






University Students and Informational Social Networks: Total Sceptics, Dual Moderates or Pro-Digitals

Universitarios y redes sociales informativas: Escépticos totales, moderados duales o pro-digitales

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ABSTRACT

The goal of the present work is to analyze the use of social networks as a tool for social empowerment by Spanish university students, and their perception of the university as an institution that contributes to the formation of a critical and active citizenship, that provides them with the relevant digital competences. The literature review shows possible discrepancies regarding the effect of new forms of digital communication in empowering young people, specially university students, as well as the existence of issues related to clarify this digital stage. Following, a typological analysis of the perception of university students regarding social information networks, social empowerment and the role of the university is presented. Using the data collected through a structured questionnaire of a sample of 236 students of social science degrees, an analysis of typologies is performed with the algorithm K Medias. Three clusters significantly different –labeled as “total sceptics”, “dual moderates” and “pro-digitals”– are identified. Its prevalence and its characterization are explained: belief and behaviour profiles related to these beliefs. The paper concludes with several recommendations for future research regarding the perception of the students about the use of social networks as a tool for social transformation and the role of the university in this area.

RESUMEN

El objetivo del presente trabajo es analizar el uso de las redes sociales informativas como herramienta de empoderamiento social por los universitarios españoles, y su percepción de la universidad como institución que contribuye a la formación de una ciudadanía crítica y activa, al tiempo que les proporciona las pertinentes competencias digitales. La revisión bibliográfica evidencia posibles discrepancias respecto al efecto que tienen las nuevas formas de comunicación digital en el empoderamiento de los jóvenes y en particular de los universitarios, así como la existencia de numerosas cuestiones por aclarar en este escenario digital. A continuación se presenta un análisis tipológico de la percepción de los estudiantes universitarios respecto a las redes sociales informativas, empoderamiento social y el papel de la universidad. A partir de los datos recogidos mediante un cuestionario estructurado de una muestra de 236 estudiantes de Grados de Ciencias Sociales, se realiza un análisis de tipologías con el algoritmo K Medias. Se identifican tres tipos –etiquetados como «escépticos totales», «moderados duales» y «pro-digitales»– significativamente diferentes. Se explica su prevalencia, y su caracterización: perfiles de creencias y conducta relacionados con dichas creencias. El trabajo concluye con diversas recomendaciones para futuras investigaciones en cuanto a la percepción del universitario sobre el uso de las redes sociales como herramienta de transformación social y el papel de la universidad.

KEYWORDS | PALABRAS CLAVE

Digital context, information use, media competence, university, social networks, public opinion, critical thinking, quantitative analysis.

Contexto digital, uso de la información, competencia mediática, universidad, redes sociales, opinión pública, pensamiento crítico, análisis cuantitativo.



1. Introduction and state of the art

The new forms of digital communication have helped democratize the process of communication. Social networks facilitate citizens' access to a wealth of information and enable them to organize themselves to participate in the formation of public opinion through the exchange of information and opinions (Saorín & Gómez-Hernández, 2014; Viché, 2015). This state of affairs increases communicating subjects' autonomy from communication companies (Castells, 2009), as citizens not only observe, but also become part of the process of constructing the news (Orihuela, 2011). Today, individuals can inform one another on a large scale, and thus play a leading role in the society of information and knowledge, and even overflow the boundaries of public institutions (Islands & Arribas, 2010).

Participation in social networks thus contributes to citizen empowerment and enhances social solidarity by raising awareness of certain subjects and allowing people to transcend local reality and accede to a more global sphere (Espiritusanto & Gonzalo, 2011). As against official news organizations that have traditionally decided how events should be presented, we are witnessing the emergence of news produced by ordinary people who have something to say or show (Gillmor, 2006). In this way, the knowledge of reality that we get from the media and that comes from the thematic selection made by these media (agenda setting) is giving way to citizens' agenda focused on issues that interest them (Rivera-Rogel & Rodríguez-Hidalgo, 2016).

