

## Dossier “Education and Technology in Mexico and Latin America: Outlook and Challenges”

ARTICLE

# Latin American university students’ perceptions of social networks and group work

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## Abstract

In recent years, the Internet and Web 2.0 tools have played a fairly pivotal role in university education. Social software tools have stood out in particular, with social networks attracting the most attention. In the field of education, social networks have gradually become a highly valuable didactic resource because the students who populate today's university classrooms also live out a large part of their lives on those networks. Student group work is a cornerstone of the constructivist view of teaching, which can draw on resources of this type because, among other things, they foster socialisation, information searching, the attainment of a common goal, etc. But, for all of this to happen, students must have positive attitudes towards group work. This article presents the results of a study on university students' level of knowledge of social networks and their perceptions of group work. It was conducted on a sample of students from Argentina, Spain, the Dominican Republic and Venezuela. The findings particularly show that the students held high perceptions of group work and of the opportunity to work online with fellow students from different geographical areas.

## Keywords

Internet, social software, university students, social networks

## *Percepciones de los estudiantes universitarios latinoamericanos sobre las redes sociales y el trabajo en grupo*

### *Resumen*

En los últimos tiempos la formación universitaria ha estado bastante centrada en el entorno de internet y de las herramientas de la web 2.0. Destacan dentro de este entramado las clasificadas como software social, siendo las redes sociales las que más atención despiertan. En el ámbito educativo las redes sociales se han ido dibujando como un recurso de gran valor didáctico, dado que los estudiantes que hoy habitan las aulas universitarias viven inmersos en ellas. La visión constructivista de la enseñanza, apoyada fundamentalmente en el trabajo en grupo de los estudiantes, puede alimentarse a través de este tipo de recursos, debido a que potencia, entre otros aspectos, la socialización, la búsqueda de información, el logro de una meta común, etc.; pero para ello el alumno debe tener actitudes positivas para trabajar en grupo. En este trabajo, realizado con estudiantes de Argentina, España, República Dominicana y Venezuela, exponemos los resultados obtenidos en un estudio sobre el grado de conocimiento que tiene el alumnado respecto a las redes sociales y sus percepciones para trabajar en grupo. Entre los hallazgos encontrados destaca que los estudiantes tienen una elevada percepción respecto al trabajo en grupo, junto con la posibilidad de trabajar online con compañeros que no están en su misma zona geográfica

### *Palabras clave*

*internet, software social, universitarios, redes sociales*

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## 1. Theoretical approach

Nowadays, it is practically impossible to offer or gain a university education without it involving information and communication technologies (ICTs), as these affect all the variables that intervene in the settings where learning takes place. These are not necessarily physical, as ICTs enable students

to learn anywhere, anytime, and also to set their own pace of self-regulated learning (Álvarez, 2012). Thus, e-learning has become extraordinarily powerful.

However, many experiences carried out in e-learning mode have failed owing to the students' sociocognitive isolation (Anderson, Annand & Wark, 2005). In order to address that, collaborative group educational actions have been suggested as a means of helping to create environments that are more active and participatory, that overcome the issues of isolated or independent work (Gros, González & Lara, 2009; Meirinhos & Osorios, 2009), and that strengthen what is now being referred to as 'e-learning 2.0' (Cabero, 2012). From this perspective, collaborative work relies more and more on technologies, and particularly on social networks and virtual communities (Marqués, 2011; Taya & Allenb, 2011; Callaghan & Bower, 2012; Da Mata, 2012).

Social network penetration is such that the *Social Media around the World* report, which analysed their presence in 14 countries across all continents, points out that 72% of Internet users are members of at least one social network (ONTSI, 2011). And that presence is also on the up in university education contexts (Fogel & Nehmad, 2009; Piscitelli et al., 2010; Domínguez & Álvarez, 2011; Llorens & Capdeferro, 2011; Túnñez & García, 2012; Fondevila, Carrera & Del Olmo, 2012), mainly because social networks offer enormous opportunities for adapting those contexts to the methodologies implemented within the European Higher Education Area (EHEA) (Espuny, González, Lleixà & Gisbert, 2011).

