

(C-37)

**USING SOCIAL NETWORK SITES IN HIGHER
EDUCATION: AN EXPERIENCE IN BUSINESS STUDIES***José L. Arquero**Esteban Romero-Frías*



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(C-37) USING SOCIAL NETWORK SITES IN HIGHER EDUCATION: AN EXPERIENCE IN BUSINESS STUDIES*José L. Arquero y Esteban Romero-Frías***Afiliación Institucional:** Universidad de Sevilla, Universidad de Granada**Indique uno o varios de los siete Temas de Interés Didáctico:**

- Metodologías didácticas, elaboraciones de guías, planificaciones y materiales adaptados al EEES.
- Actividades para el desarrollo de trabajo en grupos, seguimiento del aprendizaje colaborativo y experiencias en tutorías.
- Desarrollo de contenidos multimedia, espacios virtuales de enseñanza-aprendizaje y redes sociales.
- Planificación e implantación de docencia en otros idiomas.
- Sistemas de coordinación y estrategias de enseñanza-aprendizaje.
- Desarrollo de las competencias profesionales mediante la experiencia en el aula y la investigación científica.
- Evaluación de competencias.

Resumen.

En los últimos años, el impacto de la Web 2.0. Entre las nuevas generaciones ha sido remarcadamente significativo (Pew Research Center, 2010). Este trabajo muestra los resultados de una experiencia innovadora basada en el uso de una Red Social para fomentar el desarrollo de competencias básicas y la implicación activa de los estudiantes en la asignatura.

En opinión de los alumnos, la experiencia ha sido valorada muy positivamente. La experiencia contribuyó a una mayor implicación en la asignatura y a una mejor colaboración con los compañeros y con el profesorado. Como consecuencia la mayoría de los estudiantes optarían por el uso de la Red Social como soporte básico si tuviesen que matricularse de nuevo en la asignatura.

Sobre la relación entre rendimiento y uso de la Red, se identificaron dos perfiles de acuerdo a los patrones de uso. Los estudiantes con un perfil de uso más intensivo mostraron rendimientos más altos que aquellos con perfil de uso bajo.

Keywords: Collaborative learning; Web 2.0; Computer-mediated communication; Learning 2.0; Learning communities; Social Network Sites

Abstract.

In the past 5 years the impact of the Web 2.0 in new generations has been remarkably significant (Pew Research Center, 2010). This paper reports on an experience in the use of Social Network Sites (SNS) to support student involvement with the subject and to develop basic skills.

According to students' opinion, the experience was deemed as positive. They considered that the experience contributed to a higher engagement with the subject and a deeper collaboration with other students and teaching staff. As a result, the majority of students would prefer the use of SNS as a first option if they had to enrol again in the subject.

Regarding the relationships between academic performance and use of the SNS, two different student profiles were identified based on usage patterns of the platform. Students with a more intensive use of the site showed a significantly better performance than students with a low usage profile.

Texto.

Introduction

The underlying objective of the recent reform of the European university system (European Ministers of Education, 1999) is to facilitate the development of students' competencies in a lifelong learning scenario. The European Commission (2008) highlighted the need for integrating Information and Communication Technologies (ICT) in all levels of education in order to support lifelong learning and innovation. ICT constitutes the most relevant mean to retrieve information and generate knowledge in an information based society and should enable people to learn in a continuous, autonomous and collaborative way. These ideas are highlighted in the Horizon Report (The New Media Consortium, 2008), which underlines the need for universities to endow students with new media literacy skills and to develop curricula that help students with today's tools.

In our field, the educational standards issued by the International Federation of Accountants (IFAC, 2009) highlighted the need to promote lifelong learning and to change the role of students towards an active involvement in their own learning process by fostering creative use of technology and group work. These educational goals and means are endorsed by other professional organisations at a European and US context (Common content project, 2006; AICPA, 2009) and evidenced by recent research (e.g. Hassall, Joyce, Arquero & Donoso, 2003; Milner & Hill, 2007).

In the last few years, the use of social computing or "Web 2.0" has increased spectacularly, particularly among new generations. The Pew Research Center (2010) reports that 95% of "Millennials" in the United States (generation born between 1977 and 1992) go online and that 83% use SNSs. The Web 2.0 services are remarkably effective in connecting people and in facilitating the exchange of information, providing new opportunities for improving the acquisition of transversal competences in higher education.

