

EXPLORING THE USE OF SOCIAL NETWORK SITES ON ACCOUNTING EDUCATION: A SOCIAL CONSTRUCTIVIST APPROACH

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RESUMEN

Background. Over the course of the last few years, social media technologies such as blogs, microblogs, digital videos, podcasts, wikis, and social networks, have seen a dramatic increase in adoption rates, especially among new generations. The so called Web 2.0 services are remarkably effective in connecting people and in facilitating the exchange of information. These tools are described as social media technologies or social software, underlining their ability to facilitate the establishment of relationships and the development of networks. Social networking sites (SNS) such as Facebook or MySpace have proved to be extremely popular among students. Pegrum (2009, p. 27-28) states that “the reality is that students are already using social networking sites (SNS) and the educators have the choice to work with or against them. The advantage of the former strategy is that it is possible to openly address concerns over Internet safety or time spent online, attempting to provide guidance in such areas.” However, the development of digital literacy is not the unique and main advantage. Social software characteristics and SNS in particular fit well the requirements of a social constructivist approach to education.

Aims. Given the apparent synergy between the technological characteristics of SNSs and the models of learning being actively promoted in Spanish and European Higher Education, the main research question being investigated is whether the use of SNSs could contribute significantly to the development of basic skills, required by new education models, under a social constructivist pedagogy

Sample – method. From this standpoint, a social network, with restricted access only to registered students, is established to develop an International Accounting course with the purpose of assisting learners in developing a set of transversal skills that are essential in becoming a qualified accountant. Around 130 students, belonging to two different classes, participate in the project and share a common virtual space in the SNS. Students are evaluated through final examination and, additionally, through optional assignments and participation in the class and the SNS.

Results. The experience, according to students’ opinion, was deemed as quite positive. Close to 80% of students would prefer the use of SNS as first option if they had to enrol again in the subject. In their opinion the experience contributed to a higher implication in the subject, a deeper collaboration with other students and the teaching staff as well as to a deeper learning with a strong emphasis in the collaborative aspect. In their opinion, the use of SNS for academic purposes is a recommended tool that helped them to develop key skills.

1.- INTRODUCTION

Over the course of the last few years, social media technologies such as blogs, microblogs, digital videos, podcasts, wikis, and social networks, have seen a dramatic increase in adoption rates, especially among new generations. The so called Web 2.0 services, that are remarkably effective in connecting people and in facilitating the exchange of information, provides new opportunities for improving the acquisition of transversal competences in high education. A previous experiment based on the use of a wiki to provide materials in an International Accounting course and to increase the students' engagement concluded that the wiki was a useful tool to organise contents of the course but that only the teacher did an intensive work on knowledge creation whereas student only use the platform to get access to the information but not to contribute to it. The lack of interactivity of the platform, the poor design of the tasks, the low impact of participation in the final assessment and the technological limitations of students are some of the reasons that explained this result, in line with the failed experiment reported by Cole (2008). From this standpoint, we decided to use a Social Network Sites (SNS) to support student engagement and to develop some digital and transversal competences that are essential in becoming a qualified accountant. SNSs, such as Facebook or MySpace, have proved to be extremely popular among students, therefore a higher degree of student engagement is expected. Also SNSs fit well the requirements of a social constructivist approach to education. Objectives were satisfactory achieved at the end of the course.

2.- INSTITUTIONAL AND EDUCATIONAL CONTEXT

The reform of the European university system according to the Bologna Declaration (European Ministers of Education, 1999) is conceived as a change in the educational learning processes in order to facilitate students in developing competencies in a lifelong learning scenario. European Commission (2008) also highlighted the need for integrating Information and Communication Technologies (ICT) for learning in order to support lifelong learning and innovation at all levels of education and training. The development of competences should enable people to adapt to the fast changing learning needs of a knowledge based, digital society. ICT provides the means to support personalisation, where learners are also considered to be knowledge builders and creators and not just the recipients of transmitted knowledge.

Transversal and non-technical skills are highlighted as essential elements in achieving the educational goals of the new system. The continuously evolving world that future accountants will face through their professional careers requires a well assorted and rooted set of skills which allow them to retrieve information and generate knowledge in a continuous, autonomous and collaborative way.

