Effects of Social Networking on Learning: The Opinions of Italian University Students

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Abstract While the use of social networks (SNs) and social media is increasingly permeating all sectors of the global society, in Italy there is an ongoing debate about its advantages and drawbacks for learning, especially within formal educational contexts. In order to contribute to such a debate, a study has been conducted, aimed to investigate the Italian university students' beliefs about the positive and negative effects of social networking on their learning and to identify any correlation between such beliefs and the students' characteristics. This chapter reports and discusses the results of the study, which was based on the data collected through a survey to 336 Italian university students (F = 63.6, 83.8 % aged below 32). Results revealed that Italian university students perceive social networks as useful tools for both improving their learning and connecting with their peers, but also that they are aware of their undesirable consequences, such as experiencing negative emotions, losing concentration and being prevented from engaging in extra-academic activities.

Keywords Social networking · Social networks · Social media · Web 2.0 · Learning · Perceived effect · University students · Higher education

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1 Introduction

This chapter, as the whole of this book, addresses a controversial issue, namely, the effects of the use of social networks on learning, and it does so by investigating Italian students' perceptions about this issue.

Before getting to the heart of the matter, some clarifications about the terminology that will be used in this contribution are needed. First of all, the term 'social networking', in the following, is used to indicate the use of the internet from PCs and mobile devices to create and share content within communities of people with similar interests. This can be done primarily by using one or many of the well-known social network or social media systems such as Facebook, Twitter, Instagram, Linked-In, Google+, Flickr, SlideShare, Delicious, YouTube. These are web-based applications through which users can create a personal profile and build a network of peers with whom such exchanges are privileged. Alternatively, social networking can take place through one or more internet communication and sharing services such as wikis, blogs, podcasts, clouds, etc., that are often referred to as 'Web 2.0' tools. All of these tools are believed to offer users' unprecedented affordances to research, create, communicate, share and thus learn. The underlying assumption for this belief is that online collaboration and virtual communities make constructivist and connectivist learning processes possible, thus enabling deep understanding and problem solving of complex matters [6, 24] and enhancing the social component of learning, which is an essential aspect for a community of inquiry to be effective [22, 26, 35].

Consistent with these assumptions, a large body of literature indicates that social networks are not only leisure environments, but they also allow learning processes [18, 30], although often informally and incidentally. As a matter of fact, the intertwining of informal, online learning with formal learning processes is becoming a frequent scenario, often considered desirable [23]. As a consequence, many researchers and practitioners [18, 21, 31] claim that teachers in schools and lecturers in universities should learn how best to take advantage of this scenario, in which social media play an essential role to enhance the learning experiences of their students. However, in many schools and universities mobile devices and their use are still banned [29]. Winters [36] maintains that one of the main reasons why the benefits of the new media are not yet manifesting themselves in educational systems, is that most attempts to promote them are not involving teachers, i.e. the main agents of change in any educational system.

On the other hand, there are also authors who point out important drawbacks of the use of these tools [1, 2, 4, 15, 33]. Among these shortcomings, the most commonly cited are their distractive power, the fact that they may induce reading habits that hinder prolonged concentration and focus, the risks of addiction, of privacy infringements and non-desired neglection of other interests.

The purpose of this chapter is to contribute to this debate, assuming that there may be both positive and negative influences of social networks on learning. The study belongs to a wider, international investigation, whereby different researchers in

different countries have used the same survey to collect the opinions of a sample of students about the pros and cons of the use of social networks with regard to their study skills and their ability to achieve their learning objectives. In particular, the aim of this chapter is to investigate the opinions of Italian university students who completed the survey on the perceived effects of the use of social networks on their learning as well as to identify possible correlations of the main positive and negative factors and students' background characteristics, such as age, gender, field of study, etc.

In particular, our research questions were:

- What are the beliefs of the Italian university students about the (positive and negative) effects of social networking on learning?
- Is there any correlation between the effects identified (both positive and negative) and the students' characteristics and social networking habits?

2 Use of Social Media: The Current Landscape

Studies concerning the use of social media and their impact in various sectors of life show that internet and social networks are increasingly permeating the society.

A literature review concerning social media technologies in U.S. higher education [5] provides a clear, though geographically limited picture of this phenomenon. Among others, it cites a national poll by the Harvard Institute of Politics [12], according to which over 90 % of students at 4 year colleges reported having Facebook profiles. College students' use of Facebook mostly reflects a one-to-many style, in which students create content and share it with others. Students interacted more frequently with existing friends than with new connections and were more likely to observe content than to produce it [20]. As for teachers, Seaman and Tinti-Kane [28] examined the impact of social media sites on personal, professional, and instructional use by higher education faculty members in the U.S. They reported that "[…] a clear pattern has emerged from this series of reports—faculty are much more willing to embrace social media in their personal lives than they are to use it for professional or teaching purposes." [28], p. 3.

