

Study habits and technology use in Italian university students

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Abstract

Background. Students' ability of learning is influenced by study habits. Among these, the use of technologies has assumed a controversial role. The aim of this paper is to analyse studying approach, the use of technologies and how they affect study habits in a population of university students addressed by the "Sportello Salute Giovani" ("Youth Health Information Desk") questionnaire.

Methods. 16 questions referred to the approach to studying and the use of technologies (number 77-93) were analyzed. Absolute and relative frequencies were calculated. Stratification for sex, age and socio-economic status were performed and Chi square test was used to test the difference between sex, age class and socio-economic groups.

Results. 99.7% of students declared to have at least one mobile phone and 68.7% to use smartphones, i-phones and i-pads. Males (20.9% vs 14.9% female, $p < 0.05$), older students (31.7% among 25-30 years old students vs 21.3% among 18-21 years old, $p < 0.05$) and students with the highest socio-economic level (87.8% vs 54.2% of the lowest) seem more likely to use digital technologies/Internet for educational purposes.

Conclusion. Our survey revealed that most college students still prefer approach the study using books instead of digital tools, but this attitude is conflicting with how many hours they use computers and surf Internet per weeks. Therefore, further studies are needed to understand better technology influence on study habits and its implication on health.

Key words

- education
- study habits
- technologies
- mobile devices

INTRODUCTION

Almost 20 years ago Al Hilawani and Sartawi [1] defined study skills as the skills and habits necessary for getting to know and retrieving information. Competencies of the process of studying are: to acquire and to record information, to record appropriate responses to those information, to locate the required information, to organize and to manage information synthesizing these in order to create adequate responses and to memorize and to retrieve information on demand [2].

On the other hand, study habits are considered how a student organizes his or her private reading, outside lecture hours, in order to become expert on a particular topic [3]. Hence, study habits can be good if they permit to a student to excel or can be bad if they lead a student to get mediocre grades. To sum up, a good process of studying does not consist only in memorizing facts but in recalling when necessary these facts, and related information, and to use them in an intelligent way [4]. Therefore, study habits influence students' ability of learning and technologies devices play a crucial role among factors which can condition study habits. A recent study commissioned by McGraw-Hill Education

has revealed that the use of mobile devices and online activities can help the process of studying but, on the other hand, they can influence it badly. According to this survey, online activities represent the main distraction for almost 40% of the students interviewed; moreover, more than 50% of the interviewed affirmed to use laptop, tablets and phones to text friends when they are studying [5]. On the other hand, the same survey has pointed out that students take equally advantage by using technologies (mostly smartphones than tablets or computer), for their studying. Moreover, the use of digital tools for studying permit them to save time that they employ above all for sleeping [5].

Different authors in literature have stressed on the studying benefits deriving by the use of mobile devices for learning, because these could lead to an improved access to education with better educational outcomes [4]. Mobile phones represent an important resource to improve students literary and numeracy skills [6], and they also permit both independent and collaborative learning experiences [7] leading to a personalized learning process. Moreover, cell-phones are useful to support lifelong learning that occurs spontaneously in



several settings not only represented by the formal ones [8]. These benefits are balanced by the negative effects of the improper use of these tools and of psychological disorders that can be related to their use [4]. The risk, especially important in young people who represent the largest users, is to address all human relations in a “surreal”, and that the hyper-use to manage relationships, emotions and states of loneliness turns into a real addiction. Another possible risk associated to the excessive use of mobile phone is the exponential growth in the levels of stress and anxiety due in particular to the fact that it can be accessed and controlled at all times and to the possibility to just reach out and control other people in any place and time. The excessive use of cellular phones has led to the development of specific disorders as the “disconnection syndrome” or the “syndrome of ringing or vibration ghost” [9].

Other tools whose prolonged and incorrect use could cause a sense of addiction are personal computer connected to Internet and TV. Their incorrect use could also affect studying in college students [10]. Some data about technology use in Italian adolescents (11, 13 and 15 years old children) has been provided by the Italian HBSC Report as part of the article on the risk of sedentary lifestyle [11]. However, no information about study habits and technology use among Italian university population are available.

The objective of this paper is to present the results of the “Sportello Salute Giovani” project in order to analyze the approach to study, the use of technologies and how the later can affect study habits in university students.