This leads us to point out – as shown in two *Horizon Reports* focusing on Latin America – that social networks and collaborative work have emerged as two tools with significant penetration in educational institutions (García et al., 2011; Durall et al., 2012).

However, their incorporation into university education contexts is dependent on two particular aspects: first, students' ICT skills in an educational environment, about which there are studies that give divergent results (Marín & Cabero, 2010; Solano, González & López, 2013); and second, students' favourable attitudes towards collaborative group work (Martínez, 2003).

## 2. Our study

The results of our study on university students' perceptions of social software – specifically social networks – and of collaborative group work are presented in section 4 of this article. The study was conducted on a sample of students from several Latin American countries and Spain. The objectives were:

- To identify the students' perceptions of social software and of collaborative group work (in comparison to individual work).
- To identify whether the country of provenance gives rise to differences in perceptions of group work and individual work.
- To identify which social software tools are used most by the students.

### 3. Method

An adapted version of the questionnaire by Anderson and Poellhuber (2009) ("Social Software survey used with unpaced undergrad") was used for data collection. The original questionnaire had 91 items divided into the following dimensions: Identification, Learning Preferences, Technical Skills, Social Software Experience, Social Software for Learning, Confidence in Distance Education Abilities, and Wrap up. The questionnaire was adapted by incorporating an identification variable (university of provenance) and removing the last two dimensions, as they did not fit with our study objectives. The final version of our questionnaire had 68 items divided into the following dimensions: General Aspects (university, gender, etc.), Individual or Group Work Preferences, Technical Skills, Web 2.0 Tool Experience and Use of Different Social Software Tools in Distance Education.

The questionnaire was administered via the Internet in autumn 2012 and can be viewed here <http://www.sav.us.es/encuestas/redsocial/index.htm>. Given that the questionnaire had been modified, Cronbach's alpha test was performed to determine its reliability. The value obtained was 0.860, a figure that, according to Mateo (2006), could be considered high.

There were 1,040 participants from universities in Spain (University of Seville, University of the Basque Country and University of Cordoba), Venezuela (Metropolitan University and University of Carabobo), the Dominican Republic (Pontificia Universidad Católica Madre y Maestra, PUCMM) and Argentina (National Technological University, UTN). Of the participants, 70% were female, 45.65% were 17-20 years old, 26.99% were 21-24 years old and 11.67% were 25-28 years old.

Furthermore, 64.9% stated that they had undertaken Internet-mediated activities, and 94.25% stated that they regularly accessed the Internet for educational purposes.

### 4. Results

Starting with the students' learning preferences, Table 1 shows the results obtained.

Of the participants, 89.73% indicated that they knew how to work by themselves because they replied "SD" or "D" to the statement "I do not know how to work by myself", though they preferred working in groups, as we can see from the following replies, where the sum of the percentages for the "A" and "SA" options stands out from the others:

- Group work is helpful to put together everyone's ideas when making a decision (86.55%).
- I like to be able to use the ideas of other people as well as my own (85.90%).
- We get the work done faster if we all work together (84.70%).
- Working with other students can help me learn (97.15%).
- I like to be able to use the ideas of other people as well as my own (63.53%).