From this standpoint, we decided to use a Social Network Site to support student engagement and to develop digital and transversal skills, essential in any professional field and particularly in Business. SNSs (i.e. Facebook) have proved to be extremely popular among students; therefore a higher degree of student engagement is expected. Moreover SNSs find an appropriate place within the requirements of a social constructivist approach to education, regardless the field of knowledge.

The application of Web 2.0 to education

A social-constructivist approach

Since its creation, the Web has been used for educational purposes. In our field there has been substantial investment in Web-based packages such as Blackboard or WebCT in order to offer online courses or enhance offline classes (Watson, Apostolou, Hassell & Webber, 2007). Web-based materials have also been extensively used in the classrooms. Some research has focused on the results of using these types of platforms (deLange, Suwardy & Mavondo, 2003; Dunbar, 2004), and in the evaluation of other tools to assist offline classes (Abdolmohammadi, Howe & Ryack, 2003; Ammons & Mills, 2003). However, most of this research focused on Web 1.0 tools, which have been surpassed over the last five years by Web 2.0 (O'Reilly, 2005). The significant impact of Web 2.0 is expected to be higher as generations who have grown up in a fully digital environment move from University into career paths and occupy management positions (Tapscott, 2009). Many voices have claimed a positive impact of Web 2.0 on education (Solomon & Schrum, 2007; Richardson, 2009). Social software is considered to be effective in developing essential skills (selecting relevant information, critically interpreting and analysing the socio-cultural context, working collaboratively, sharing knowledge, etc.). Nevertheless, as the Report on Learning 2.0 issued by the European Commission (Redecker et al., 2010: 102-103) states: "Research is needed to determine how learning schemes and organisational processes are modified and transformed by Learning 2.0 approaches, which in turn will change assessment and certification, recruitment and the accreditation of E&T [Education and Technologies] institutions and courses. There is also a need for more scientifically guided experiments and controlled trials and a need for research to highlight policy implications."

Recent research has looked into social constructivism as a way to interpret and assess some of the potential benefits of Web 2.0 in education (Sturm, Kennell, McBride & Kelly, 2009). The learners' need to create meaning requires a balance between (a) autonomy (Jonassen, 1991), and (b) community (Duffy & Cunningham, 1996). 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 the collaboration between them. Social constructivism situates learning in communities of learning and practice (Brown & Adler, 2008). Individuals have 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.

SNS: concept and relevance

boyd & Ellison (2008: 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 are currently the most popular type of social software because it facilitates the combined usage of many Web 2.0 technologies into platforms that work as virtual gathering places for social interactions.

The rise of SNSs indicates a shift in the organization of online communities (boyd & Ellison, 2008). Unlike Websites dedicated to communities of interest, SNSs are primarily organized around people. Halvorsen (2009) remarks on their 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.

As University students are high profile users of SNS, scholars are documenting the implications of SNS use in academic contexts: Hewitt & Forte (2006) examined how students feel about having teachers on Facebook; Mazer, Murphy & Simonds (2007) how faculty participation affects student-teaching staff relations, and Ellison, Steinfield & Lampe (2007) focused on the relationship between the use of Facebook and the formation and maintenance of social capital.

Objectives and research questions

The project was implemented in an optional course on International Accounting, taught in the last years of the Degree in Business Administration at the University of Granada (Spain). The changing nature of the subject requires that students develop some expertise to keep their technical knowledge up-to-date and their critical thinking and communication skills active. In order to achieve the combined development of contents and skills, the use of SNS promotes social interaction and a higher exposure to business environment.

Given the apparent synergy between the technological characteristics of SNSs and the models of learning being actively promoted in European Higher Education, the main research questions deal with the impact of innovation in the following aspects of the learning process:

- 1) active involvement of the students in the learning process
- 2) group work and collaborative learning
- 3) critical thinking
- 4) contents learning

Method

Description of the platform

A private SNS was created by using the platform Ning (<http://www.ning.com/>).

We decided to use a publicly available and general-purpose SNS service instead of an institutional e-learning platform because the former integrates a set of tools that are open for use by students through their professional careers whereas the latter constitutes a closed platform which is only useful during their students' life. Some of the main tools implemented in the SNS included chat, discussion forums, RSS feed, blogs, Google docs, etc.