METHODS

The information regarding the study population and study design, including the development process of the “Sportello Salute Giovani” questionnaire, the questionnaire contents, the data entry and cleaning, the codification of variables and the sample characteristics, have been described in the methodological article [12]. To meet the aim of the present article, only the section referred to the approach to studying and the use of technologies (questions 77-93) was analyzed.

Six questions (number 77-82) investigated the approach towards studying: they were aimed to define the students’ self-perception of their academic results, pressure due to the studying burden, students’ attitude to study alone or with colleagues, students’ predilection of studying with paper documents, books or digital materials.

Four questions (number 83-86) were aimed to investigate how many hours students spent watching TV, using computers, surfing on Internet or in social networks, while two questions (number 87 and 88) were addressed if students belonged to some associations and their typology.

Finally, the last four questions (90-93) were aimed to investigate students’ habits with technology devices, such as cellular phones, smartphones and their services (sms sending, hours spent chatting).

For each question absolute and relative frequencies were calculated. Furthermore, analyses were stratified

for sex, age and socio-economic status as described in the article of de Waure *et al.* [12]. Chi square was used to test the difference between sex, age class and socio-economic groups. A p value < 0.05 was considered statistically significant.

Tables and graphs were used to summarize results. Questions about similar topics and with comparable answers were grouped together.

RESULTS

The complete tabular presentation of the data regarding this section, including stratification by sex, age class and socio-economic status, can be found in the Appendix which is available online as Supplementary Material at www.iss.it/anna.

Most of students declared to have good or very good academic results although most of them felt to be sometimes or often “under pressure”.

Figure 1 shows that most of students declared “to like enough” (with percentages around 50%) studying alone, studying in group, using book and paper documents and digital technologies, but interesting differences were highlighted after the stratification (see tables in the Appendix).

Figure 2 shows the section about technology use. Most students declared to spend time using computer, watching TV, surfing on Internet and using social networks ranging from less than 7 to 21 hours, with higher weekly use of TV and social networks.

Only 36.4% of students declared to belong to some association: most of them was involved in charities (33.4%), sports (30.1%) and religious groups (14.7%).

Almost all students (99.7%) affirmed to have at least one mobile phones (13.8% had two or more than two mobile phone), 68.7% declared to use devices as smartphones, i-phones and ipads. Most of students (41.1%) declared to send up to 50 SMS per day while 64.1% affirmed to talk on the phone less than one hour a day.

Stratification by sex

Study habits and technology use show interesting differences with respect to sex. Higher percentage of females declared to feel a lot under pressure for study reasons (27.7% *vs* 18.6%, $p < 0.05$), to prefer studying alone (24.9% *vs* 19.4%, $p < 0.05$) and only with the support of books or papers (28.7% *vs* 20.5%, $p < 0.05$).

On the other side, males declared to like a lot using new digital technologies/Internet for educational purposes (20.9% *vs* 14.9%, $p < 0.05$) and their attitudes were corroborated by the weekly time spent on personal computer (32.8% of males spent more than 22-28 hours/week *vs* 18.3% of females, $p < 0.05$) and surfing in Internet (31.0% of males spent more than 22-28 hours/week *vs* 20.0% of females, $p < 0.05$). On the contrary, no relevant differences were recorded in the time spent using social networks or talking on phone and in the use of devices as smartphone/i-phone/i-pad.

Stratification by age groups

Older students declared to feel a lot under pressure for study reasons (31.7% among 25-30 years old students, 25.9% among 22-24 years old and 21.3% among