In the case of young people, these new capabilities to access, provide and disseminate information have given rise to a number of critical reflections. Many of such analyses highlight the opportunities social networks provide for social participation and mobilization (De-Moraes, 2004). However, social networks' influence may be more complex than it would initially appear, as it may be minimizing the role of critical thinking. The speed at which information is generated and the criteria used to select it to raise questions as to whether different points of view are being excluded, thus choking off the potential for debate. Hence, the capacity for critical thinking and training in the use of media become crucial, especially in higher education.

Studies of young people reveal that the most common use they make of networks is contact and the creation of relationships, entertainment and finding out about the lives of others (Bringué & Sádaba, 2011). Therefore, there is an open discussion on whether these new forms of communication contribute to the empowerment of young people or if, on the contrary, they have not (yet) fostered debate and the exercise of youthful, active citizenship (Díez, Fernández-Rodríguez, & Anguita, 2011).

The foregoing reveals a possible discrepancy between the opportunities that social networks offer university students to express themselves, share, stay informed, debate, organize and mobilize (Yuste, 2015), as against their training in the use of such networks, their competences and the development of critical thinking.

A review of the literature leaves open a number of issues for analysis: Does virtual socialization of university students make them active and critical citizens? Do informational social networks facilitate participation and debate? Are they an instrument of social empowerment or merely of individual socialization for university students? Do students take on and exercise their capacity to influence, or are they merely part of a mass that is easily influenced, that multiply the positions of specific users that are highly influential (influencers)? How do they see the role of the university in the acquisition of digital competences and the development of critical thinking in tackling this huge amount of information?

The aim of this paper is to offer a current analysis of the role of social networks as a tool for social empowerment among Spanish university students, and of students' perception of the university as an enabler of education in the use of media to become active and critical citizens.

There is a wide disparity in public participation in social networks between those who do no more than indicating that they like a piece of news, those who forward such news, those who comment on it, and those who contribute new materials (Fundación Telefónica, 2016). This diversity in the issues posed should, presumably, be found among university students as well. We believe that a typological analysis would be an appropriate research technique to study this. This technique of multivariate, descriptive and non-inferential analysis can extract information from a data set with no prior restrictions and is quite useful as a tool without imposing preconceived patterns (Gordon, 1999). In this way, we will identify and describe the different profiles of students with regard to the research questions posed.

The paper is organized as follows: first, an introduction outlines the state of the question by addressing the importance of education in informative social networks and media as tools facilitating empowerment; next, the materials and methods used in the empirical work are described; then, the analysis and results are presented and, lastly, the discussion, conclusions, and limitations of the research are set forth.

1.1. The importance of education in media for the new digital environment

The opportunity for empowerment offered by digital society must be grounded in the sound education of its members in order to be effective. Accordingly, the challenge is to integrate the media within educational processes by critically thinking about them and their powerful weapons for recreating and constructing reality (Aguaded, 2005). This amounts to an educational project whose purpose is to cultivate e-citizens who are aware, critical and responsible with the information they deal with.

We live in an environment where news can be distorted in a way that affects rights such as freedom of speech, information, and participation. The flow of information we receive on a daily basis is overwhelming, and it arrives unfiltered and with no critical analysis. Given these facts, it is important to increase the dose of citizen education by fostering critical and plural thinking (Delgado, 2003). However, now that users have an obviously active role as constructors of social reality (Saorín & Gómez-Hernández, 2014), it is also essential for such new competences to be strengthened by educational institutions. This challenge is acute in universities, which must also use research to analyze and comprehend the social changes brought about by this transformation (Lara, 2009).