Table 1. Learning Preferences

	<i>SD</i>	<i>D</i>	<i>N</i>	<i>A</i>	<i>SA</i>
	%	%	%	%	%
Working with a group leads to poor results.	28.16	44.44	23.37	2.78	1.25
A teacher can help most by working with students in groups.	3.07	1.82	4.22	50.77	40.12
I prefer to work by myself so I can go as fast as I like.	5.20	26.49	39.79	21.00	7.51
Group work is helpful to put together everyone's ideas when making a decision.	3.65	3.55	5.96	52.83	34.01
When a group or class needs something important done, working it out in a group helps me more than working it out on my own.	3.17	10.96	20.96	48.56	16.35
Working in a group scares me.	50.29	38.87	7.10	2.98	0.77
I do not like working by myself.	15.01	30.99	37.92	12.70	3.37
In a group discussion, we never reach important conclusions.	24.57	50.39	18.47	6.07	2.50
I like to work in groups when taking courses.	1.61	9.27	44.56	36.90	7.66
I like to be able to use the ideas of other people as well as my own.	1.64	3.67	8.79	65.80	20.10
If I work by myself most of the time, I become lonely and unhappy.	23.08	43.45	20.27	10.48	2.72
We get the work done faster if we all work together.	2.90	2.71	8.70	37.78	47.92
I do better quality work by myself.	6.89	34.92	45.30	9.99	2.91
I like to help other people do well in a group.	1.36	2.33	8.72	62.40	25.19
If I work by myself now, I will manage better later.	5.91	30.43	35.85	22.67	5.14
I do not know how to work by myself.	47.00	42.73	7.75	1.55	0.97
I like my work best if I do it myself without anyone's help.	6.99	33.50	38.74	16.99	3.79
Other students do not need to know what I do when I am studying.	8.51	30.66	39.75	18.38	2.71
Working in a group now helps me work with other people later.	1.35	1.35	5.70	48.89	42.71
I like to keep my ideas to myself.	1.26	5.63	24.83	57.03	11.25
The teacher can help most by choosing work that is right for each student.	1.55	7.86	19.98	56.55	14.06
Working with other students can help me learn.	0.49	0.68	3.69	55.83	39.32
I like to work on my own without paying attention to other students.	24.88	51.80	17.88	4.66	0.78
I do not like working with other students.	34.01	48.06	11.53	4.26	2.13

SD=Strongly Disagree, D=Disagree, N=Neither Agree nor Disagree, A=Agree, SA=Strongly Agree.

We can also see this preference in the items formulated negatively, where the sum of the "SD" and "D" replies stands out from the others:

- Working with a group leads to poor results (72.60%).

- Working in a group scares me (89.16%).
- In a group discussion, we never reach important conclusions (74.96%).
- I like to work on my own without paying attention to other students (75.68%).
- I do not like working with other students (82.47%).

To the statement "I prefer to work by myself so I can go as fast as I like", reply option "N" had the highest percentage (39.79%). On the other hand, the students perceived that group work would be a necessary prerequisite for future learning and work:

- If I work by myself now, I will manage better later (only 27.81% replied "A" and "SA").
- Working in a group now helps me work with other people later (91.60% replied "A" and "SA").

Asked about their preferences regarding certain aspects of group work, the three reply options that accounted for nearly 50% of the distribution were:

- Sharing resources on the Internet (18.44%).
- Working on a project (17.55%).
- Doing an assignment or courses (15.55%).

By country, the results obtained were:

