sites. *First Monday*, 11(12). http://www.firstmonday.org/issues/issue11_12/boyd/

Boyd, D. (2007). Social network sites: Public, private, or what? *Knowledge Tree*, 13. http://kt.flexiblelearning.net.au/tkt2007/edition-13/social-network-sites-public-private-or-what/

Boyd, D. (2008). Why Youth ❤ Social Network Sites: The Role of Networked Publics in Teenage Social Life. In D. Buckingham (Ed.) *Youth, Identity, and Digital Media* (pp. 119-142). The John D. and Catherine T. MacArthur Foundation Series on Digital Media and Learning. Cambridge, MA: The MIT Press.

Boyd, D.M. & Ellison, N.B. (2007). Social network sites: Definition, history, and scholarship. *Journal of Computer-Mediated Communication*, 13(1), article 11. http://jcmc.indiana.edu/vol13/issue1/boyd.ellison.html

Buckingham, D. (2007). Introducing identity. In D. Buckingham (Ed.) *Youth, Identity, and Digital Media* (pp. 1-24). The John D. and Catherine T. MacArthur Foundation Series on Digital Media and Learning. Cambridge, MA: The MIT Press.

Cain, J., Scott, D.R. & Akers, P. (2009). Pharmacy Students' Facebook Activity and Opinions Regarding Accountability and E-Professionalism. *American Journal of Pharmaceutical Education*, 73(6), Article 104.

Carifio, J. & Perla, R. (2008). Resolving the 50-year debate around using and misusing Likert scales. *Medical Education*, 42, 1150-1152.

Clark, W., Logan, K., Luckin, R., Mee, A. & Oliver, M. (2009). Beyond Web 2.0: mapping the technology landscapes of young learners. *Journal of Computer Assisted Learning*, 25, 56-69.

Debatin, B., Lovejoy, J.P., Horn, A.K. & Hughes, B.N. (2009). Facebook and Online Privacy: Attitudes, Behaviors, and Unintended Consequences. *Journal of Computer-Mediated Communication*, 15, 83 - 108.

Dwyer, C. (2007). Digital Relationships in the 'MySpace' Generation: Results From a Qualitative Study. Pre-publication draft. *40th Hawaii International Conference on System Sciences (HICSS)*. Retrieved May 5, 2013, from http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.88.3398&rep=rep1&type=pdf

Ellison, N.B., Steinfield, C. & Lampe, C. (2007). The benefits of Facebook "friends": Social capital and college students' use of online social network sites. *Journal of Computer-Mediated Communication*, 12(4), 1143–1168.

Fu, F., Liu, L. & Wang, L. (2008). Empirical analysis of online social networks in the age of Web. 2.0. *Physica A*, 387, 675–684.

George, S. & Labas, H. (2008). E-learning standards as a basis for contextual forums design. *Computers in Human Behavior*, 24, 138-152.

Göb, R., McCollin, C. & Ramalhoto, M.F. (2007). Ordinal Methodology in the Analysis of Likert Scales. *Quality & Quantity*, 41, 601-626.

Green, H. and Hannon, C. (2007). Their Space: Education for a Digital Generation. Demos, London. Retrieved May 5, 2013, from http://www.demos.co.uk/publications/theirspace

Greenhow, C. & Robelia, B. (2009). Informal learning and identity formation in online social networks. *Learning, Media and Technology*, 34(2), 119-140.

Hargittai, E. (2007). Whose space? Differences among users and non-users of social network sites. *Journal of Computer-Mediated Communication*, 13(1), article 14. http://jcmc.indiana.edu/vol13/issue1/hargittai.html

Jenkins, H., Clinton, K., Purushotma, R., Robinson, A. J. & Weigel, M. (2006). *Confronting the challenges of participatory culture: Media education for the 21st century*. MacArthur Foundation. Retrieved May 5, 2013, from http://digitallearning.macfound.org/atf/cf/%7B7E45C7E0-A3E0-4B89-AC9C-E807E1B0AE4E%7D/JENKINS_WHITE_PAPER.PDF

John-Steiner, V. & Mahn, H. (1996). Sociocultural approaches to learning and development: A Vygotskian framework. *Educational Psychologist*, 31(3), 191-206.