As for the alleged positive impact of social networks in education, Tess [32] underlines that empirical evidence, so far, is missing.

Indeed, a few studies have investigated the students' opinions about social networks use, with special emphasis on negative aspects. An Australian study on adolescents showed that primary reasons for the non-use of these sites were "lack of motivation, poor use of time, preference for other forms of communication, preference for engaging in other activities, cybersafety concerns, and a dislike of self-presentation online" [2], p. 396. Another study [33] investigated the reasons why some university students decided not to use social network sites, finding that these students perceive them as a potentially addictive waste of time, which might violate privacy. Many of them also claimed that they did not trust virtual friendships and did not like sharing personal ideas and photos online. A survey addressing

students of four Spanish universities [3] investigated various aspects concerning the use of Web 2.0 tools for collaborative learning and group work among university students. The authors concluded that, apart from Facebook and Twitter, students still do not feel comfortable enough with uses of Web 2.0 tools for learning. However, as pointed out by Gewerc et al. [9], the choice of the tools is not the key problem: student-centred pedagogical approaches should promote the ecological framework within which collaborative learning processes are to take place. On the same vein, Gikas and Grant [10] used focus groups to investigate students' opinions about the use of social media and Web 2.0 tools on mobile devices. Among the advantages, they mentioned the affordances of technology for 'anywhere-anytime interaction', as well as collaboration and engagement in content creation. Among the disadvantages, frustration due to fear of failure of technology, to the small size of the devices used and to the tools' distractive power were the most mentioned.

To the best of our knowledge, only a few studies about the impact of social networks on education and, more broadly, on daily life, were carried out on Italian students. Among these, a recent study [34] highlighted that while 35 % of the world population is connected, and 26 % has an account on at least one social network, in Italy, 58 % of the population is connected (around 35 million people), while 42 % (that is around 26 million people) has an account on a social network. Besides, the penetration of mobile technology in Italy is considerably high (158 %, that is, more than 1,5 device per person). Another study [11] pointed out that in Italy (as all over the world) there are differences in the kinds of devices and use of social networks across generations: the so-called 'Millennials' (born approximately between early '80s and early 2000s) prefer smartphones and visual-oriented social networks (such as Instangram), the GenX (born between mid-'60s and early '80s) prefer tablets, the Baby Boomers (born between 1946 and mid-'60s) still opt for PCs and laptops. Facebook seems to be the most used social network in Italy, regardless of the users' age. Furthermore, two other studies [14, 27] reported and analyzed data about some of the most important variables affecting the digital divide, which still characterizes this country.

However, the studies addressing the impact of social media in Italy rarely focused on learning at university. For example, Milan [19] focused on the way this phenomenon is affecting the Italian market while Gatti Casati and Salsa [8] investigated the impact on people behavior in the work place. Actually, there are a few reports about single experiences/practices of use of social networks in specific educational contexts or general reviews about the potentialities offered by these technologies (see, e.g., [25]). For instance, Mazzoni and Iannone [17] investigated the way in which social network sites are used by "emerging adults", defined as "young people in the transition from adolescence to adulthood, and particularly those in their last year of high school or at university", to support their transition between adolescence and adulthood. However, no systematic study has been carried out so far in Italy with the aim of addressing the issue of how learners in higher education use social networks and what is the perceived impact of these tools on their learning. Thus, this chapter fills a gap in research by presenting evidence about the opinions of Italian university students on the pros and cons of social networking with regard to their study habits and, more generally, their learning.

3 Research Method, Data Collection and Sampling Technique

In order to investigate students' perceptions about advantages and disadvantages of social networking on learning, a web survey was designed. It comprised three sections: (1) background information about the respondents (age, gender, field of study, daily hours spent on social networks and using e-mail, whether the internet was used for specific tasks or activities such as studying, playing games, connecting with acquaintances, etc.); (Gordon, #1706) positive effects of social networking on study activities (25 items, see Table 1) and (3) negative effects of social networking on study activities (30 items, see Table 2). Both Sects. 2 and 3 items required participants to rate the extent to which each effect of social networking was true of them on a 5-point, Likert-type scale. After each of these two sections, additional open-ended questions allowed participants to enter their comments. Both positive