Regarding accounting education, over the two last decades there has been a sound debate that started in the USA. This process has a milestone in the so called Bedford Report (American Accounting Association, 1986). The Committee reached three general conclusions on which it based the report:

1. The accounting profession was expanding, entering a new era with new functions within organizations and within society and with new expectations of those who enter it.
2. The state of most professional accounting education programs was inadequate to meet the needs of this expanded profession.
3. The future scope, content, and structure of accounting education, in all its phases, should undergo reassessment and redirection to meet the needs of the expanded accounting profession and the future accounting professional.

Relevant stakeholders took part on this debate resulting in the publication of statements, reports and

education standards deeply interrelated (AAA, 1986, Arthur Andersen & Co., 1989; AECC, 1990, AICPA, 1999 and 2009). Common topics present, in all of these statements, are the need to promote long life learning, to change the role of students to an active engagement on their own learning process and the effective and innovative use of the technology in the learning – teaching process. In this line, the position statement n° 1 of the AECC stated that pre-entry education should lay the base on which lifelong learning can be built. As main consequence, the overriding objective of accounting programs should be to teach students to learn on their own, to be active participants in the learning process, not passive recipients of information, and to develop the ability to work effectively in groups (AECC, 1990). In a similar way, the Bedford Report (AAA, 1989) indicated that accountants should pursue lifelong learning as a means of adjusting to change through the development of expansive skills (communication, interpersonal, etc.).

At an international level the International Federation of Accountants (IFAC) developed its educational standards assuming explicitly the ideas and trends raised in the American debate. Therefore, the IFAC in its report *2000 and beyond* (1996) stated that a key objective of accounting programs should be to teach students to learn on their own. Because of this, students should be active participants in the learning process, creative use of technology should be essential and working in groups should be encouraged¹. About the use of technology, the recent *Glossary of terms* of the International Education Standards (IFAC, 2009) defines *Distributed learning*, which refers to an educational process in which the majority of the instruction is delivered asynchronously or when the instructor and students are in a different place. To develop both ideas, autonomy and collaboration between peers are needed. Distributed learning based on digital technologies could be considered as a fundamental mean in facilitating accountants an efficient lifelong learning process through their professional careers. Finally, at a European level, the accounting organisations and institutes represented in the Common Content Project issued the skills framework (Common content project, 2006). This document (based in the IFAC pronouncements and, therefore, aligned with USA statements) again highlights the relevance of collaborating with peers and learning from more experienced colleagues.

The opinion of such relevant organisations is far supported by research (v.g. Hassall et al., 2005; Milner and Hill, 2007; Arquero, Hassall and Joyce, 2001) which provide evidence for the importance of non technical skills and long life learning for future graduates.

Out of the accounting field, the 2008 Horizon Report, which seeks to identify new technologies capable of affecting education, points out the need for universities to equip students with new media literacy skills and to develop curricula that “address not only traditional capabilities like developing an argument over the course of a long paper”, but also “how to create meaningful content with today’s tools” (The New Media Consortium, 2008, p. 6).

The application of a SNS to education in accounting are therefore informed by both the institutional and the educational contexts. The next section addresses the technological context instructors and learners face and the ability to affect the way we learn and teach.

3.- The application of Web 2.0 to education: e-Learning 2.0

¹ These ideas are further developed in the recent education standards (IFAC, 2009) *International Accounting Standards (IES) 3 Professional Skills and General Education*, where the IFAC defines the skills that a future accountant should acquire in becoming a qualified professional and *IES 7*, that is devoted to lifelong learning and continuing professional development.

3.1.- Web 2.0

Since its creation, the Web has been used for educational purposes in a variety of areas of knowledge. Accounting has not been an exception. Quite a number of papers have studied the application of the Web to accounting education. In the last ten years many schools have invested substantial resources into web-based packages such as Blackboard or WebCT in order to offer online courses or enhance offline classes (Watson et al., 2007). Web-based materials have also been extensively used in the classrooms. Some research has focused on the results of using this type of platform, such WebCT (deLange, Suwardy, and Mavondo, 2003; Dunbar, 2004), and in the evaluation of other tools to assist offline classes (Abdolmohammadi, Howe, and Ryack, 2003; Ammons and Mills, 2003).

However, most of this research has focused on Web 1.0 tools which have been surpassed over the last five years by the so-called Web 2.0 (O'Reilly, 2005). Web 2.0 is best defined by giving examples of the types of services and applications (also called "social software"), such as: blogs (e.g.: Wordpress, Blogger), microblogging (e.g. Twitter, Jaiku), wikis (e.g. Wikipedia, wikispaces, etc.), social bookmarking (e.g. del.icio.us), social networking sites (e.g. Facebook, MySpace), and sharing content platforms (e.g. Youtube, Flickr).