Kerawalla, L., Minocha, S., Kirkup, G. & Conole, G. (2009). An empirically grounded framework to guide blogging in higher education. *Journal of Computer Assisted Learning*, 25(1), 31–42.

Kim, K.H. & Yun, H. (2007). Cying for me, Cying for us: Relational dialectics in a Korean social network site. *Journal of Computer-Mediated Communication*, 13(1), article 15. http://jcmc.indiana.edu/vol13/issue1/kim.yun.html

Kwon, O. & Wen, Y. (2010). An empirical study of the factors affecting social network service use. *Computers in Human Behavior*, 26, 254-263.

Lange, P. (2007). Publicly private and privately public: Social networking on YouTube. *Journal of Computer-Mediated Communication*, 13(1). http://jcmc.indiana.edu/vol13/issue1/lange.html

Lenhart, A. (2009). Adults and Social Network Websites. *Pew Internet and American life project*. Retrieved May 5, 2013, from http://www.pewinternet.org/Reports/2009/Adults-and-Social-Network-Websites.aspx

Lenhart, A. & Madden, M. (2005). Teen Content Creators and Consumers. *Pew Internet and American life project*. Retrieved May 5, 2013, from http://www.pewinternet.org/Reports/2005/Teen-Content-Creators-and-Consumers.aspx

Lenhart, A. & Madden, M. (2007a). Social networking websites and teens: an overview. *Pew Internet and American life project*. Retrieved May 5, 2013, from http://www.pewinternet.org/Reports/2007/Social-Networking-Websites-and-Teens.aspx

Lenhart, A. & Madden, M. (2007b). Teens, Privacy and Online Social Networks. *Pew Internet and American life project*. Retrieved May 5, 2013, from http://www.pewinternet.org/Reports/2007/Teens-Privacy-and-Online-Social-Networks.aspx

Lenhart, A., Purcell, K., Smith, A. & Zickuhr, K. (2010). Social Media & Mobile Internet Use Among Teens and Young Adults. *Pew Internet and American life project*. Retrieved May 5, 2013, from http://www.pewinternet.org/Reports/2010/Social-Media-and-Young-Adults.aspx

Lewis, K., Kaufman, J., Gonzalez, M., Wimmerb, A. & Christakis, N. (2008). Tastes, ties, and time: A new social network dataset using Facebook.com. *Social Networks*, 30, 330-342.

Lockyer, L. & Patterson, J. (2008). Integrating social networking technologies in education: a case study of a formal learning environment. In *Proceedings of 8th IEEE international conference on advanced learning technologies*, Santander, Spain. Retrieved May 5, 2013, from http://ro.uow.edu.au/cgi/viewcontent.cgi?article=1074&context=edupapers

Madge, C., Meek, J., Wellens, J. & Hooley, T. (2009). Facebook, social integration and informal learning at university: 'It is more for socialising and talking to friends about work than for actually doing work'. *Learning, Media and Technology*, 34(2), 141-155.

Manago, A.M., Graham, M.B., Greenfield, P.M. & Salimkhan, G. (2008). Self-presentation and gender on MySpace. *Journal of Applied Developmental Psychology*, 29, 446-458.

Maness, J.M. (2006). Library 2.0 Theory: Web 2.0 and its implications for Libraries. *Webology*, 3(2). Retrieved May 5, 2013, from http://www.webology.ir/2006/v3n2/a25.html

Maranto, G. & Barton, M. (2010). Paradox and Promise: MySpace, Facebook, and the Sociopolitics of Social Networking in the Writing Classroom. *Computers and Composition*, 27(1), 36-47.

Mason, R. (2006). Learning technologies for adult continuing education. *Studies in Continuing Education*, 28(2), 121-133.