Table 1 Positive aspects investigated by the survey

	Social networking allows me to:
Pos 1	Learn new information and knowledge
Pos 2	Gain up-to-date information
Pos 3	Be more aware of global issues/local issues
Pos 4	To remember facts/aspects of the past
Pos 5	Communicate with my peers frequently
Pos 6	Collaborate with my peers frequently
Pos 7	Communicate with my peers from different universities
Pos 8	Communicate with my different communities
Pos 9	Develop intercrossing relationships with my peers (i.e. Artistic talents, sport and common interests)
Pos 10	Study independently
Pos 11	Overcome study stress
Pos 12	Complete my study more quickly
Pos 13	Understand and solve study problems easily
Pos 14	Scrutinize my research study more easily
Pos 15	Develop my personal and communication skills
Pos 16	Concentrate more on my reading and writing skills
Pos 17	To prepare my professional attitude toward study and work
Pos 18	Be more sustainable person
Pos 19	Provide reliable and scalable services
Pos 20	Become more "Greener" in my activities
Pos 21	Reduce carbon footprint in my activities
Pos 22	Acquire new acquaintances—work related
Pos 23	Acquire new acquaintances—friendship relationship
Pos 24	Acquire new acquaintances—romance relationship
Pos 25	Do whatever I want, say whatever I want, and be whoever I want

Table 2 Negative aspects investigated by the survey

	The use of social networking:
Neg 1	Prevents me from concentrating more on writing and reading skills
Neg 2	Prevents me from remembering the fundamental knowledge and skills
Neg 3	Scatters my attention
Neg 4	Decreases my grammar and proofreading skills
Neg 5	Decreases my deep thinking
Neg 6	Distracts me easily
Neg 7	Prevents me from participating in social activities
Neg 8	Prevents me from completing my work/study on time
Neg 9	Makes me sick and unhealthy
Neg 10	Bores me
Neg 11	Stresses me
Neg 12	Depresses me
Neg 13	Makes me feel lonely
Neg 14	Makes me lazy
Neg 15	Makes me addict
Neg 16	Makes me more gambler
Neg 17	Makes me insecure to release my personal details from the theft of personal information
Neg 18	Makes me receive an immoral images and information from unscrupulous people and it is difficult to act against them at present
Neg 19	Prevents me from having face to face contact with my family
Neg 20	Prevents me from having face to face contact with my friends
Neg 21	Prevents me from participating in physical activities
Neg 22	Prevents me from shopping in stores
Neg 23	Prevents me from watching television
Neg 24	Prevents me from reading the newspapers
Neg 25	Prevents me from talking on the phone/mobile
Neg 26	Prevents me from completing my work on time
Neg 27	Prevents me from completing my study on time
Neg 28	Increase privacy concerns
Neg 29	Increase security concerns
Neg 30	Increase intellectual property concerns

and negative effects concerned cognitive (e.g. “social networking scatters my attention”), social (e.g. “social networking allows me to communicate with my peers frequently”), organizational (e.g. “social networking prevents me from completing my study on time”) and security (e.g. “social networking increase my privacy concerns”) aspects. The full range of items is reported in Tables 1 and 2.

The survey design was coordinated by the editors of this book, and the development of the items was the result of a negotiation with the authors of the various chapters. The survey was delivered in English, assuming that most of the Italian

university students would be able to understand it, but answers to open-ended questions were accepted in Italian.

The survey was administered in Italy in 2013. A snowball sampling was used to reach the highest possible number of university students of all grades (undergraduate, graduate, master and PhD students). the use of this sampling technique prevented us to control the total number of the students reached by the survey, but the total number of respondents was 553. However, 217 cases were discarded because they were largely incomplete. Subsequent analyses were therefore carried out on 336 cases. Multiple imputation was used to handle missing values, which never exceeded 3 % in any of the variables considered. Results reported below are thus based on pooled statistics.

4 Data Analysis and Results

We used factor analysis to synthesize the information provided by the items of positive and negative effects of using social networks, derived factor scores and used them as criteria in a multivariate general linear model that specified background variables as predictors. This analysis allowed us to test how items of Sects. 2 and 3 could be grouped into a smaller set of latent variables grounding on their pattern of correlations and how the scores on these latent variables were associated to demographic and networking habits of the respondents.

In the following sections, we first provide data about the main features of the sample, then we provide a bird's eye on the positive and negative aspects of social networking and finally we report on the results of the factor analysis.

4.1 Sample Features

Participants were mostly females (63.6 %) and younger than 32 years (Table 3).

The field of study of participants was mainly humanities, followed by science and engineering (Table 4).

The majority of the respondents reported to devote less than an hour per day to social networking, while most of the remaining people reported spending between 1 and 5 h on this activity (Table 5). As for e-mail, an even larger proportion of the respondents reported using it only for less than an hour per day (Table 5). These

Table 3 Age of participants

Age range	Percentage
18–22	32.8
22–32	51.0
32–42	7.8
42–52	6.9
Over 52	1.5

Table 4 Field of study of participants

Field of study	Percentage
Humanities	40.0
Science and engineering	20.9
Health sciences	14.3
Economic and law	13.4
Information technology	6.3
Art and design	3.3
Others please specify	1.8

Table 5 Time spent on social networking and e-mail

Time spent	Social networking (%)	E-mail (%)
Less than an hour	53.4	71.6
Up to 5 h	40.6	23.9
5–10 h	4.8	4.2
10–20 h	0.6	0.3
Over 20 h	0.6	0.0

results suggest that very few of the respondents seem to be addicted to the use of these tools. In order to deal with sparse data in some categories of the two variables, in subsequent analyses these variables were dichotomously recoded as "less than one hour" and "more than one hour".