Web 1.0 refers to the initial information-oriented web, authored by a small number of people for a very large number of users. It is a Web from few to many. Webpages were usually static and did not offer much interactivity.

On the other side, Web 2.0 calls users to behave in a proactive way, becoming publishers rather than merely consumers of information. This Web environment is based on networked collaboration and social interaction, fostering people engagement. As long as users are not required to have high technical knowledge to get involved in Web activities, the number of Internet users have increased dramatically in the last decade.

Moreover, Web services are becoming ubiquitous as they can be accessed from any part of the world with an Internet connection. Mobility will remarkably deepen this tendency as more students will be able to access learning from their mobile phones and other devices (The New Media Consortium, 2009).

This significant impact of Web 2.0 is expected to be higher as generations who have been grown up in fully digital environment get to the University and enter into professional life and occupy management positions (Tapscott, 2009)

3.2.- E-Learning 2.0: a social-constructivist approach

Education has undergone a paradigm shift moving away from teaching-as-instruction towards student-centred learning (Cole, 2009). Brown and Adler (2008, p. 30) refers to this new model as "a *demand-pull* rather than the traditional *supply-push* mode of building up an inventory of knowledge in students' heads". This shift has been accompanied by a transformation in the way young people interact using the Internet (Pew Internet Project, 2009).

The concept of e-Learning 2.0 (Downes, 2005) has emerged from the application of Web 2.0 tools to e-Learning. Many voices have claimed a positive impact of Web 2.0 on education (Solomon and Schrum, 2007; Richardson, 2009). Social software is considered to be effective in developing essential skills, in line with those mentioned previously, such as:

- Creating knowledge in user-defined or negotiated contexts;
- Selecting relevant information,
- Critically interpreting and analysing the socio-cultural context;
- Working in groups and collaboratively;
- Enhancing communication and interpersonal skills;
- Sharing knowledge and information; and
- Negotiating in horizontal contexts, avoiding hierarchical connections and exchanges of knowledge.

However, the pedagogical efforts should not be focussed purely on the technological possibilities but in the outcomes of applying these technologies to education. Web 2.0 is not pedagogically successful by itself. Teachers should stress curriculum development, task design and integration into pedagogical practices (Vallance, 2006).

Nevertheless, Web 2.0 is also a source of concern regarding issues such as, privacy, authorship and ownership rights, digital divide in the classroom, information overload (Benito-Ruiz, 2009), quality of content (Keen, 2007), or time management issues, etc. However, these concerns do not seem to be more serious than other problems that traditional teaching could cause, especially if we consider that students are already using these tools and therefore are exposed to these drawbacks.

The main challenge seems to be the conceptual change educators need to carry out, stepping outside of traditional philosophical and socio-political frames of reference and promoting collaboration and community instead of competition in the classroom. Web 2.0's architecture of participation (O'Reilly, 2005) offers students ways of learning in formal settings that are much more congruent with our normal ways of learning and better enables them to integrate the explicit and tacit dimensions of knowledge (Polanyi, 1966; Wenger, 1998; Eijkman, 2003). This technology can potentially facilitate teachers and students a more dynamic, immediate, and communicative environments that provide opportunities for meaningful experiences through social constructive learning.

Some research (Lavin and Claro, 2005; Halvorsen, 2009; Sturm et al., 2009) has recently looked to social constructivism as a way to interpret and assess some of the potential benefits of Web 2.0 in education. Social constructivist pedagogy, with its root in the work of Vygotsky and carrying influences from Dewey and progressivism, views social interactions as the source of all learning. The learners' need to create meaning requires a balance between autonomy, the ability to learn independently based on a process of interpretation and meaning-making of a variety of experiences (Jonassen, 1991), and community, the context where this meaning is ultimately created through social interaction (Duffy and Cunningham, 1996).

Web 2.0 allows individuals the autonomy to create and express themselves online, to author their own content, and to share that content with others in efficient and meaningful ways. Autonomy is also a motivating and proactive factor that helps to develop the skills required by an accountant. SNS, where the teacher becomes to some extent another face in the list, promotes a redistribution of the power relationships. Students control their own personal space and are free to comment and participate in the common spaces. Online participation can provide students with some disability a friendly context within which to interact. Also, gender differences can be overcome. Autonomy is a precondition for critical thinking and for facilitating planning, decision-making and self-management skills. Digital literacy is also an essential component for autonomy in an online environment.