The necessity and importance of educating in the use of the media are long-standing in recent history, having begun in the 1980s with UNESCO's Grunwald Declaration of 1982. However, media education takes on a new dimension in today's digital society. Media education enables the development of strategies for fostering dialogue between sectors, social groups, and generations (Frau-Meigs & Torrent, 2009). This education should address issues such as the influence of different media, their socializing function, the control they exercise and are subjected to, and the different information they convey (González-Sánchez & Muñoz-Rodríguez, 2002). The aim is to train aware University professionals and e-citizens capable of accessing a large volume

of information, so that they are able to freely decide what contents are relevant and adequate for them, and to enable them to make a responsible choice when faced with the multiple options they encounter (Ballesta & Guardiola, 2001; Valerio-Urena & Valenzuela-González, 2011). This means designing study programs that include cross-disciplinary subjects related to media literacy that strengthen citizen's competences (Ferrés, Aguaded, & García-Matilla, 2012). This task should involve communication professionals, university professors and teachers of compulsory education (Area, 2010; Marta-Lazo & Grandio, 2013).

However, hardly any work has been done on the role of the university in the process of creating critical citizens in this new technological context of information access. Hence, a number of issues arise: Are universities effectively fostering literacy in the use of the media? Are universities favoring the citizen empowerment offered by media? An answer to these questions would require an analysis of the activities carried out in the university world. However, beyond what is happening at universities, a perception prevails that university students are playing the key role, and are the main product of university processes.

A review of the literature leaves open a number of issues for analysis: Does virtual socialization of university students make them active and critical citizens? Do informational social networks facilitate participation and debate? Are they an instrument of social empowerment or merely of individual socialization for university students? Do students take on and exercise their capacity to influence, or are they merely part of a mass that is easily influenced, that multiply the positions of specific users that are highly influential (influencers)? How do they see the role of the university in the acquisition of digital competences and the development of critical thinking in tackling this huge amount of information?

In order to offer a specialized vision, we opted to focus our research on the use of social networks. Hence, we deemed it useful to contextualize Twitter within the phenomenon of social empowerment.

1.2. Informative social networks as a tool of citizen empowerment

Twitter, with 317 million active accounts at present (statista.com, 2016), has become the social network most widely used by the public to stay informed, express opinions, comment on the news, reporting on what is going on nearby and even to mobilize society in matters of public interest. Some authors have called it one of the most powerful communication mechanisms in history (Piscitelli, 2011). The public nature of tweets, unlike the privacy of messages in other social networks, propagates information in real time (Congosto, Fernandez, & Moro, 2011).

However, there is a certain debate in the literature about its international scope. Some authors contend that Twitter is something more than a social network (Romero, Meeder, & Kleinberg, 2011), as an indispensable platform for the transmission of information and news; for others, it is a hybrid network, halfway between a social network and an information stream, because it combines the essential practices of social networks such as “following”, “friending”, with the essence of “broadcasting” or the dissemination of content. This convergence would make it important for journalism (Bruns & Burgess, 2012). Assuming this hybrid nature, authors like Kwak, Lee, Park and Moon (2010) have emphasized its informational nature, as users turn to it mainly to exchange information and not so much to engage in social relations, as is the case with Facebook. We have even encountered arguments that accept Twitter’s informational nature, although limiting this to flashes or alerts related to coverage of tragedies or breaking news. Noteworthy is the study by the Pew Research Center (2015) that correlates news and information reading habits with the use of Twitter and Facebook in North America. The study argues that Twitter is not a social network as such, but rather a platform to receive and share information (informational social network), with a special focus on breaking news and constant updates.

If we turn our attention to the use of Twitter by millennials, 2016 reports position the network as a communication platform that is mainly oriented to the management of news, and that is predominantly news-related (40% of users use it as a source of information). For millennials, it is a place to communicate with others, establish relationships and access information at any time and in any place (The Cocktail Analysis & Arena, 2016). It is a network that has consolidated itself in this generation, with a high degree of penetration, although it has a leisure or socially oriented use: it enables them to stay in touch with friends, family and classmates (90%), share opinions and seek out the opinions of others (60%), seek out information (70%) and freely express opinions (45%) (Ruiz-Blanco, Ruiz-San-Miguel, & Galindo, 2016). Its use has grown significantly, and it now reaches 24% of connected youth, surpassing penetration in adults (12%) according to Pew Research.