Participants reported that they use the internet for e-mailing (84.4 %), studying (78.8 %), seeking travel information and reservations (50.1 %) and chatting (48.5 %) (Fig. 1). Nobody reported using the internet for buying stocks or investing online, hence we did not report this category. Further uses, as reported in the open-ended questions, were "listening to music", "watching films", "information searching", "social network usage", "news reading", "practicing a hobby".

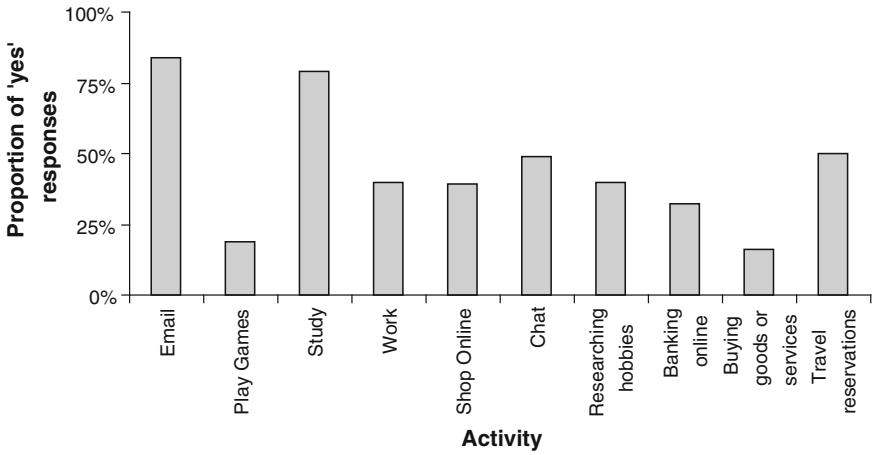

Fig. 1 Uses of the internet (respondents could choose more than one option)

5 Positive and Negative Aspects of Social Networking

5.1 Positive Aspects

As shown in Fig. 2, the highest mean ratings for positive effects were those of items 5 ("Communicate with my peers frequently"), 2 ("Gain up-to-date information") and 1 ("Learn new information and knowledge"), while the lowest ratings where those of items 16 ("Concentrate more on my reading and writing skills"), 24 ("Acquire new acquaintances—romance relationship") and 12 ("Complete my study more quickly"). Most of the open-ended answers stressed the importance of communication with peers, including appreciation for practical aspects like speed, ease and low-cost of contacts, as well as democracy of relationships.

5.2 Negative Aspects

The highest mean ratings for negative effects were those of items 6 ("Distracts me easily"), 3 ("Scatters my attention") and 1 ("Makes me lazy"), while the lowest were those of items 16 ("Makes me more gambler"), 22 ("Prevents me from shopping in stores") and 19 ("Prevents me from having face to face contact with my family") (Fig. 3). These data are consistent with answers to the open-ended questions, which include many references to the risk of dependence and/or addiction; loss of contact with real life, loss of concentration and risk of distraction from study.

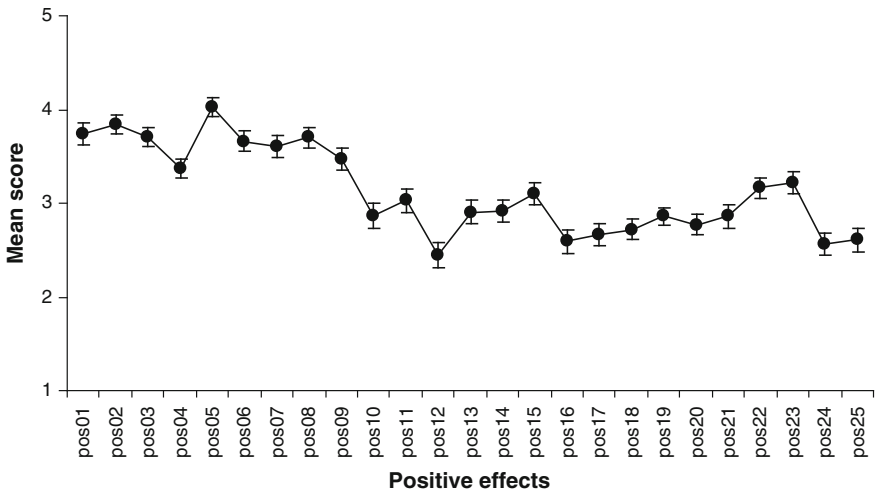

Fig. 2 Mean level of agreement with the positive and negative aspects of social networking (*1* strongly disagree; *5* strongly agree)