SNSs tend to be, by their nature, collaborative, although the main focus is not on the creation of content but on the development of users' identities and on collaboration between them. Social

constructivism situates learning in communities of learning and practice as opposed to within the minds of individuals (Lave and Wenger, 1991; Wenger, 1998, Brown and Adler, 2008).

3.3.- What is a SNS and why are they relevant?

boyd and Ellison (2008, p. 211) define social network sites as “web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system”. SNSs (e.g. Facebook or MySpace) are currently the most popular type of Web 2.0 service because they are able to combine many Web 2.0 technologies into platforms that serve as a virtual gathering places that facilitate social relationships.

Data in 2007 (Comscore, 2007) showed over 250 million unique visitors to various SNSs around the globe. Today the number of visitors are likely to be much higher. In 2009, Comscore reports that 74.6 percent of European Internet users visited a social networking site in December 2008. Of the 16 individual European countries in the study, social networking reach in Spain was second only to the United Kingdom. This rise of SNSs indicates a shift in the organization of online communities (boyd y Ellison, 2008). By contrast to websites dedicated to communities of interest, SNSs are primarily organized around people. Halvorsen (2009) thinks that efficiency in allowing users to share information and interact with one another in a dynamic and multi-modal environment. SNSs seem to fill the lack of face-to-face interaction in some contexts of today's modern society. Additionally, boyd and Ellison (2008, p. 211) claim that “[w]hat makes social network sites unique is not that they allow individuals to meet strangers, but rather that they enable users to articulate and make visible their social networks”, through the development and visualization of lists of “Friends,” “Contacts,” and “Fans.” Particularly, university students have proved to be a significant user of SNS. A clear example is Facebook, that began in early 2004 as a Harvard-only SNS (Cassidy, 2006).

Scholars are documenting the implications of SNS use with respect to schools, universities, and libraries. For example, scholarship has examined how students feel about having professors on Facebook (Hewitt and Forte, 2006), how faculty participation affects student-professor relations (Mazer, Murphy & Simonds, 2007), the relationship between the use of Facebook and the formation and maintenance of social capital (Ellison, Steinfield and Lampe, 2007), etc.

4.- RESEARCH QUESTIONS, RESEARCH DESIGN AND INSTRUMENTS

4.1.- Objectives and research questions

The project was implemented in an optional subject, International Accounting, taught in the last years of the Degree in Business Administration at the University of Granada (Spain). The main objectives of the subject are related to understanding the international accounting context, mainly focused on the developments of the International Accounting Standards Board (IASB), and to get a general overview of the International Financial Reporting Standards (IFRS). These functions require that the students develop some expertise to keep their knowledge up-to-date and their critical thinking and communication skills sharp. These skills should be developed in order to complement the educational practices in previous years that focused specially in transmitting technical knowledge. In order to achieve the combined development of knowledge and skills, the use of SNS can promote social interaction and a higher exposure to the business environment that they will have to face in the future. Social network tools are able to facilitate collaborative work, but also recognise the individuality of the student. These blended technologies provide a set of potential benefits for students (Halvorsen, 2009).

Given the apparent synergy between the technological characteristics of SNSs and the models of learning being actively promoted in Spanish and European Higher Education, the following are the main research questions being investigated:

Can SNSs contribute significantly to an active engagement of the students on their own learning process?

Can SNSs facilitate the integration of students into work teams and to collaborative learning under a social constructivist pedagogy?

The last objective of any innovation is the improvement in learning process. In this line a third research question is:

Can SNSs contribute to a better achievement of the academic objectives of the subject?

4.2.- Description of the project

A private Social Networking Site is created by using the platform Ning, which is able to integrate a bunch of Web 2.0 tools into a social friendly network. Some of the main tools implemented in the SNS are shown in table 1 together with the pedagogical objectives that each tool is intended to achieve.

148 out of 160 students, belonging to two different groups of the same course, registered in the SNS, most of them within the first month of class. Registration into the SNS was not compulsory but recommended and encouraged.

During the first two weeks of the course, students were taught how to use of the platform: how to become a member, write in the blog, comment in other blogs, use the forum, etc. Basic explanations were also provided through discussion of the nature of SNSs and its pedagogical applications.