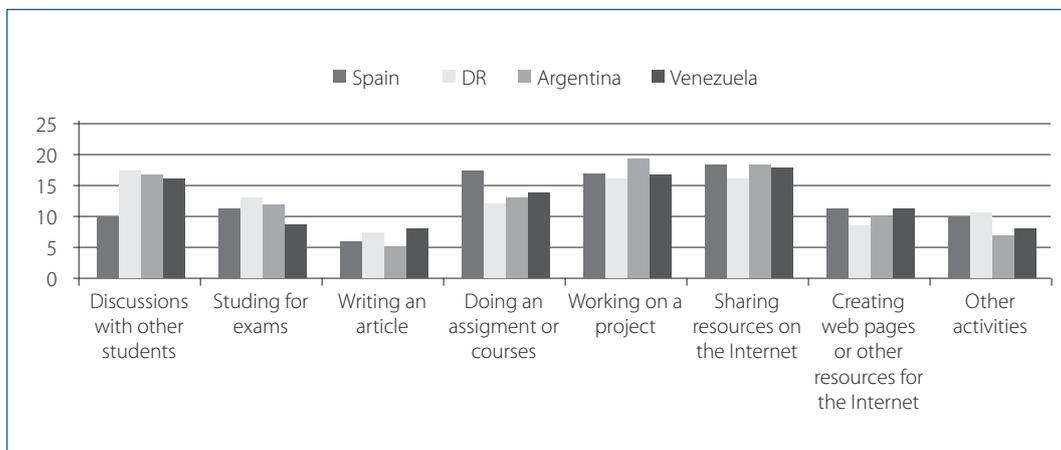


Chart 1. Preferences regarding certain aspects of group work

A high percentage of the students rated their group work experience as "positive" (57.25%), followed by "neutral" (20.78%) and "very positive" (19.61%). It should be noted the sum of the negative ratings was less than 3%. These data were similar for all the countries (Chart 2).

A high percentage of the students stated that they were "interested" in group work (63.17%), followed by "very interested" (23.09%). It should be noted that the sum of "not at all interested" and "not very interested" replies was less than 8%. These data were also similar for all the countries (Chart 3).