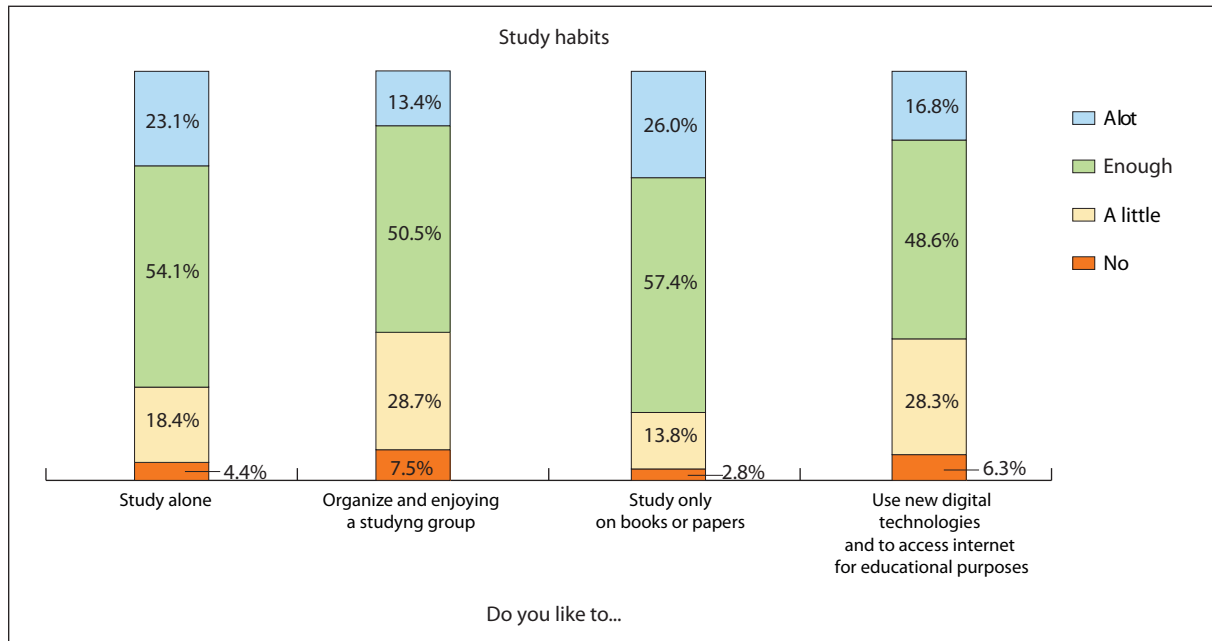


Figure 1
Study habits among Italian university students.

18-21 years old, $p < 0.05$) and seem more likely to use digital technologies/Internet for educational purposes (22.1% among 25-30 years old students, 16.9% among 22-24 years old and 15.2% among 18-21 year old, $p < 0.05$). Similarly, older students spent longer time using their personal computer (33.6% among 25-30 years old students spent more than 22-28 hours/week, 24.7% among 22-24 years old and 18.5% among 18-21 years old, $p < 0.05$) and surfing on Internet (31.5% among 25-30 years old students spent more than 22-28 hours/week, 23.7% among 22-24 years old and 21.1% among 18-21 years old, $p < 0.05$).

No relevant differences were recorded in the time spent using social networks or talking on phone.

Stratification by socio-economic level

Significant differences related to the socio-economic level were shown in the self-perception of study results. In fact, the percentage of students that perceived their study results as very good was higher in the high socio-economic class (31.9%) and decreased with the decrease of the socio-economic level reaching 13.7% in the lower socio-economic group ($p < 0.05$).

Furthermore, the use of devices as smartphones, i-pad or i-phones showed a linear trend with the declared socio-economic level, ranging from 54.2% among students belonging to the lowest level to the 87.8% among those of the highest.

No relevant differences were recorded in the other variables.

DISCUSSION

The present survey revealed that most college students still prefer approach the studying using books instead of digital tools. This attitude is conflicting with how many hours they use computers and surf Internet

per weeks. Most of students answered to use computers and Internet up to 21 hours per week. These results are corroborated by the results of a survey administered to 549 undergraduate college students attending a highly selective Midwestern university in which 95% of the students affirmed to use Internet every day and the use was mainly related to sending emails, surfing the web, chatting and, in lesser measure, to conduct research [13]. Computers and Internet are tools even more utilized for educational purposes. As it is stated in another survey addressing 1228 college students, conducted within the United States in 2014, laptops and notebooks were the most commonly (89%) used mobile device for school work every week [14]. Moreover, the vast majority of students interviewed affirmed that using digital tools, mainly tablets, will transform the way of learning in future making it also more fun [14]. Computers are reputed a good supplement for learning process also by Cameroonian students of the University of Buea, participating to a survey realized in the academic year 2009/2010, because they facilitate the learning process [15]. High percentages of college students owning a personal computer (97.3%) and accessing to Internet (98%) were confirmed by another survey administered to 299 undergraduate students a mid Atlantic university in which Authors investigated perceived stress, technology use and disruptions and social support [10]. In the same survey, 97% of students stated to own a mobile phone, but a quarter of the interviewed declared to be disrupted by technology in doing or completing their school-works. Mostly, this disruption was caused by instant messenger although the authors have noticed that most of the disruption was caused during stressful days in which students tend to communicate with family or friends [10].