All 160 students enrolled registered in the SNS. During the first two weeks of the course, students received explanations about the nature of SNS, its pedagogical applications and usage of the main tools.

Some of the tasks assigned to the students for the course included: sharing links with relevant information, selecting pieces of news, analysing those news critically, and adding comments to the forum. Students were evaluated through final examination and, additionally, through optional assignments and participation in the classroom and the SNS. From the beginning of the course, students were told that online participation was considered the same as offline participation. This allowed students who could not attend offline classes to catch up and contemplate the same opportunities as other students.

Data collection and analysis

At the end of the course a questionnaire was distributed among the students through the SNS.

The questionnaire included items in the following categories

1. Personal data
2. Digital literacy and perceived difficulty of use
3. Effects of the innovation on:
 - a. active role,
 - b. collaborative learning,
 - c. critical thinking, and
 - d. content learning
4. General assessment

Assessment items (categories 3 and 4) were designed to be answered in a 5-point Likert scale, ranging from 1 (complete disagreement) to 5 (complete agreement), 3 being neutral opinion.

A database, containing the different grades obtained by the students, was created. The total grade was a composite of the final exam grade, the completion of an essay and the participation and completion of minor tasks in the daily class.

In addition, the SNS provided information about the level of active participation by students. The following variables were considered:

- Number of comments in blogs and forum;
- Number of discussions created in their own blog and forum; and
- Number of contacts of each student.

Results

Descriptive data

A total of 105 questionnaires, out of 160 registered students, were gathered. The age of the respondents ranged from 19 to 32 years old, with a mean of 22. Almost 68% of the students were female.

The frequency of access to the Internet was high: close to 87% of students accessed at least once a day. The vast majority of them used their own computer for this purpose, either at their homes during the week (82%), or at the university (12%). As indicated by respondents, laptops are more popular than desk computers for students (71% vs 29%). More than 86% were active users of SNS prior to the experience and only 12% rated their ability to use Internet tools as “low”.

In general terms, the respondents did not indicate great difficulties in any of the aspects evaluated (Table 1). Scoring from 0 (no difficulty at all) to 10; the means of the perceived difficulty are lower than 2.5.

Table 1. Perceived difficulty of SNS usage

	Mean
SNS in general terms	2.19
<i>Particular tools and features</i>	
Blog	2.06
Forum	1.46
Chat	1.96
Commenting in other students' forum or blog entries	1.12
Sending private messages	0.81
Adding contacts or friends in the SNS	1.17

Increasing the active role of students

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 indicates that the use of the SNS has been fairly successful (table 2). More than 88% of the students stated that using the SNS as a learning tool motivated them to get more actively involved than with a traditional pedagogy; close to 83% believe that is also useful to keep their professional knowledge up to date.

Table 2. Active role of students

	Mean	Agreem.	Disagreem.
The use of the SNS makes me feel more involved in the subject than a traditional class.	4.18	88.35%	0.97%
The use of the SNS allows me to know and use tools that are useful in keeping my professional knowledge up to date in the future.	4.03	82.69%	1.92%
The use of the SNS allows me to learn on my own by gathering additional information, and consulting other resources, etc.	3.93	82.86%	4.76%
The SNS allow students to approach the teaching staff more easily (ask questions, doubts etc.).	4.65	99.03%	0.97%
The use of the SNS allows students to manage their own time and prepare the contents of the subject in a more flexible way.	4.20	93.27%	0.00%

The flexibility is very appreciated by students: more than 90% agreed that the use of the SNS allows them to better manage their time to study for the subject (93%), as well as to approach the teaching staff (99%) in a more flexible way. This flexibility is expected to help the autonomy of the students.

Collaborative learning

In terms of collaborative learning and team working, the SNS seems to be a helpful learning tool (table 3). The positive aspects of sharing ideas and points of view among students are highly rated.