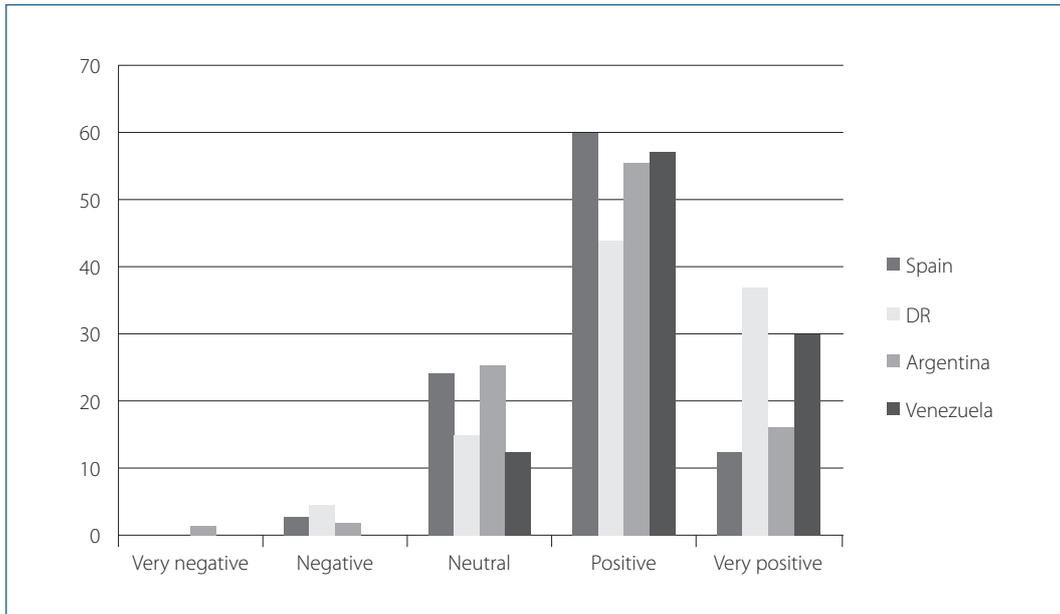


Chart 2. Group work experience

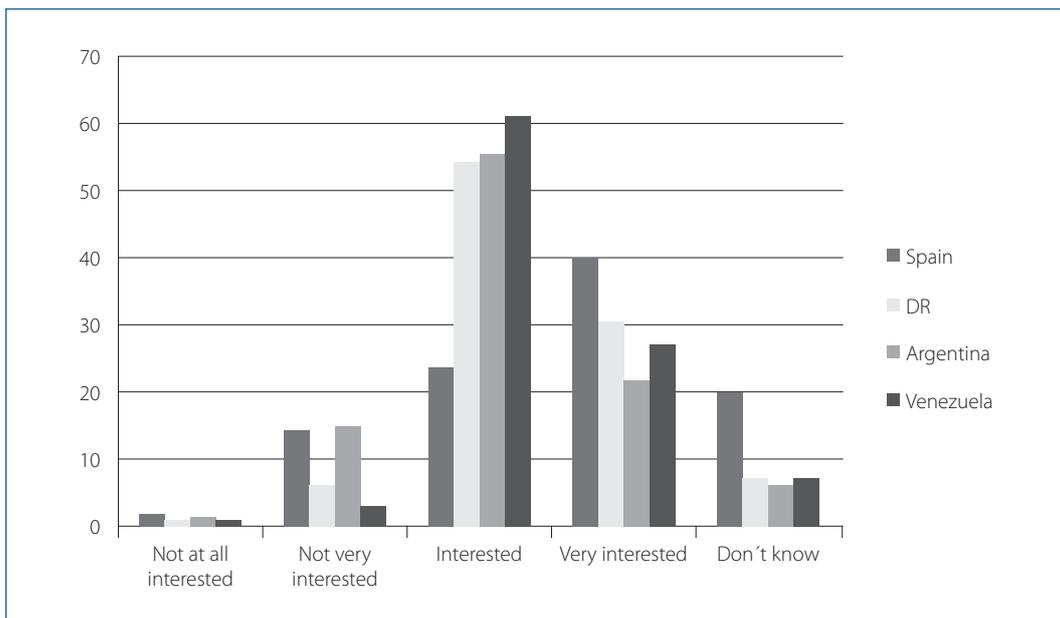


Chart 3. Interest in working with other students

Moving on to the students' technical skills with regard to handling the various technologies, Table 2 below shows the results obtained.

As we can see, their perceptions of ICTs were positive. In some cases, the sum of the "A" and "SA" options is more than 80%.

- I like using computers for research and education (90.67%).

- I like to communicate with others using computer-supported communication (e.g., e-mail, text messaging) to support my learning (87.46%).
- I feel at ease when working with computers (84.65%).

Table 2. Technical Skills

	<i>SD</i>	<i>D</i>	<i>N</i>	<i>A</i>	<i>SA</i>
	%	%	%	%	%
I like using computers for research and education.	1.47	1.28	6.58	51.32	39.35
I like to communicate with others using computer-supported communication (e.g., e-mail, text messaging) to support my learning.	0.79	2.76	8.98	50.54	36.92
I spend a lot of time on the Internet.	3.04	15.21	24.24	34.45	23.06
I know how to send and receive messages and attachments through various communication tools (e-mail, instant messaging, etc.).	1.67	1.38	1.87	33.07	62.01
My computer is safe from threats that may arise when I connect to the Internet.	2.45	7.56	17.66	45.04	27.28
I am good at finding precisely what I am looking for when I use Internet search engines (Google, Yahoo, etc.).	0.29	3.93	13.95	51.87	29.96
When other students become confused about how to do something with computers, I am able to find information to resolve the problem (help function, documentation, etc.).	1.38	9.92	31.83	39.00	17.88
I feel confident about writing documents on word processors (e.g., underlining, using bold, creating tables, etc.).	0.99	1.38	6.11	36.95	54.58
I know how to install software to support my learning using computers.	5.21	19.06	20.04	29.37	26.33
I feel at ease when working with computers.	0.79	2.76	11.71	44.59	40.16
I can troubleshoot most problems associated with using a computer.	3.64	17.99	30.29	31.17	16.91
I have extensive experience using computers.	2.07	16.39	30.60	32.97	17.97
I am good at using presentation software (e.g., PowerPoint).	1.68	7.12	18.30	43.52	29.38
I am good at using spreadsheets (e.g., Excel).	6.05	25.69	27.48	28.08	12.70
I am able to set up and manage file directories.	4.45	18.97	30.14	31.03	15.42

SD=Strongly Disagree, D=Disagree, N=Neither Agree nor Disagree, A=Agree, SA=Strongly Agree.