The cell phone is one of the most rapidly growing tech-

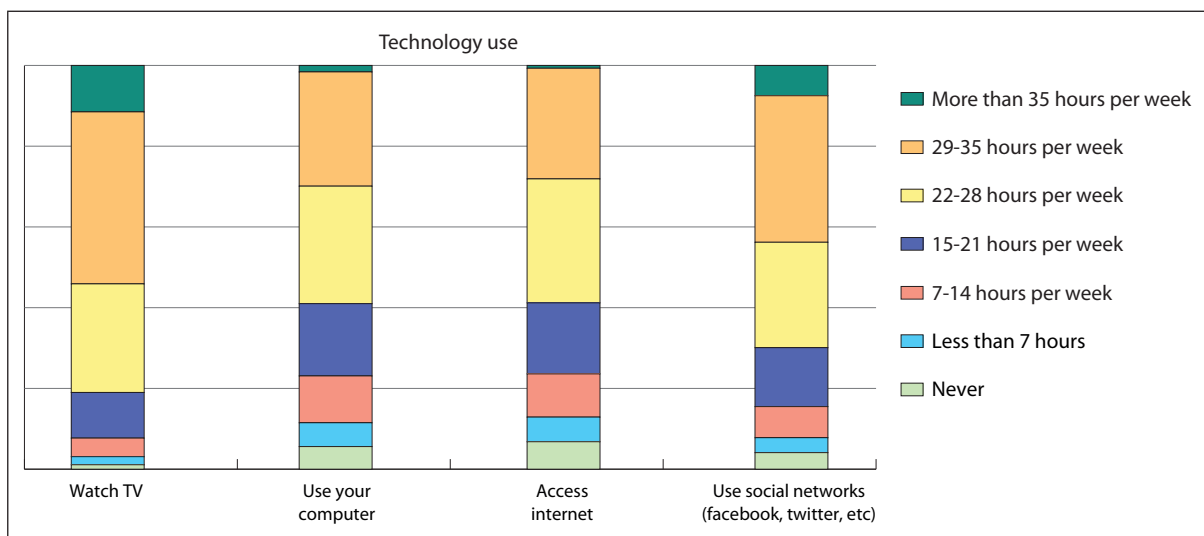


Figure 2
Technology use among Italian university students.

nologies in the world with more than 6 billion subscribers as reported by United Nations in 2013 [4]. In our survey, almost all students have a mobile phone (99.7%) and 68.7% of them has also a device like tablets/i-pads. The percentage of students sending up to 50 SMS per day is high (more than 40%), while a lesser use is done for calling. The increase use of mobile phones and the possibility to access Internet, surfing the web and chatting on social networks can have effects towards the students' studying attitudes: in a survey administered to students attending the 1st year in the Faculty of Arts of the University of Zimbabwe all the respondents declared not to switch off their mobile phones during studying time, while 65% indicated to put on silent their phones where they study [4]. Furthermore, over 50% stated they receive or make calls while they are studying, but 90% of these calls are not for educational purposes so they distract students. At the same time, 75% of the respondents affirmed sending or receiving text message during study time, but the majority of these messages were not related to the study. Further, another source of distraction related to mobile phones is provoked by the willing of checking their mobile phones several times bringing forward calls, messages or mails and by the feeling of upset or stress if there is network accessibility or phone malfunction. Moreover, respondents owing an Internet enabled mobile phone declared to visit websites during their study time, mostly for educational purpose, even though 20% affirmed to access Internet for non-educational aim. Furthermore, 70% of the interviewed people admitted accessing social networks during their studying time and above all for non-educational pur-

poses [4]. These students' attitudes can condition their sociability and the ability to stay with friends and also with family members. Staying with friends represents a peer interaction which is useful to strengthen personal identity and cultural behaviors as it is stressed in Cavallo *et al.* study [11]. Northrup in 2001 [16] affirmed that more the level of interaction of students raises more their level of learning increases, although evidence in literature support the fact that Internet use is associated with greater social and psychological wellbeing. Moreover, other research support the thesis that people who use Internet for communicating with other developed more strong verbal skills and empathy [17].