Mazman, S.G. & Usluel, Y.K. (2010). Modeling educational usage of Facebook. *Computers & Education*, 55, 444-453.

McLoughlin, C. & Lee, M.J.W. (2007). Social software and participatory learning: pedagogical choices with technology affordances in theWeb 2.0 era. Paper presented at the *Ascilite*, Singapore. Retrieved May 5, 2013, from http://www.ascilite.org.au/conferences/singapore07/procs/mcloughlin.pdf

Mitrano, T. (2006). A wider world: Youth, privacy, and social networking technologies. *EDUCAUSE Review* 41(6), 16-28. Retrieved May 5, 2013, from http://net.educause.edu/ir/library/pdf/ERM0660.pdf

Murphy, K.L. & Cifuentes, L. (2001). Using Web tools, collaborating, and learning online, *Distance Education*, 22(2), 285-305.

National School Boards Association (2007). *Creating and Connecting: Research and Guidelines on Social - and Educational - Networking*. Grunwald Associates. Retrieved May 5, 2013, from

http://www.nationaltechcenter.org/index.php/2007/08/21/creating-and-connecting-research-and-guidelines-on-online-social-and-educational-networking/

Ofcom (2008). *Social Networking Sites report*, Office of Communications, UK. Retrieved May 5, 2013, from http://www.ofcom.org.uk/advice/media_literacy/medlitpub/medlitpubrss/socialnetworking/

Palinscar, A.S. (1998). Social Constructivist perspectives on teaching and learning. *Annual Review of Psychology*, 49, 349-375.

Papacharissi, Z. (2009). The virtual geographies of social networks: a comparative analysis of Facebook, LinkedIn and ASmallWorld. *New Media Society*, 11, 199-220.

Pell, G. (2005). Use and misuse of Likert scales. *Medical Education*, 39, 970.

Pempek, T., Yermolayeva, Y.A. & Calvert, S.L. (2009). College students' social networking experiences on Facebook. *Journal of Applied Developmental Psychology*, 30, 227-238.

Prawat, R.S. (1996). Constructivisms, modern and postmodern. *Educational Psychologist*, 31(3), 215-225.

Preece, J., Nonnecke, B. & Andrews, D. (2004). The top five reasons for lurking: Improving community experiences for everyone. *Computers in Human Behavior*, 20(2), 201-223.

Rau, P.L.P., Gao, Q. & Ding, Y. (2008). Relationship between the level of intimacy and lurking in online social network services. *Computers in Human Behavior*, 24, 2757-2770.

Roblyer, M.D., McDaniel, M., Webb, M., Herman, J. & Witty, J.V. (2010). Findings on Facebook in higher education: A comparison of college faculty and student uses and perceptions of social networking sites, *Internet and Higher Education*, 13, 134-140.

Robson, C. (2002). *Real world research: a resource for social scientists and practitioner-researchers*. Madden, Mass.; Oxford, Blackwell Publishers.

Ryan, C. & Garland, R. (1999). The use of a specific non-response option on Likert-type scales. *Tourism Management*, 20, 107-113.

Salomon, G. & Perkins, D.N. (1998). Individual and Social Aspects of Learning. *Review of Research in Education*, 23, 1-24.

Selwyn, N. (2009). Faceworking: exploring students' education-related use of Facebook. *Learning, Media and Technology*, 34(2), 157-174.

Shapiro, S.M. (2009, January 22). Revolution, Facebook style. *New York Times Sunday Magazine*. Retrieved May 5, 2013, from http://www.nytimes.com/2009/01/25/magazine/25bloggers-t.html

Smith, M.K. (1999a). *Learning theory, the encyclopedia of informal education*, www.infed.org/biblio/b-learn.htm, Last update: September 03, 2009.

Smith, M.K. (1999b). *The social/situational orientation to learning, the encyclopedia of informal education*, www.infed.org/biblio/learning-social.htm, Last update: September 03, 2009.