Tasks assigned to the students for the course include: sharing links with relevant information, selecting pieces of news and commenting them critically, commenting on the forum, etc. Students are evaluated through final examination and, additionally, through optional assignments and participation in the class and the SNS. From the beginning of the course, students were told that online participation was considered the same as offline one. This allowed students who couldn't attend the offline classes often to catch up and maintain the same opportunities as other students.

Table 1. Web 2.0 features integrated in the SNS

Tool	Features	Objectives
Network visualization	Different features allow a visualization of who the members are and which activities they do in the network. The Home page contains the following widgets or modules: <ul style="list-style-type: none"> ● “Members”: a mosaic with a picture of each member of the network. ● “Latest activity”: a real-time stream of everything happening across the network. 	<ul style="list-style-type: none"> ● Network visualization permits the establishment of contact with members of the class and the creation of a sense of community.

RSS feeds (in)	<p>“Latest news”: RSS (or Atom) is a technology that gathers information from diverse sources across the Web and publishes it in one place. It provides an ongoing stream of information into the social network.</p>	<ul style="list-style-type: none"> ● Embedded content using RSS feeds allow the incorporation of relevant accounting news from different sources in the Web into the classroom. This feature is especially significant in the project because it incorporates, in a visible space of the network, a set of updated international accounting news. Feeds currently used come from IASB webpage, IASPLUS webpage and from a search in Google News of the terms “IFRS” and “IASB”. ● Most of the news are in English, promoting multilingual learning that is especially relevant for the course and for accounting education in general.
RSS feeds (out) / Email alerts	<p>Content published in the network can be accessed via RSS or via emails alerts.</p>	<ul style="list-style-type: none"> ● Alerts are intended to update students about the content of the course. They can choose the type of information to be reported.
Discussion Forum	<p>The discussion forum constitutes a space, organised by categories, where information and attachments can be made accessible to the social network. Forum topic creation can be open to all the members or limited to the instructor. This widget occupies the most visible position in the Home Page of the network.</p>	<ul style="list-style-type: none"> ● The forum is the main instrument driving the class. 5 categories are set: <ul style="list-style-type: none"> ○ Topic creation in “standards”, “theory” and “practice” categories is limited to the instructor. Materials, discussions, indications, assignments, etc. will be delivered through this source. Each topic is open for students' comments and contributions. ○ Topic creation is open to any member of the network in other 2 categories: “use of Web 2.0 in education” and “Miscellaneous”.
Chat	<p>This is not properly a Web 2.0 tool. It enables members to see who's online and chat in real-time.</p>	<ul style="list-style-type: none"> ● It represents the only synchronous communication tool in the network and is intended to foster the social relationships in the community.
Groups	<p>Groups can be created inside the social network with images, membership, comments and a discussion forum.</p>	<ul style="list-style-type: none"> ● This feature will be displayed if students desire to share a private space for specific members when doing group work.
Blogs	<p>Every member of the social network has a blog. Blogs can function as reflective diaries, but also as conversational centrepieces. Readers may leave comments for a blog's author and each other, thereby forging</p>	<ul style="list-style-type: none"> ● Blog posts by students are not required to be course related. The social network should permit members to express themselves, with due respect, and to create their digital identity. Posts from each member blog are displayed

	connections and communities around topics of mutual interest.	chronologically in the Home Page, unless they decide to make them private.
My page	Each member has a personal page that is customizable. Content published on the page can be open to all the members or be limited to friends	<ul style="list-style-type: none"> ● “My page” allows students to develop their own digital identity and to build their own network inside the SNS by becoming friends of other members.
Html widgets and content	The social network allows the embedding of html widgets and content from any other web services provider. This feature will allow to the inclusion of calendars, videos, pictures, etc.	<ul style="list-style-type: none"> ● This feature provides additional possibilities to students for customizing their own page. ● A Google Spreadsheet will be included to communicate marks at the end of the course, allowing students to leave their comments and provide feedback for future courses.
Other features	Other features include: events, birthday reminders, notes, etc.	<ul style="list-style-type: none"> ● Additional features facilitate communication and the development of social relationships in the course.

4.3.- Data collection

At the beginning of the project, data was collected in the form of a questionnaire to assess students' awareness of and interest in digital literacy, attitude to technology and use of the web.