Table 3. Collaborative aspects of the learning process

	Mean	Agreem.	Disagreem.
The use of the SNS allows all members to benefit from the contributions published by their peers.	4.34	97.06%	0.00%
The use of the SNS encourages that other students help solving questions and difficulties of their peers.	4.21	92.16%	1.96%
The use of the SNS fosters the spreading of the students' own ideas and points of view and influence point of view of others.	4.08	90.29%	2.91%
The use of the SNS helps students to learn from and consider other students' points of view about problems and cases.	3.99	84.47%	2.91%
SNS provides helpful tools to facilitate team working.	3.95	76.84%	2.11%
The SNS allows the coordination of joint actions with peers for other activities outside the course (e.g. prepare assignments for other subjects).	3.93	75.00%	7.29%

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 the SNS. The respondents also considered the SNS as a useful tool to facilitate team working and coordinate actions.

Promoting critical thinking

As indicated previously, SNS facilitates the interaction between students. The access to different points of view widens and enriches their knowledge on contents by developing a critical attitude towards opinions. In this line, the respondents indicated that the experience helped them to develop a more critical and reflective attitude towards the content of the subject (81% agreement; table 4), the contents accessible via Internet (71%) and the opinions of their peers (74%).

Table 4. Promoting critical thinking

	Mean	Agreem.	Disagreem.
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	81.19%	2.97%
The use of the SNS allows me to better develop a critical and reflective attitude towards the contents accessible via the Internet.	3.79	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	74.51%	2.94%
The use of the SNS allows me to express my opinions and views more freely than in a classroom.	3.88	67.33%	8.91%

Critical thinking and communicative skills are basic to achieve successful collaborative learning; therefore, an appropriate environment to promote students contributions is required. According to responses, 67% report that the use of SNS allows them to express their opinions and views more freely than in the classroom. This aspect leaves the door open for the usage of SNS as a complement of traditional classroom learning, becoming, thus, a communication barrier breaker (for instance gender differences and limitations of disabled students).

Content learning

In the end, the development of the desired capabilities and content learning is the underlying aim of any educational innovation. Given that all students participated in the activity, the relationship performance - participation is assessed by (I) the opinion of students and (II) by comparing the real performance of students that were more actively engaged in the innovation versus those students that, although participating, were more passive.

The opinions of the students are indicative of a positive effect (table 5). More than 95% agreed that the use of the SNS was useful for the learning of the technical contents of the course (versus 0% of disagreement). Although not so high, the new digital context also motivated students to work harder in the subject (58% of agreement) and even to increase their interest in it (53% of agreement).

Table 5. Content learning.

	Mean	Agreem.	Disagreem.
The use of the SNS has been useful for the learning of the contents of the subject.	4.25	95.15%	0.00%
The use of the SNS motivated me to work harder in the subject.	3.74	58.25%	3.88%
The use of the SNS increased my interest in accounting.	3.53	52.88%	7.69%

A cluster analysis was performed to classify the students by their level of participation in the activity. The variables used in the cluster analysis were related to the number of comments in blogs and in forum, the number of discussions created in their own blog and forum, and the number of contacts each student established in the SNS. Two clusters were defined (table 6):

Table 6. Definition of groups by participation.

	n	Number of comments	Number of discussions	Number of contacts
Low participation	75	0.63	0	2
High participation	27	2.93	1.15	4.59
Total		1.24	0.3	2.69

Students indicated in the questionnaire the grades obtained in previous Accounting courses. This variable was used as a measure of academic performance to control for previous differences in performance between the two groups. The results indicate that there are no significant differences on previous performance between groups by participation (Chi square test n.s.).

Comparing the results of the present subject, the comparison of academic performance by participation (table 7) reveals that students participating more actively in the SNS tend to obtain higher grades in all the measures.

Table 7. Grades by level of participation.

Grade	Cluster	Mean	t-test sig
Exam	Low	5.71	n.s.
	High	6.05	
Task (essay)	Low	0.75	.000
	High	1.24	

Class	Low	0.25	.007
	High	0.32	
Final grade	Low	6.27	.005
	High	7.62	

The subject assessment was based mainly on a final exam (around 70% of the final mark), the completion of an essay (20%), and the participation and completion of minor tasks in the daily classes (10%). The results show how the impact in the use of the SNS is significantly positive for the essay and the class activities: what we could call the continuous evaluation and assessment measures. There is no significant difference in the exam marks, although the mean of the second group is higher. When all the three measures are combined into the final grade (mark), we can observe that the impact of the SNS is significant and highly positive (almost 1.5 points more in the final mark). The objective of using the SNS in the course was to improve transversal skills and continuous learning. Students who use the SNS more actively clearly improve their performance towards these objectives.