Smith, W.P. & Kidder, D.L. (2010). You've been tagged! (Then again, maybe not): Employers and Facebook. *Business Horizons*, 53, 491-499.

Stutzman, F. (2006). An Evaluation of Identity-Sharing Behavior in Social Network Communities. *International Digital and Media Arts Journal*, 3(1). http://fredstutzman.com/papers/IDMA2006_Stutzman.pdf

Subrahmanyam, K., Reich, S.M., Waechter, N. & Espinoza, G. (2008). Online and offline social networks: Use of social networking sites by emerging adults. *Journal of Applied Developmental Psychology*, 29(6), 420-433.

Trend, R. (2005). Individual, situational and topic interest in geoscience among 11- and 12-year-old children. *Research Papers in Education*, 20(3), 271-302.

Trentin, G. (2009). Using a wiki to evaluate individual contribution to a collaborative learning project. *Journal of Computer Assisted Learning*, 25, 43-55.

Wright, K.B. (2005). Researching Internet-based populations: Advantages and disadvantages of online survey research, online questionnaire authoring software packages, and web survey services. *Journal of Computer-Mediated Communication*, 10(3), article 11. http://jcmc.indiana.edu/vol10/issue3/wright.html

Zhao, S., Grasmuck, S. & Martin, J. (2008). Identity construction on Facebook. *Computers in Human Behavior*, 24, 1816–1836.

**Appendix**

**Survey (translated from Greek)**

**Demographic and background information**

The following questions are related to your personal information and background.

| Some things about you... |
|---|

**1.** What is your gender?

Male   Female

**2.** What is your age?

**3.** What is your profession type?

**4.** What is your highest educational achievement?

Post-graduate (such as Ph.D, M.Sc.)

First degree (such as MA, B.Sc., BA)

High School

**Facebook Activities Questionnaire**

The following questions relate to your activities on Facebook.

**5.** On average, how often do you check your Facebook account?

Less than once a day

1-5 times a day

6-10 times a day

11-20 times a day

21-30 times a day

More than 30 times a day

**6.** On average, how much time do you spend on Facebook every day?

Less than 30 minutes

30 minutes-one hour

1-2 hours

2-5 hours

More than five hours

**7.** How frequently do you do on Facebook the underneath listed activities?

|  | Often | Sometimes | Rarely | Never |
|---|---|---|---|---|
| **a.** Browse my friends' profiles/walls/pages |  |  |  |  |
| **b.** Create events and send invitations |  |  |  |  |
| **c.** Create groups about specific topics |  |  |  |  |
| **d.** Edit my profile/change my profile picture |  |  |  |  |
| **e.** Find out about events |  |  |  |  |
| **f.** Listen to/find music |  |  |  |  |
| **g.** Look at others' photos |  |  |  |  |
| **h.** Look for new friends, send friend requests, add friend requests |  |  |  |  |
| **i.** Post links to YouTube.com |  |  |  |  |
| **j.** Read comments/posts |  |  |  |  |
| **k.** Search for profiles |  |  |  |  |
| **l.** Send personal messages |  |  |  |  |
| **m.** Update my status |  |  |  |  |
| **n.** Upload/tag photos |  |  |  |  |
| **o.** Visit/join groups to talk about specific topics |  |  |  |  |
| **p.** Watch video links |  |  |  |  |
| **q.** Write comments on photos, walls, etc. |  |  |  |  |

**8.** Please add any other comments you wish to make about your activities on Facebook

here. *(Optional)*

**Learning through Facebook questionnaire**

The following questions relate your attitudes and perceptions towards learning through Facebook.