These data confirm the profound changes that the social platforms are giving rise to and unquestionably encompass millennials, which include university students. The degree of the impact of technology on university students and their digital competences has radically altered the way they interact and stay informed (Romero-Rodríguez & Aguaded, 2016). However, the absence of a filter does not allow us to consider the content to be a valid source of information, as all information must be checked (Said, Serrano, García de Torres, Yezers’ka, & Calderín, 2013); also, the lack of context for this immense quantity of information (Rivera-Rogel & al., 2016), are significant factors that give rise to the need to research how students process all the information they receive, who are the opinion leaders they follow, how they choose them and how such leaders influence other users of informational social networks. In short, the point is to clarify if the alleged social empowerment attributed to these information platforms is effective among students.

2. Material and methods

Typological analysis –that is, cluster analysis– is a technique of interdependence that can identify different profiles of subjects on the basis of quantitative variables that define their characteristics and provides the prevalence of the typology in the studied sample, in addition to the profiles. Widely used in scientific research, this method is clearly exploratory and descriptive in nature, as it classifies individuals into uniform groups whose a priori composition is unknown, based on a similarity measure (Hair, Anderson, Tatham & Black, 1999).

In this way, we carried out an exploratory study using as material for the empirical part of this work the information collected from a sample of 236 university students in degree programs of Commerce, Journalism, Advertising and Business Administration at public universities. These degree paths were chosen because they all include courses on communication, which familiarizes participants with the potential of social networks. The

sampling method used was by clusters, with classes used as sampling units. The field work was conducted between 15th and 25th October 2016.

To collect the data, we designed a structured direct answer questionnaire initially comprising 120 variables, mainly with Likert seven-position scales in which the participant indicates the degree of agreement with the content of the item (1=strongly disagree and 7=strongly agree). This satisfies one of the requirements of cluster analysis, namely that information from subjects should be numerical in nature.

The content of the questionnaire addresses the following areas:

Behaviour area: objective information on students' participation in informational social networks (Twitter) with a specification of the social networks in which they have an account and are active, what type of activity they engage in, the intensity of the participation, their capacity to influence (followers vs. followed) criteria for selection of sources, preferences and content of interest, motivation for use of informational social networks (expression, relationship, influence in their surroundings, social awareness, citizen collaboration, involvement in political affairs or mobilization of citizen action).

Belief area: related to information produced and consumed in social networks by students. Perception of the information that circulates in networks, the credibility of their content, the importance of the immediacy of the information, the mediation of the content, the importance and meaning of checking information. Awareness of the capacity to influence, self-perceptions of their degree of knowledge, skill and ability in the use of the new communication tools and the training they receive in the university that enables them to participate as truly empowered citizens.

The following were also included as classification data: degree area, gender, age, and the average of academic transcript to date.

A double questionnaire pre-test was performed prior to the field work. Items' suitability was analysed by a group of experts consisting of university professors with extensive experience in quantitative research (Churchill, 1979). Subsequently, and after due modifications were made as recommended by the experts (elimination of two variables and modification of a third) a second pre-test was performed with a sample of 15 users from the universe in which the field work was to be applied. The aim was to verify the comprehensibility of the sentences and time required to

Behaviour area	Belief area
Activity in social networks	Credibility of information
Ability to influence	Quality of information
Criteria for the selection of the sources	Volume and diversity of information
Thematic preferences and content of interest	Immediacy of information
Reasons for the use of social networks	Ability to create opinion
	Ability to influence the social milieu
	Universities and critical thinking
	Universities and media skills

complete the test. This pre-test led to the removal of three items. After the two pre-tests, the final questionnaire consisted of 115 items organized into 13 questions.