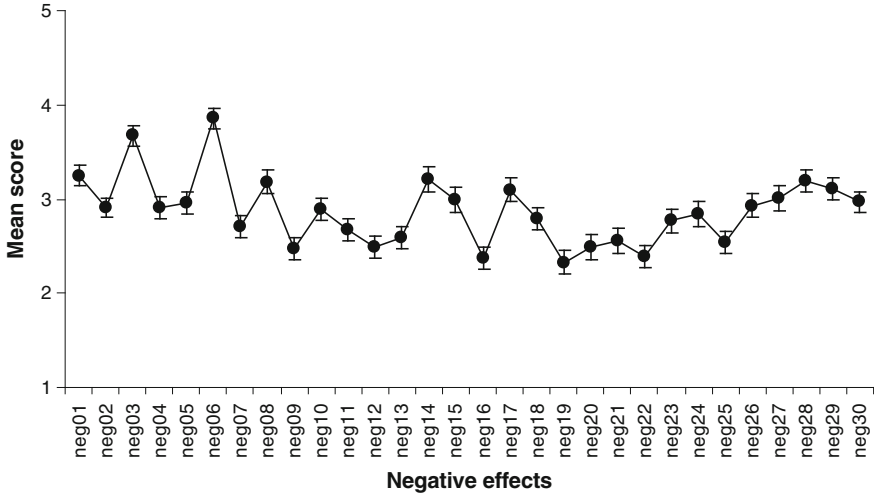

Fig. 3 Mean level of agreement with the positive and negative aspects of social networking (*1* strongly disagree; *5* strongly agree)

5.3 Factor Analysis of Positive and Negative Aspects of Social Networking

The simple inspection of item mean scores does not allow a parsimonious interpretation of results. Hence, we performed a factor analysis to synthesize the information and group items in a smaller set of composite variables.

As a first step in factor analyzing the students' positive and negative ways to use the social networking, we examined the item score distributions. As pointed out by Muthén and Kaplan [1985], item score distributions can be considered as substantially non-normal when their skewness and kurtosis are out of the [−1; +1] range. Actually, some items had skewness and/or kurtosis out this range, but since the departure from normality appeared to be modest (highest absolute skewness and kurtosis were 1.14 and 1.26, respectively) we decided to consider items as continuous indicators and to use Principal Axis Factoring in subsequent analyses.

The next step was to identify possible redundancies among the items, i.e., couples or groups of items whose correlation was high enough (i.e., >|0.65|) to suggest that they were basically mapping the same content, and thus that their composite score (i.e., the mean of scores of too much correlated items) could be used instead. We inspected the item correlation matrix and identified some couples or groups of items with high intercorrelations (Table 6). For these couples/groups of items a composite score (i.e., mean of item scores) was computed and used in subsequent analyses.

Items neg26 and neg27 ("Prevents me from completing my work on time" and "Prevents me from completing my study on time") were excluded since, as also

Table 6 New variables generated after screening for redundant items of positive and negative ways to use the social networking

Original items	Original content	New items	New content
pos01, pos02	Learn new information and knowledge Gain up-to-date information	pos0102	Get new information
pos05, pos06	Communicate with my peers frequently Collaborate with my peers frequently	pos0506	Communicate/collaborate with my peers frequently
pos07, pos08	Communicate with my peers from different universities Communicate with my different communities	pos0708	Communicate with my peers from different universities/communities
pos12, pos13, pos14	Complete my study more quickly Understand and solve study problems easily Scrutinize my research study more easily	pos121314	Studying more easily
pos20, pos21	Become more "Greener" in my activities Reduce carbon footprint in my activities	pos2021	Be environment-friendly
pos23, pos24	Acquire new acquaintances—friendship relationship Acquire new acquaintances—romance relationship	pos2324	Acquire new acquaintances
neg10, neg11, neg12, neg13	Bores me Stresses me Depresses me Makes me feel lonely	neg10111213	Feel bored, stressed, depressed or lonely
neg19, neg20, neg21	Prevents me from having face to face contact with my family Prevents me from having face to face contact with my friends Prevents me from participating in physical activities	neg192021	Prevents engagement in physical and social activities
neg28, neg29, neg30	Increase privacy concerns Increase security concerns Increase intellectual property concerns	neg282930	Raise confidentiality concerns