**9.** Indicate your agreement (or otherwise) with the following statements related to learning through Facebook about issues that are of interest to you.

|  | Strongly Disagree | Disagree | Neither Agree nor Disagree | Agree | Strongly Agree | Not Applicable |
|---|---|---|---|---|---|---|
| **a.** I gain knowledge about issues that are of interest to me by asking other people on Facebook |  |  |  |  |  |  |
| **b.** I seek information about issues that are of interest to me by asking other people on Facebook |  |  |  |  |  |  |
| **c.** I get ideas/tips and hints about issues that are of interest to me by asking other people on Facebook |  |  |  |  |  |  |
| **d.** I get guidance about issues that are of interest to me by asking other people on Facebook |  |  |  |  |  |  |
| **e.** I use Facebook groups to keep myself updated |  |  |  |  |  |  |

| | | | | | | |
|---|---|---|---|---|---|---|
| about issues of interest (e.g. which I read on my wall updates) | | | | | | |
| **f.** I express my thoughts/ideas on my wall and get feedback which helps me elaborate/question my ideas and develop them further | | | | | | |
| **g.** I participate in wall discussions where everyone exchanges information and opinions about issues related to my interests | | | | | | |
| **h.** I actively participate (read/write posts, participate in wall discussions) in groups which are related to my interests | | | | | | |
| **i.** I chat with people on Facebook about issues related to my interests | | | | | | |

**10.** Indicate your agreement (or otherwise) with the following statements related to developing your skills and gaining knowledge through Facebook use.

| | Strongly Disagree | Disagree | Neither Agree nor | Agree | Strongly Agree | Not Applicable |
|---|---|---|---|---|---|---|
| | | | | | | |

| | | | Disagree | | | |
|---|---|---|---|---|---|---|
| **a.** Through Facebook use I have developed my writing skills (e.g., speed, spelling, syntax, etc) | | | | | | |
| **b.** Through Facebook use I have gained knowledge/developed my skills concerning native language use | | | | | | |
| **c.** Through Facebook use I have gained knowledge/developed my skills concerning foreign language use | | | | | | |

**11.** Indicate your agreement (or otherwise) with the following statements related to developing your skills in several socialization aspects through Facebook use.

| | Strongly Disagree | Disagree | Neither Agree nor Disagree | Agree | Strongly Agree | Not Applicable |
|---|---|---|---|---|---|---|
| **a.** I can more easily start a conversation with an unknown/little known person | | | | | | |
| **b.** I have learned when and how to pose questions | | | | | | |
| **c.** I have learned how to seek for help | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| **d.** I have learned to accept different thoughts and perspectives | | | | | | |
| **e.** I observe other people's behavior on Facebook and the consequences of those behaviors | | | | | | |
| **f.** I often present a different personality in chat discussions depending on the occasion or on how I want to promote myself | | | | | | |
| **g.** I present a different personality in my profile so as to promote myself better | | | | | | |
| **h.** I have learned how to get along with other people | | | | | | |

**12.** Indicate your agreement (or otherwise) with the following statements related to how Facebook as a software tool facilitates your learning.

| | Strongly Disagree | Disagree | Neither Agree nor Disagree | Agree | Strongly Agree | Not Applicable |
|---|---|---|---|---|---|---|
| **a.** Facebook as a software tool helps me to gain experience in computer related tasks (e.g., I can copy-paste faster, I can wield a mouse more easily, | | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| I know how to embed a video from YouTube, etc.) | | | | | |
| **b.** Facebook as a software tool helps me to find new/better ways to accomplish computer related tasks (e.g., I have learned easier ways (than I was already aware of) to copy-paste, how to use tabs on a browser, etc.) | | | | | |
| **c.** Facebook as a software tool facilitates my understanding of several ICT issues (e.g., what is uploading, what is the difference between real-time chat and wall-discussions) | | | | | |
| **d.** Facebook as a software tool helps me to become more self-regulated in learning how to use ICT | | | | | |
| **e.** Posted videos/images on Facebook walls help me reflect or gain new knowledge | | | | | |
| **f.** My personal wall as a software tool is a way to present my ideas or express them through representative | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| means (e.g. videos/images/songs) | | | | | | |
| **g.** My personal wall as a software tool facilitates my effort to directly present or express my ideas | | | | | | |

**13.** Please add any other comments you wish to make about your perceptions and attitudes concerning learning through Facebook here. *(Optional)*