For the cluster analysis, we used the K Average algorithm, the only requirement of which is to have numerical variables to set up groups, a condition that was met owing to the response scales used. The data were exploited with the statistical analysis package SPSS, version 18.0 for Windows.

3. Analysis and results

We have a sample of 236 university students (Table 2: see next page) in which the 95.6% state that they use an informational social network to keep up with the news: Twitter (46.9%), Facebook (42.1%) and Instagram (6.6%).

The aggregates yielded by the cleaning up of the items were used as the active variables for the identification of groups of homogeneous subjects. The K means algorithm, after a process of seven iterations, issued a final solution of three clusters with significantly different average scores in the main characterization factors (Table 3: see next page).

These groups may be characterized by taking as a reference the core values in each factor and the differences observed in the behaviour of each (Sparrowhawk, Martínez-Navarro, & Fernández-Lords, 2017).

The first cluster, labeled as "total sceptic" students, makes up 10.18% of the sample. Its members have the most

critical profile, as disenchanted with both social networks and the role played by the university in their education as digital citizens. They give low credibility to the information that circulates online (23%) and assume that immediacy prevails over the quality, volume, and diversity of information. They see themselves with low, almost zero, ability to influence their environment through the use of social networks (2.7). And they do not believe that social networks offer an opportunity for empowerment, and do not understand them as a tool that enables them to create opinion, or as a vehicle for mobilization in society. They are also sceptical regarding the university's role in fostering literacy, as an institution for creating critical citizens. This doubly sceptical attitude leads us to call them "total sceptics".

Scale	Characterization factors	Clusters		
		1	2	3
		% subjects in each cluster		
0-100	Credibility of information	10.2%	58.8%	31%
1-7	Quality of information	23.64	52.50	73.79
	Volume and diversity of information	2.27	3.13	3.89
	Immediacy of information	3.45	4.30	4.94
	Ability to create opinion	4.80	5.91	6.18
	Ability to influence the surroundings	2.55	3.31	4.50
	Universities and critical thinking	2.71	2.99	3.50
	Universities and media skills	4.14	5.04	4.18
		3.52	3.67	3.59

reading of other people's comments and opinions without engaging, proposing topics of debate ($p < .05$) or initiating conversations ($p < .1$).

With respect to their criteria when choosing who to follow, the "total sceptics" stand out as being those who pay significantly less attention to social criteria (2.3) –recommendations of other users or friends– ($M_{total}=3.1$ $p < .05$).

Their low level of participation is likely due to the fact that they do not value or perceive the opportunity for expression offered by social networks. They show the lowest level (3.3, which is significantly lower than the average) in motivations of expression offered by networks –expressing oneself freely, creating opinion and taking part in debates– ($M_{total}=3.9$ $p < .05$).

We have called the second cluster "dual moderates", and they are the most numerous (58.8% of the sample). They present a more intermediate profile that is somewhat more positive. "Dual moderates" are defined by their intermediate scores in both variables relating to social networks and towards the role of the university. Hence, they grant more credibility to the information found online (52%) than "total sceptics"; they assign greater value to both the volume and diversity and, in particular, to the immediacy of information (5.9). However, they are similar in their low confidence in social networks as a way to influence their surroundings (2.9). They are optimistic about the role of the university and certain that their education will prepare them and give them a way to think critically about their surroundings. They believe in the university's role in training them to be active and responsible, and non-manipulable, e-citizens who are committed to society. Nevertheless, their perception of the role of universities in the development of new digital competences is quite low, only slightly higher than the "total sceptics".

Unlike the former group, "dual moderates" are younger, and their grade average is slightly lower. Compared to the other groups, they have a higher percentage of female members (65.4% vs. 34.6% men).