General assessment

In terms of general assessment, the results are encouraging: 91% of students considered that, as carried out within the activity, the generalization of the use of the SNS could significantly improve the quality of the learning and teaching process at university level. Close to 96% of students would like to 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 courses could be an effective learning tool (table 9).

Table 9. General assessment of the activity.

	Descriptives			Previous experience		
	Mean	Agreem.	Disagreem.	No	Yes	t-test sig.
I'd recommend to other students to enrol in the subject.	4.39	95.92%	1.02%	4.31	4.39	n.s.
I think that the generalisation of these initiatives could improve significantly the quality of learning at university level.	4.28	91.09%	2.97%	3.54	4.38	.000
An integrated SNS for all the subjects, or similar subjects, could be a good learning tool.	4.26	93.88%	5.10%	3.75	4.36	.004
The difficulties to use the SNS de-motivate me to use it.	1.71	6.80%	86.41%	1.70	1.71	n.s.

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 previous experiences with SNSs (table 9). Students who used SNSs for the first time in this experience seem to be more reluctant than students who are accustomed to this tool. However, results are still very positive with respect to the experiment. Students with a more solid digital experience agree with the benefits of SNSs as a learning tool. However no differences were found in the possible de-motivation for its use.

Concluding remarks

The degree of students' usage of the Internet supports the appropriateness of the project. According to the survey, a vast majority of students are online at least once a day and they use their own devices for this purpose, mainly laptops. Therefore, the digital divide (Redecker et al., 2010) concerning Internet access is not a serious drawback for the project;

at least not as much as the difficulties related to attending traditional courses. An interesting aspect to be taken into account is the development and popularisation of mobile devices to get online; this indicates a new trend in education for the next years.

In relation to the aims of the experience, the results indicate positive results regarding the four research questions addressed in the paper:

- active engagement of the students;
- collaborative learning;
- development of critical thinking; and
- content learning.

Most of the respondents considered that the use of the SNS allowed them to use helpful tools to keep their knowledge up-to-date in a lifelong learning context. With no opposing opinions, the use of the SNS was viewed as useful for content learning. This is mainly achieved through a combination of autonomy and collaboration which allows for information exchange with peers and creation of a shared knowledge ground. Students highlighted the positive effect of accessing others' points of view, of sharing ideas and collaborating with peers (as held by social constructivist views). The easier access to different ideas, and the possibility to comment on them in an open minded environment, had also a positive effect in promoting the critical view of students towards contents, resources and opinions.

Flexibility was seen as a key factor in fostering autonomy and collaboration. Respondents assessed very positively the possibility to access the teaching staff and other students at any time and from any location. The impact of the activity in the development of critical thinking is also significant. Given the information overload to which students are exposed on the Internet today, the issue is of special importance because it makes the ability to filter contents a key competence in current and future educational and professional contexts.

Implications and limitations

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. This result leaves the door open for the transference of the experience, and its positive effects, to other knowledge areas and its specific courses, as well as for the creation of an integrated environment for different subjects. Even the students who were not used to implement or create web-content did not perceive the SNS as difficult to use. It is to be noted that previous experience with similar software appears to be a key factor in both, the assessment of the activity and the perceived difficulty. This result leads to the training issue, also raised by Cole (2009): a key factor for success in this kind of experience is the familiarity of all the actors (students and teaching staff) with the platforms and the work dynamics. Therefore, a period of formal training is fairly recommended. In general, students reports high degrees of comfort and familiarity with using SNS and other Web 2.0 tools.

The use of cost-free general-purpose Web 2.0 tools instead of costly institutional learning platforms allows shifting the allocation of economic resources towards a more creative task other than the design and maintenance of the software (Mompo & Redoli, 2010).

Nevertheless, it is to be remarked that the pedagogical efforts should not be focussed purely on the technological possibilities but on the final result of applying these technologies to education. Web 2.0 tools are not pedagogically successful by themselves. Teachers should stress curriculum development, task design and integration into pedagogical practices (Vallance, 2006).

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