They also stated that they were able to carry out various activities, as we can see from the percentages for the sum of the "DA" and "SA" options:

- I know how to send and receive messages and attachments through various communication tools (e-mail, instant messaging, etc.) (95.08%).
- I am good at finding precisely what I am looking for when I use Internet search engines (Google, Yahoo, etc.) (81.83%).
- I feel confident about writing documents on word processors (e.g., underlining, using bold, creating tables, etc.) (90.53%).
- I am good at using presentation software (e.g., PowerPoint) (72.90%).

The students recognised that they “spend a lot of time on the Internet” because the sum of the “A” and “SA” options is 57.51%. We did not find high percentages for the “SD” (3.04%) and “D” (15.21%) replies. The results obtained were similar for all the countries.

Regarding the students' social software experience, Table 3 below shows the results obtained.

Table 3. Social Software Experience

	<i>N</i>	<i>B</i>	<i>I</i>	<i>A</i>	<i>E</i>
	%	%	%	%	%
What has been your experience with blogs?	13.54	32.21	27.57	23.52	3.16
What has been your experience with Wikis?	32.84	30.28	27.22	8.28	1.38
What has been your experience with social bookmarking (e.g., Delicious, Diigo)?	71.74	15.82	8.46	3.28	0.70
What has been your experience with web conferencing? E.g., Elluminate, Adobe Connect, Skype.	23.96	30.79	17.72	21.39	6.14
What has been your experience with social networking? E.g., Facebook, MySpace, Ning.	2.67	6.43	13.75	46.09	31.06
What has been your experience with photo publishing? E.g., Flickr, Picasa, Facebook.	5.32	13.10	21.28	42.07	18.23
What has been your experience with video sharing? E.g., YouTube, Vimeo.	8.22	18.42	30.79	29.50	13.07
What has been your experience with podcasting?	67.29	17.84	11.00	2.97	0.89
What has been your experience with immersive 3D software? E.g., Second Life.	77.40	15.86	4.36	1.49	0.89

N=None, Non-User: have no idea about it; B=Beginner: Have some knowledge about it; I=Intermediate: Can search, tag and comment; A=Advanced: Own an account and do contribute with postings, files or resources; E=Expert: I know most everything about using this tool.

The data obtained allow three groups to be formed according to the skills level the students claim to have. One group includes technologies for which they claimed to have “advanced” skills: social networking (46.93%) and photo publishing (42.97%); and another includes technologies for which their level was “none, non-user”: Wikis (32.84%), social bookmarking (71.74%), podcasting (67.29%) and immersive 3D software (77.40%). Lastly, the third group includes technologies where the “beginner” and “intermediate” options had similar percentages: blogs (32.21%) and web conferencing (30.79%).

These data allow us to assert that the students' skills were non-existent or poor in relation to many of the technologies, although they did claim to have “intermediate” and “advanced” skills in relation to photo publishing and video sharing. The “advanced” and “expert” levels of their social networking experience stand out (77.15%).

Regarding the social networks (Facebook, Twitter, LinkedIn and Hi5), 66.34% of the students stated that Facebook was the one they used the most, whereas 31.60% preferred Twitter. Only 2% of them indicated the other two options: LinkedIn and Hi5.

By country, Chart 4 below shows the results obtained. Facebook stands out from the rest of the social networks in every country but Spain.

The aim of the final part of the questionnaire was to ascertain how interested the students were in having and using specific social software tools on their courses (Table 4).