Nevertheless this, it has to be taken into consideration that a wide use of Internet could lead to depression among college students as Kotikalapudi *et al.* [18] reported in their survey. Other bad habits related to the great use of computer (or also watching TV) are inactivity (sedentary behaviors) and the consumption of hyper-caloric food that could lead to overweight with its health outcomes [11].

In conclusion, our survey gives a picture of the study habits and the use of technology among a big sample of Italian university students, but further studies are needed to understand the implication of the technology revolution for students' health and performance.

Conflict of interest statement

None.

Submitted on invitation.

Accepted on 16 April 2015.

REFERENCES

1. Al Hilawani YA and Sartawi AA. Study skills and habits of female university students. *Coll Stud J* 1997;31:537-44.
2. Hoover JJ. Study skills. In: Polloway EA, Patton JR, Payne JS, Payne RA (Eds). *Strategies for teaching learners with special needs*, 4th ed. New York: Macmillan Publishing Company; 1989.



3. Azikiwe U. *Study approaches of university students. WCCI Region II Forum 1998 Lagos*. Vol. 2. p. 106-14.
4. Kahari L. The effects of cell phone use on the study habits of University of Zimbabwe – First Year Faculty of Arts students, *Int J Educ Res* 2013;1(10).
5. Belardi B. Texting while studying: new study from McGraw-Hill Education reveals that technology can be students' best friend and worst enemy [internet]. McGraw-Hill Education 2013 Nov 20. Available from: www.mheducation.com/about/news-room/texting-while-studying-new-study-mcgraw-hill-education-reveals-technology-can-be.
6. Mc Neal T, Van't Hooft M. Anywhere, anytime: using mobile phones for learning. *J Res Centre Educational Technol* 2006;2(2):24-31.
7. Attewell J. *From research and development to mobile learning. Tools for education and training providers and their learners*. Presented at the mLearn 2005: 4th World Conference on Mobile Learning, Cape Town, 25-28 October 2005.
8. Brown T. Towards a model for M-learning in Africa. *International JI. On E-learning* 2005;4(3):299-315.
9. Marazziti D, Presta S, Baroni S, Silvestri S, Dell'Osso L. Behavioral addictions: a novel challenge for psychopharmacology. *CNS Spectr* 2014;19(6):486-95.
10. Gemmill E, Peterson M. Technology use among college students: implications for student affairs professionals. *NASPA J* 2006;43(2):280-300.
11. Cavallo F, Giacchi M, Vieno A, Galeone D, Tomba A, Lamberti A, Nardone P, Andreozzi S. *Studio HBSC in Italia (Health Behavior in School-aged children). Rapporto sui dati 2010*. Roma: Istituto Superiore di Sanità; 2013. (Rapporti ISTISAN, 13/5). Available from: www.iss.it/publ/index.php?lang=1&sid=2685&tipo=5.
12. de Waure C, Poscia A, Virdis A, Di Pietro ML, Ricciardi W. Sportello Salute Giovani project: study population, questionnaire, data management and sample description. *Ann Ist Super Sanità* 2015;51(2):96-8.
13. Mokhtari K, Reichard CA, Gardner A. The impact of internet and television use on the reading habits and practices of college students. *J Adolesc Adult Lit* 2009;52(7):609-19.
14. Poll H. Pearson student mobile device survey 2014 – National Report: College Students [internet]. Pearson; 16 May 2014.
15. Mbah TB. The impact of ICT on students' study habits. Case study: University of Buea, Cameroon. *J Sci Technol Educ Res* 2010;1(5):107-10.
16. Northrup P. A framework for designing interactivity into web-based instruction. *Educational Technol* 2001;41(2):31-9.
17. Bonebrake K. College students' Internet use, relationship formation, and personality correlates. *Cyberpsychol Behav* 2002;5(6):551-7. doi:10.1089/109493102321018196
18. Kotikalapudi R, Chellappan S, Montgomery F, Wunsch D, Lutzen K. Associating internet usage with depressive behavior among college students. *IEE Technol Soc Magazine* 2012;73:80.