Finally, a questionnaire with multiple items was distributed to the students at the end of the course before the final exam (in June 2009) in order to know their opinions and perceptions about the use of the SNS. Anonymous usage data were also gathered from the social network. Additionally, quantitative information were collected using Google Analytics.

Questionnaires were delivered online through the SurveyMonkey.com platform. Online questionnaires are chosen to keep in accord with the online activities developed in the course and due to advantages in terms of cost, speed, appearance, flexibility, functionality and usability (Lumsden, 2007).

6.- RESULTS

A total of 105 responses to the questionnaire were gathered. Close to 68% of the students were female. The age of the respondents ranged from 19 to 32 years old, with a mean of 22.

More than 86% were integrated in a social network previously to the experience and only a 12% rated their ability to use internet tools as “low”. Table 2 shows the frequency of access to internet.

Table 2. Frequency of access to internet

	n	Valid %	Acum. %
1 Several times per day	78	74,3%	74,3%
2 Once a day	13	12,4%	86,7%

3 Several times per week	13	12,4%	99,1%
4 Once a week	0	0,0%	99,1%
5 Several times per month	1	1,0%	100%
6 I don't use internet	0	0,0%	100%
Total	105	100	

The frequency of the access to internet is high: close to 87% of the students access at least once a day. Vast majority of them use their own computer for this purpose, either at their homes during the week (82%) or from the university (12%). As indicated by respondents, laptops are becoming more popular than desk computers for students (71% vs 29%).

Table 3 reports about the perceived difficulty on the usage of SNS. In general terms, the respondents did not indicate great difficulties in any of the aspects evaluated. Scoring from 0, no difficulty at all, to 10, the means of the perceived difficulty are lower than 2,5 and far from the medium point of the scale.

Table 3. Perceived difficulty of SNS usage

	Used	Media	Desv. típ.	Not used
SNS in general terms	103	2,19	2,063	0
Blog	79	2,06	1,924	22
Forum	93	1,46	1,809	10
Chat	46	1,96	2,139	57
Commenting in other students' forum or blog entries	81	1,12	1,906	21
Sending private messages	88	,81	1,230	15
Adding contacts or friends in the SNS	84	1,17	1,748	19

General assessment of the activity

In terms of general assessment, the results are quite encouraging: 91% of students considered that the generalization of the use of the SNS, as done in activity, could significantly improve the quality of the learning and teaching process at university level. Close to 96% recommend their colleagues to enrol in the course. In fact, close to 94% of the students believe that the generalised use of an integrated SNS for all the courses could be an effective learning tool (see table 4).

Table 4. General assessment of the activity

	Mean	Std. Dev.	% agreem.	% disagree.
I'd recommend to other students to enrol in the subject	4,39	0,603	95,92%	1,02%
I think that the generalisation of these initiatives could improve significantly the quality of learning at university level.	4,28	0,709	91,09%	2,97%
An integrated SNS for all the subjects, or similar subjects, could be a good learning tool.	4,26	0,722	93,88%	5,10%
The difficulties to use the SNS de-motivate me to use it.	1,71	0,903	6,80%	86,41%

Finally, students did not perceive difficulty of use of the SNS as a constraint or de-motivating factor (around 7% of agreement versus 86% of disagreement).

It is to be noted that there are significant differences in the general assessment of the activity depending on the previous experience with SNS.

Table 5

		N	Mean	Std. Dev.	t-test sig.
I think that the generalisation of these initiatives could improve significantly the quality of learning	no	13	3,54	,967	.000
	yes	86	4,38	,597	
An integrated SNS for all the subjects, or similar subjects, Could be a good learning tool	no	12	3,75	,866	.000
	yes	84	4,36	,633	

Students with experience stronger agree with the benefits of the SNS as learning tool. However no differences were found in the possible de-motivation of its use.

Increasing the active role of students

As relevant stakeholders in our area stated, the overriding objective of university programs should be to teach students to learn on their own and to promote the active participation of the students in the learning process. In these terms, the opinion of the students indicate that the use of the SNS as been fairly successful (see table 6). More than 88% of the students stated that the use of the SNS as a learning tool motivated them to get implicated in a more active way than traditional pedagogy.

The increase in the flexibility is quite appreciated by students. More than 90% agree that the use of the SNS allow them to prepare the subject (93%) and to approach to the teaching staff (99%) in a more flexible way.