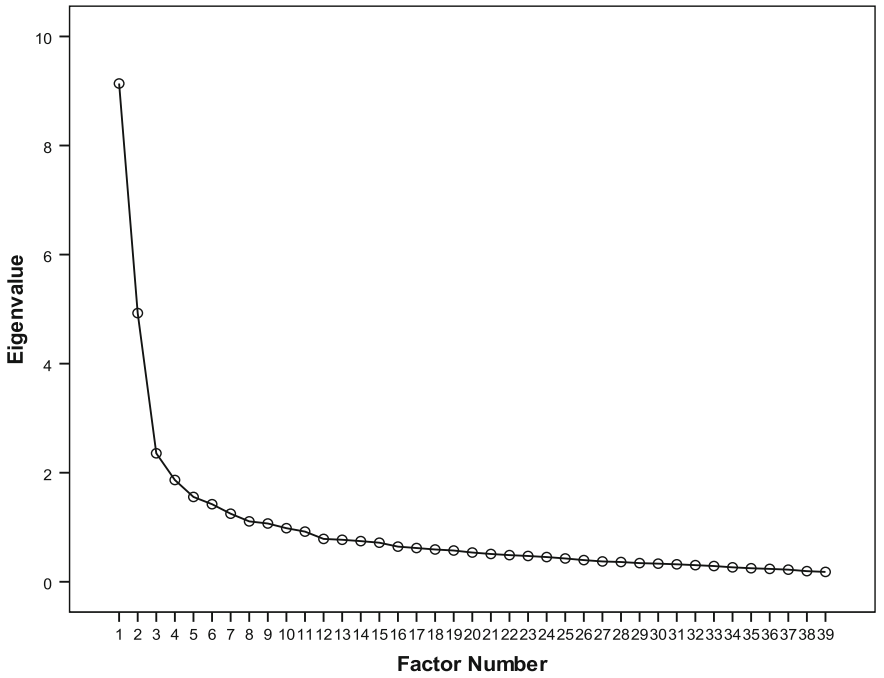

Fig. 4 Scree-plot for the factor analysis carried out on positive and negative ways to use the social networking

shown by their high intercorrelations, they were overlapping with the content of item neg08 ("Prevents me from completing my work/study on time").

We then factor analyzed the pooled correlation matrix using Principal Axis Factoring and Promax rotation. The scree-plot (Fig. 4) suggested that at least four factors should be extracted, as the line begins to level off after the fourth component.

However, we examined 4-, 5- and 6-factor solutions, and we found that the 5-factor solution most approached a simple solution (i.e., each item having a substantial [>0.30] loading on only one factor, with small/negligible loadings on the other factors) while accounting for a substantial amount of variance (50.88 %) (Table 7 Pattern matrix from the exploratory factor analysis on positive and negative ways to use the social networking7).

According to the content of the items with the highest loadings on each factor, factors were labelled as:

- F1: Widening learning opportunities and enhancing autonomy (WLO)
- F2: Causing negative emotions (NE)
- F3: Hindering concentration and study effectiveness (HCE)
- F4: Limiting extra-study activities (LESA)
- F5: Improving social interactions and global awareness (ISA)

Table 7 Pattern matrix from the exploratory factor analysis on positive and negative ways to use the social networking

	Factor				
Item	1	2	3	4	5
pos0102_Get new information	**0.42**	0.02	−0.05	−0.15	0.29
pos03_Be more aware of global issues/local issues	**0.34**	0.07	−0.08	−0.09	**0.35**
pos04_To remember facts/aspects of the past	0.24	0.05	−0.05	−0.06	**0.35**
pos0506_Communicate/collaborate with my peers frequently	0.16	−0.09	0.06	0.07	**0.71**
pos0708_Communicate with my peers from different universities or communities	0.16	0.16	−0.05	0.05	**0.67**
pos09_Develop intercrossing relationships with my peers (i.e. Artistic talents, sport and common interests)	0.27	−0.03	0.02	0.11	**0.47**
pos10_Study independently	**0.74**	0	0.04	−0.05	−0.04
pos11_Overcome study stress	**0.37**	0.04	−0.06	0.09	0.19
pos121314_Studying more easily	**0.8**	−0.05	0.03	0.06	−0.03
pos15_Develop my personal and communication skills	**0.44**	−0.02	−0.19	0.17	0.21
pos16_Concentrate more on my reading and writing skills	**0.62**	0.14	−0.23	0.03	−0.03
pos17_To prepare my professional attitude toward study and work	**0.82**	−0.01	−0.01	0.06	−0.02
pos18_Be more sustainable person	**0.72**	−0.02	0.08	−0.11	0.1
pos19_Provide reliable and scalable services	**0.65**	−0.1	0.12	−0.04	0.14
pos2021_Be environment-friendly	**0.58**	0.06	0.11	−0.13	0.11
pos22_Acquire new acquaintances—work related	**0.5**	0	0.11	−0.09	0.21
pos2324_Acquire new acquaintances	0.27	0.06	0.03	0.07	**0.41**
pos25_Do whatever I want, say whatever I want, and be whoever I want	**0.3**	−0.09	−0.02	0.09	0.11
neg01_Prevents me from concentrating more on writing and reading skills	−0.02	−0.15	**0.8**	−0.01	0.12
neg02_Prevents me from remembering the fundamental knowledge and skills	0.06	−0.11	**0.82**	−0.06	−0.13
neg03_Scatters my attention	−0.27	0.11	**0.49**	−0.06	0.27
neg04_Decreases my grammar and proofreading skills	0.08	0.06	**0.62**	−0.04	−0.15
neg05_Decreases my deep thinking	0.05	0.18	**0.55**	0.03	−0.14
neg06_Distracts me easily	−0.26	0.2	**0.3**	0.06	**0.34**
neg07_Prevents me from participating in social activities	0.21	0.14	**0.48**	0.09	−0.19