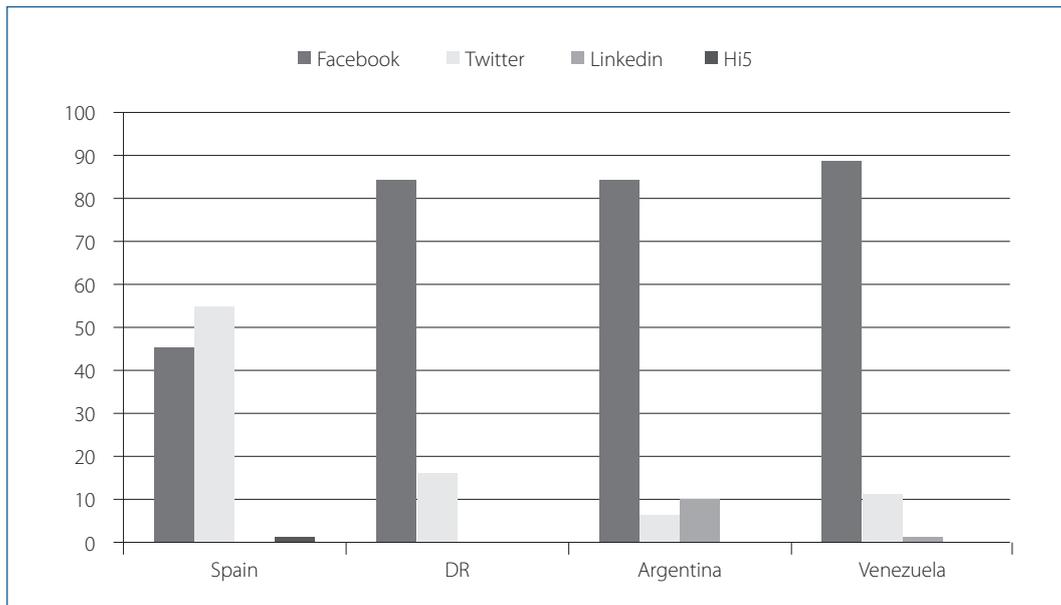


Chart 4. Social Network Use

Table 4. Social Software for Learning

	NAI	NVI	I	VI	DK
	%	%	%	%	%
How interested are you in having Wikis used on your course?	5.65	19.52	47.37	14.77	12.69
How interested are you in having social bookmarking tools used on your course? E.g., Delicious, Diigo.	11.96	26.82	34.30	8.08	18.84
How interested are you in having web conferencing tools used on your course? E.g., Elluminate, Adobe Connect, VIA.	5.89	18.68	47.05	19.78	8.59
How interested are you in having social networking tools used on your course? E.g., Facebook, MySpace, Ning.	3.81	12.04	48.04	34.60	1.50
How interested are you in having photo publishing tools used on your course? E.g., Flickr, Picasa.	4.30	18.02	48.85	23.62	5.21
How interested are you in having video download and sharing tools used on your course? E.g., YouTube, Vimeo.	1.60	7.20	51.80	37.70	1.70
How interested are you in having podcasting tools used on your course?	9.12	22.34	38.38	11.42	18.74
How interested are you in having social networking tools like Twitter and Facebook used on your course?	4.79	13.7	43.21	37.03	1.80
How interested are you in having e-portfolio tools used on your course?	5.46	18.67	44.49	14.60	16.78

NAI=Not at All Interested, NVI=Not Very Interested, I=Interested, VI=Very Interested, DK=Don't Know

As we can see, the most popular option was "interested". However, three of the items had high percentages for the "not very interested" reply option. These items were "How interested are you in having social bookmarking tools used on your course?" (19.52%), "How interested are you in having podcasting tools used on your course?" (22.34%), and "How interested are you in having e-portfolio tools used on your course?" (18.67%).

One of our objectives was to identify whether there were any significant differences between the students from the different countries in the four large dimensions of the questionnaire. To that

end, we formulated two classic hypotheses: the null hypothesis (H0), referring to the non-existence of significant differences, and the alternative hypothesis (H1), which went in the opposite direction.

Table 5. Kruskal-Wallis Statistic

	<i>K-Wallis</i>	<i>Level of significance</i>
Learning Preferences	5.105	0.164
Technical Skills	192.909	0.000(**)
Social Software Experience	42.530	0.000(**)
Social Software for Learning	39.468	0.000(**)

\*\*=significant at 0.01

We used the Kruskal-Wallis statistic (Gibbons & Chakraborti, 2003) for independent samples, and performed the analysis with SPSS. Table 5 below shows the results obtained.