Table 6. Active role of students

	Mean	Std. Dev.	% agreem.	% disagree.
The SNS allow students to approach the teaching staff more easily (to answer for questions, doubts etc.).	4,65	0,537	99,03%	0,97%
The use of the SNS allows students to prepare the contents of the subject in a more flexible way.	4,20	0,546	93,27%	0,00%
The use of the SNS makes feel more involved in the subject than a classic scheme	4,18	0,653	88,35%	0,97%
The use of the SNS allows me to know and use tools that are useful to keep my professional knowledge up to date in the future.	4,03	0,675	82,69%	1,92%
The use of the SNS allows me to learn on my own by gathering additional information, consulting other resources, etc.	3,93	0,683	82,86%	4,76%

About the incidence of the activity on the students' learning to learn abilities, the results are also hopeful. Close to 83% of the students believe that the use of the SNS helped them to know how to use tools useful to keep their professional knowledge up to date and to learn on their own by searching and filtering information in different sources.

Collaborative and content learning

The influence of any innovation in the content learning is always a key point (see table 7). Again, the opinions of the students are indicative of a positive effect. More than 95% agreed that the use of the SNS was useful for the learning of the subject contents. Although not so high, the innovation also motivated students to work harder in the subject (58% of agreement) and even to increase their interest in the subject (53% of agreement).

Table 7. Content learning and motivation

	Mea n	Std. Dev.	% agreem.	% disagreem.
The use of the SNS has been useful for the learning of the contents of the subject.	4,25	0,537	95,15%	0,00%
The use of the SNS motivated me to work harder in the subject.	3,74	0,816	58,25%	3,88%
The use of the SNS increased my interest in accounting.	3,53	0,750	52,88%	7,69%

In terms of collaborative learning (see table 8), the SNS seems to be a helpful learning tool. The opinions of the students suggest a positive impact in the collaborative aspects of the learning process. The positive aspects of the share and spreading of ideas and points of view among students are highly rated, as well as the possibility to answer questions between peers.

Table 8. Collaborative aspects of the learning process

	Mea n	Std. Dev.	% agreem.	% disagreem.
The use of the SNS allows all members to benefit from the contributions published by their peers.	4,34	0,536	97,06%	0,00%
The use of the SNS encourages that other students Could help solving questions and difficulties of their peers.	4,21	0,635	92,16%	1,96%
The use of the SNS fosters the diffusion of the own ideas and points of view and influence in others' point of view.	4,08	0,621	90,29%	2,91%
The use of the SNS helps to learn from and consider other students' points of view on problems and cases.	3,99	0,649	84,47%	2,91%
SNS provides helpful tools to facilitate team working.	3,95	0,705	76,84%	2,11%
The SNS allows the coordination of joint actions with peer students for other activities out of the subject (e.g. to prepare assignments of other subjects).	3,93	0,849	75,00%	7,29%
The SNS allows the developing of a better communication with my classmates.	3,66	0,919	59,18%	10,20%

The benefits derived from the dissemination of ideas and points of view are highly rated as one of the major advantages of the use of SNS. The respondents also considered the SNS as a helpful tool to facilitate team working and coordinate actions.

Promoting critical view

The access to others' points of view widens the students' knowledge on a content topic. Consequently, the respondents indicated that the use of the SNS help them to develop a more critical and reflective attitude towards the content of the subject (81% agreed to that statement; see table 9). In the same way, the students felt that the SNS as learning tool helped them to develop a more critical view to the content accessible via internet (71%) and to the opinions of their peer students (74%).

Table 9. Promoting critical view

	Mean	Std. Dev.	% agreement.	% disagreement.
The use of the SNS allows me to better develop a critical and reflective attitude towards the contents and materials of the subject.	3,89	0,615	81,19%	2,97%
The use of the SNS allows me to express my opinions and views more freely than in a classroom.	3,88	1,003	67,33%	8,91%
The use of the SNS allows me to better develop a critical and reflective attitude towards the contents accessible via Internet.	3,79	0,635	71,57%	1,96%
The use of the SNS allows me to better develop a critical and reflective attitude towards the opinions of other students.	3,78	0,607	74,51%	2,94%

It is to be noted that students expressed that the SNS helps to express their opinions more freely than in a classroom, which is a key point to promote a constructive discussion on the content topics.

Open questions

The questionnaire used to assess the experience included three open questions at the end. These questions asked the students to highlight their opinions on the main advantages, disadvantages, and points to improve in the experience.