They have a moderate level of activity in social networks. Their average number of followers followed and

Degree	Cases	%
Business Administration	70	29.7
Commerce	69	29.2
Advertising	51	21.6
Journalism	46	19.5
Total	236	100
Average age (years)	21.1 (SD=2.9)	
Average grade	7.0 (SD=0.8)	

Members of this group are older, with an average age of 24, and an average grade level of 7.2, which is slightly higher than the other groups ($p < .05$). This group also has more men (54.5%) than women (45.5%) (Table 4).

Analysis of the behavior of these "total sceptics" shows that although their basic activity as reflected in variables such as number of followers, number of tweets or number of likes does not differ from other groups, their behavior is passive and limited to a

Clusters	Gender (%)	
	Men	Women
Total sceptics	54.5	45.5
Dual moderates	34.6	65.4
Pro-digitals	42.4	57.6
Total sample	39.8	60.2

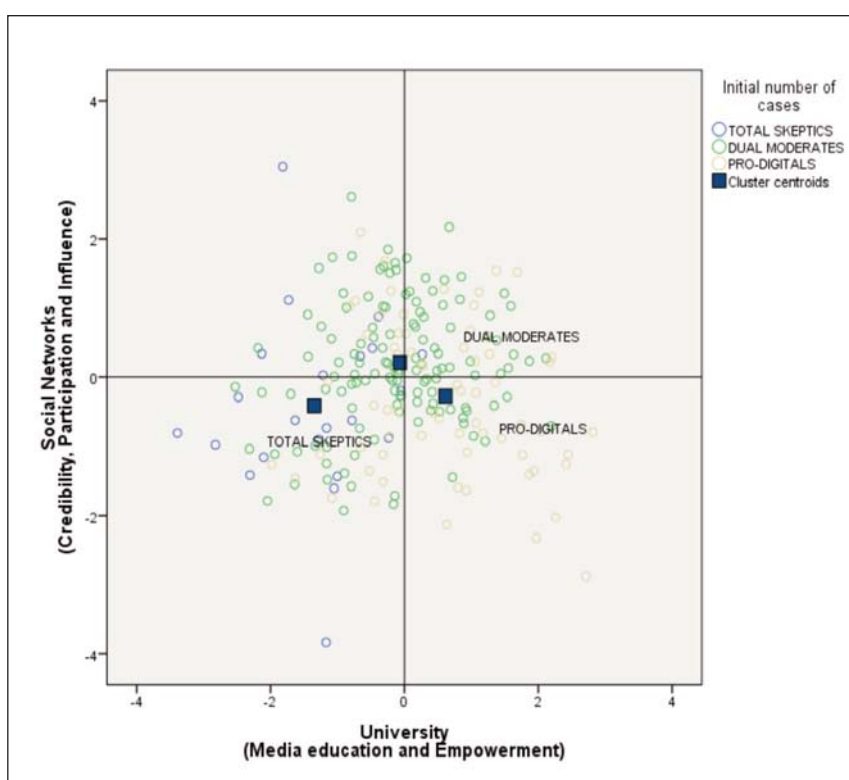
tweets are slight, yet not significantly lower. Notable, however, is their low level of participation in likes, where they are the least active group ($p < .05$). Their main activity is to read friends' opinions, where they are significantly more exhaustive ($p < .05$). This fact marks them as spectators of network activity, mere transmitters who do not lead the content or set the agenda.

They have different tastes with respect to the themes and content of interest. They are more likely to follow artists, brands and friends ($p < .05$), and it is also significant that their criteria for the selection of sources are mainly social, as they allow themselves to be led by friends, acquaintances and other participants they already follow, which situates them in a stage of individual socialization.

The last group, consisting of 31.02% of the sample, has been labeled the "pro-digitals", as they score the highest in all matters related to social networks and the opportunities these provide for participating in and influencing their surroundings. In spite of this, "pro-digital" students again show clear wariness about the educational role of the university, with scores that place them in close proximity to "total skeptics".