(continued)

Table 7 (continued)

	Factor				
Item	1	2	3	4	5
neg08_Prevents me from completing my work/study on time	−0.02	0.15	**0.5**	0.17	0.11
neg09_Makes me sick and unhealthy	0.09	**0.51**	0.05	0.12	−0.16
neg10111213_Feel bored, stressed, depressed and lonely	−0.06	**0.62**	0.03	0.03	−0.17
neg14_Makes me lazy	−0.12	**0.74**	0.01	−0.1	0.15
neg15_Makes me addict	−0.04	**0.72**	−0.01	0.04	0.18
neg16_Makes me more gambler	0.01	**0.53**	0	0.18	−0.08
neg17_Makes me insecure to release my personal details from the theft of personal information	0.01	**0.81**	−0.13	−0.2	0.06
neg18_Makes me receive an immoral images and information from unscrupulous people and it is difficult to act against them at present	0.04	**0.65**	0	−0.08	−0.11
neg192021_Prevents engagement in physical and social activities	0.07	**0.32**	−0.01	**0.55**	−0.09
neg22_Prevents me from shopping in stores	0.05	0.04	−0.07	**0.75**	−0.07
neg23_Prevents me from watching television	−0.07	−0.05	−0.03	**0.71**	0.22
neg24_Prevents me from reading the newspapers	−0.08	−0.16	0.09	**0.79**	0.14
neg25_Prevents me from talking on the phone/mobile	0	−0.08	−0.01	**0.74**	−0.05
neg282930_Raise confidentiality concerns	0.06	**0.42**	0	0.01	0.16
Correlation with 2	−0.20	–	–	–	–
Correlation with 3	0.44	0.59	–	–	–
Correlation with 4	−0.02	0.54	0.42	–	–
Correlation with 5	0.29	−0.29	−0.24	−0.29	–

We then computed factor scores and used them as criterion variables in a main-effects-only multivariate analysis of variance (MANOVA) model, followed by Sidak-corrected post hoc comparisons. Demographic variables, education background and networking habits were the predictors. Box's test for the equality of covariance matrices was not significant ($M = 288.875$, $F(210,6836.535) = 1.042$, $p = 0.327$), suggesting that MANOVA could be applied. After controlling for multiple comparisons we found significant multivariate effects of age (Pillai's Trace = 0.113, $F(15,771) = 2.005$, $p = 0.032$), daily hours spent on social networks (Pillai's Trace = 0.102, $F(5,255) = 5.768$, $p < 0.001$), using the internet for studying (Pillai's Trace = .089, $F(5,255) = 4.988$, $p = 0.001$) and using the internet for chatting (Pillai's Trace = 0.069, $F(5,255) = 3.805$, $p = 0.008$)

The multivariate effect of age was due to significant differences among age groups in WLO ($F(3,259) = 4.784$, $p = 0.003$), since the 42–52 year group scored significantly higher than the 22–32 year group ($p = 0.002$). The multivariate effect of daily hours spent on social networks was due to higher scores on WLO ($F(1,259) = 13.052$, $p < 0.001$) and ISA ($F(1,259) = 23.685$, $p < 0.001$) for those who use social networks more than one hour per day and to higher scores in HCE ($F(1,259) = 6.331$, $p = 0.012$) for those who use social networks less than hour per day. The multivariate effect of using the internet for studying was due to higher scores on ISA ($F(1,259) = 5.030$, $p = 0.026$) of those who do use the internet for studying. The multivariate effect of using the internet for chatting was due to higher scores on ISA ($F(1,259) = 15.665$, $p < 0.001$) of those who use the internet for chatting.