The vast majority of students stressed, as main advantages, questions already included in the questionnaire, such as ease to express their own opinions and to access the information, the teaching staff and other students' opinions. Some students' testimonies are as follows: "All the contents, or the references to get to the sources, to prepare the subject are available as well as to really interesting opinions by other students"; "We can get also instant access to the teaching staff and to our colleagues"; "(...) we can access to students enrolled in another classes that we couldn't access easily otherwise".

The advantages of the distributed learning are pointed out by the students: "I consider a great advantage to be able to keep in contact with all my colleagues at any hour of the day and in any place. It's much easier to work in that way getting access to mall the information and opinions."

This constant availability of material and access is highly valued by students that due to work or other compromises cannot attend the classes regularly.

The appropriateness of the SNS as learning tool is also highlighted by students. Many of them underlined the ease to ask questions and learn from to other students even “to learn from other students’ questions”. The reduction of the formalism associated with the classroom, in words of the respondents, facilitates participation even more for apprehensive students, which find in this tool a friendly arena to share their opinions.

As negative aspects of the experience, many students just indicated “nothing”. The lack of prior training is commonly mentioned as the main drawback. However, this problem vanishes as the course progresses and students get habituated to work with the platform. The need to have a connection to internet and the technological reliance issue are other concerns raised by students.

The following comments point to interesting issues: “Some colleagues make so extraordinary contributions that I don’t know what to say that could add anything to the discussion”; “Sometimes it’s difficult to be critical with other colleague’s comments without being impolite”.

Many students are not habituated to participate in forums and debates; therefore, they don’t know how to behave in several situations. Nevertheless, this constraint is expected to be present, even more strongly, in face to face interactions.

A coordination issue, which we think is quite relevant, is raised by one respondent: “The main inconvenient I see in these tools is that they are used only for a single course. Every department or teacher could be using a different one and this could lead to a mess. In that case it could be impossible to keep up to date in every one”.

Again, the majority of students indicate no need for improving. The students who suggest improvements focused in three main questions:

- Administrative and web structure issues, asking for changes in the way the information was presented.
- The creation of a fixed timetable to reduce asynchrony
- The use of the SNS for other subjects.

7.- DISCUSSION AND FUTURE

This paper intends to provide evidence on the impact of the use of SNSs in higher educational. Results are expected to shed light over the effectiveness of this method to improve the acquisition of essential skills and content learning by students. In general terms, the experience was positively valued by students, who pointed out that the SNS as used in the experience was a good learning tool, whose generalisation could improve the quality of learning at university level. The vast majority of students did not find de-motivating difficulties in the usage of the tools. Previous experience with similar software appears to be a key factor in the assessment of the activity and perceived difficulty. This result leads to the training issue, also raised by Cole (2009): a key factor for success in this kind of experiences is the familiarity of the students with the tool. Therefore, a period of formal training is fairly recommended.

Flexibility and self management of the resources (including time) is highly valued by respondents, stressed also in the open questions. Learning to learn is a key skill that can be improved by using adequately SNS in educational setting. In the opinion of the respondents, the experience allowed them to know tools to keep their knowledge up to date and to learn on their own how to get relevant information in the future.

The experience also had a positive effect in content learning in a collaborative way. Students highlighted the positive effect of sharing ideas and collaborating with peers. An easier access to others' points of view, in both directions, is emphasized as a very positive result of the experience. With no opposing opinions, the use of the SNS was viewed by students as useful for content learning. The easier access to different ideas and the possibility to comment them in an open minded environment had a positive effect in promoting the critical view of students towards contents, resources and opinions.

We conclude this exposition by quoting this words of Shenk (1997, p. 211, cited by Benito-Ruiz, 2009, p. 68) about the use of computers in the class: "Schools are stringent filters, not expansive windows onto the world. Teachers and textbooks block out the vast majority of the world's information, allowing into the classroom only very small bits of information at any given time. When organized well and cogently presented, these parcels of data are metamorphosized into building blocks of knowledge in the brains of students. The computer, by and large, is designed for a very different purpose. It helps access and deliver enormous stores of information at high speeds. It is not a filter, but a pump."

This is the most important challenge we face: either to open the class to an uncertain and vast world and consequently educate on autonomous and collaborative basis, or to close the class to provide students material already digested by the teacher or by a book.

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