Table 6. Differences between the Countries

<i>Samples</i>	<i>Statistical test</i>	<i>Sig.</i>
<b>Technical Skills</b>		
Spain-Dominican Republic	-25.311	1.000
Spain-Venezuela	-111.478	0.000(**)
Spain-Argentina	-364.027	0.000(**)
Dominican Republic-Venezuela	-86.166	0.085
Dominican Republic-Argentina	-338.716	0.000(**)
Venezuela-Argentina	252.549	0.000(**)
<b>Social Software Experience</b>		
Dominican Republic-Spain	119.625	0.001(**)
Venezuela-Spain	4.152	1.000
Spain-Argentina	-120.243	0.000(**)
Dominican Republic-Venezuela	-115.473	0.007(**)
Dominican Republic-Argentina	-239.868	0.000(**)
Venezuela-Argentina	124.395	0.000(**)
<b>Social Software for Learning</b>		
Spain-Dominican Republic	-67.591	0.226
Spain-Venezuela	-127.679	0.000(**)
Argentina-Spain	26.547	1.000
Dominican Republic-Venezuela	-60.088	0.540
Argentina-Dominican Republic	94.138	0.780
Argentina-Venezuela	-154.226	0.000(**)

\*\*=significant at 0.01

These results allowed us to reject H0 for the "Technical Skills," "Social Software Experience" and "Social Software for Learning" dimensions, with an alpha value of 0.01, and accept it for the "Learning Preferences" dimension, where we did find significant differences between the different universities. In order to establish where the differences between the countries resided, we applied the Dunn test (Dunn, 1964) (Table 6).

As we can see, the biggest differences in the three dimensions were between students in Argentina and Spain, and the Dominican Republic and Venezuela..

## 5. Discussion of results and conclusions

The study presented here has enabled us to put forward several ideas for the incorporation of different strategies and ICTs into present-day e-learning. Regarding the first objective (to ascertain the students' perceptions of social software and of collaborative group work (in comparison to individual work)), it should be noted that the students, irrespective of the Latin American country, had positive attitudes towards group work and considered that it did not have a negative impact on learning outcomes. That leads us to assert that, initially, there are significant predispositions and attitudes towards group work. Consequently, teachers should not be afraid to incorporate it into e-learning processes. At the same time, it could be considered a strategy for overcoming one of the variables of failure in learning of this type: the students' sociocognitive isolation.

Regarding the second objective (to identify whether the country of provenance gives rise to differences in perceptions of group work and individual work), we can conclude that, irrespective of their country of provenance, the students participating in the study perceived that group work was one of the ways of working in the knowledge society, which would facilitate the implementation of collaborative work actions between students from different countries. This coincides with the findings of other studies at lower educational levels (Túñez & García, 2012), and with going beyond the roles traditionally allocated in the teaching-learning process (Tinmaz, 2012). Our study also showed that the students had extensive experience of using the Internet for educational work. Thus, educational experiences to which this technology could be applied were welcomed by the students. In the Latin American context, this aspect will enable us to work on the students' so-called 'virtual mobility' for learning.

And lastly, regarding the third objective (to identify which social software tools are used most by the students), we should point out that, if social media are knocking on the doors of educational institutions, and if our students' knowledge of them and perceptions of group work are as good as they claim, then the expectations of what can be achieved by incorporating such media into education should be high. These results differ from those obtained from other studies (Marín & Cabero, 2010), which indicated that students had limited knowledge of Internet tools and of their educational value.

The compiled data support the efforts made by many universities to incorporate social networks into educational actions (Baltaci-Goktalay & Ozdilek, 2010; Piscitelli et al., 2010).

Finally, it should be noted that the questionnaire used (Anderson & Poellhuber, 2009) is a very useful and valid tool for ascertaining how interested a certain part of the population is in group work, and also for identifying how students use social software.

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