Although the multivariate effect of the variable was not significant, we also found significant univariate effects for gender in ISA ($F(1,259) = 5.758$, $p = 0.017$; females > males), for field of study in WLO ($F(6,259) = 2.523$, $p = 0.022$; Economics and Finance > Science and Engineering), for using internet for e-mailing in LESA ($F(1,259) = 5.371$, $p = 0.021$; No > Yes), and for using the internet for shopping in WLO ($F(1,259) = 5.640$, $p = 0.018$; Yes > No).

6 Discussion

The aim of this study was to survey the opinions of Italian university students on the pros and cons of social networking and find possible correlations with their profile (age, gender, background and social networking habits).

Participants were asked to rate their agreement with each of 55 items mapping positive and negative effects of social networking. After screening the items for redundancies, a factor analysis suggested that items could be grouped into five latent variables that we named (1) Widening learning opportunities and enhancing of autonomy, (Gordon, #1706), Causing negative emotions, (3) Hindering concentration and study effectiveness, (Gordon, #1706) Limiting extra-study activities and (5) Improving social interactions and global awareness.

Together with the inspection of single items mean scores, the results of this study provide interesting answers to our first research question (i.e. what are the beliefs of the Italian university students about the effects of social networking on learning?), by suggesting that students perceive social networking as useful tools for widening their learning opportunities through connections to peers and access to information, but also that they are aware of their undesirable consequences, such as experiencing negative emotions, losing concentration and being prevented from engaging in extra-academic activities.

In addition, further statistics were conducted to address the second research question (i.e. "is there any correlation between the effects identified and the students' characteristics?"). The multivariate analysis of variance showed that widening of learning opportunities and enhancing of autonomy was more appreciated by older participants, somewhat contradicting the common belief that younger

people should be more positive towards social networking. Not surprisingly, respondents who use social networks more than 1 h per day scored higher on both widening learning opportunities and enhancing autonomy and improving social interactions and global awareness; while respondents who use social networks less than 1 h scored higher on hindering concentration and study effectiveness. Therefore, students' beliefs about the effects of social networking seem to be related to the amount of use they make of its tools: the more they believe in their benefits, the more they use them, the more they believe in their distractive power, the less they use them. However, since this was a cross-sectional study, it is not possible to determine whether a student spends less time on social networks because she/he experienced their negative effects, or the other way around. The same argument applies in explaining why those who do not use the internet for e-mailing scored higher on the belief that social networking limits their extra-study activities than those who do.

Students that spend more than 1 h per day on social networks and that use internet for studying, chatting and shopping reported higher scores on two positive factors such as widening learning opportunities and enhancing autonomy and improving social interactions and global awareness. They also reported lower scores on a negative factor such as hindering concentration and study effectiveness than students who spend less time on social networks. These results suggest that frequent users of social networks may tend to appreciate their advantages more than they acknowledge their disadvantages, but it should be noted that it is possible that the time spent using these tools cuts into time normally spent on other activities including studying, and hence might undermine academic achievement [13].

We also found that females and economics and finance students appreciate the opportunity to widen their learning opportunities and enhance their autonomy more than males and science and engineering students, respectively. These results are consistent with the well-known gender differences in academic motivation and achievement (for a review, see, e.g., [7]) and with studies that report that engineering students are less likely to be heavy social network users (see, e.g., [16]).

As for the study limitations, there are at least two aspects that deserve being mentioned. The first is the sampling method used: it is well known that the snowball sampling technique does not guarantee representativeness of the sample obtained. While the demographic features of the sample used appear to be in line with the official data about previous academic years,[1] carrying out a rigorous check of representativeness was not possible due to lack of updated data about the distribution of the real population. The second limitation is that, since the survey questions and answer options were prepared for an international target, they do not fit the Italian target as well as they would if they were prepared for especially for it. However, this limitation is counterbalanced by the advantage that the results obtained in all of the other countries and illustrated in the other chapters of this book will allow to get an international panorama on the study theme.

[1] http://statistica.miur.it/ustat/Statistiche/IU_home.asp.

7 Conclusions

The attitude towards social networking that emerges from the results presented in this chapter is twofold. The positive effects are widely recognized, and those that are mostly appreciated concern the possibility to access information and communicate and collaborate with peers. On the other hand, the negative aspects, and specifically, the risks of becoming addict and to be distracted by the virtual world so to lose concentration, are also clearly perceived by the respondents. As it could be expected, the students who use these tools more tend to appreciate their advantages more than the others, while the students who use them less are those who fear their interference with concentration and attention more.

While researchers appear to be inclined to emphasize the importance of the advantages of social networking tools for education and thus advocate the need for a bidirectional contamination of formal and informal learning [23, 28], the Italian higher education students involved in this survey tend to see both the positive and the negative aspects of the use of these tools as of equal importance. Therefore, a crucial issue to be addressed by future research appears to be whether the perceived risks make students more cautious than researchers towards the use of these tools in learning and teaching activities.

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