For this group, the information online is reasonably credible (74%); here they find plentiful and diverse information that offers different

views of events (4.95) and very positively rate the fact that it is always current and immediate, thus allowing them to know what is happening at all times from anywhere. The "pro-digitals" are more keenly aware of the opportunity networks provide, and they see them as a platform for freely expressing themselves and addressing all manner of subjects of their interest, and for helping to set the current news agenda. Nevertheless, even though their perception of their ability to influence and take the lead in changes is higher than in other groups, it remains moderately low (3.5).



Graph 1. Cluster centroids.

The average age and grade profile of this group is very similar to that of "digital moderates", but the proportion of women (57.6%) to men (42.4%) is somewhat less pronounced.

The "pro-digitals" show the highest level of activity and participation in networks. They show significant differences versus other groups in the number of followers ($p < .1$), the number of tweets ($p < .1$) or likes ($p < .05$). They are the most active in raising issues ($p < .1$), which shows that they are the most aware of their capacity of influence. Their motivations for using social networks relate to expressing themselves ($p < .05$) and mobilizing ($p < .1$).

By means of a graphic representation of cluster centroids (Graph 1) –obtained through a discriminant analysis of the groups– we gained an overall view of the main differences between the types identified. "Total sceptic" students, with negative scores in both factors (social networks and University), "dual moderates", with a more positive view of the university but who are less active in social networks, and "pro-digitals" who are confident in their ability to influence in social networks, but not because of the university's contribution to their training.

4. Discussion and conclusions

The aim of this paper was to provide an analysis of the use of informative social networks as a vehicle for the social empowerment of Spanish students, and their perception of the university as an educator in the use of such media to contribute to the formation of active and critical citizens. Based on a review of the literature relating to these issues, field work was carried out on a sample of 236 university students social studies degree programs. Using a typology analysis (K means) different positions adopted by students in these issues were identified, as was the prevalence of each type.

Before setting forth the conclusions, it should be borne in mind that all the data used for analysis come from students' behaviour and their perception of both networks and the University. This is not an analysis of the work of the university as such, or of the performance of social networks, but of the perceptions held by students and of their actual behaviour.

The following conclusions have been drawn from the analysis: In spite of their attributed status as digital users, university students are little active in informative social networks, as shown by recent research that reveals certain gaps in the use of new technologies by young adults (Livingstone, Haddon & Görzig, 2012). Only a small group (the pro-digitals) identify and capitalize on these opportunities. A majority looks upon current affairs merely as passive observers. Therefore, as previous researchers have noted, it is clear that even though social networks constitute a major social phenomenon that has transformed the lives of millions of people, it has become equally clear that their impact on the education and the empowerment of university falls short of its potential (Granados-Romero, López-Fernandez, Avello, Luna-Álvarez, & Luna-Álvarez, 2014). In line with this behaviour, the belief prevails that, even though they may participate, their capacity to influence their surroundings, set the agenda and mobilize society is quite limited. Except for the "pro-digitals", both the "total sceptics" and the "dual moderates" had quite similar numbers of followers and followed, which shows their limited capacity of influence.

In a simplification of the data, we might say that only three in ten university students place value on the possibility of empowerment provided to them by social networks. However, those who do believe in such a possibility do not think their time at the university has contributed to their competences in the use of networks or provided them with skills or critical thinking to deal with the abundance of content, which they consider to be both credible and distorted at the same time.

Consideration should also be given to the nature of the "total sceptics". They are a smaller, older and incredulous group that is about to join the labour market –if they do not already combine professional and academic work– and where a deeper analysis is called for as to the source of this negative perception.

We cannot overlook the fact that nearly 60% of the sample comprises university students who are confident in the ability of the university to make them critical citizens, more than in skilful digital citizens, but who focus their network presence more on socialization than on participation in the news agenda.

The foregoing, conceived within the exploratory framework of the study carried out, leads to a discussion of the following challenges in the university world. First, it would be useful to probe deeper into the scope and source of the low appraisal held by university students of the university as an institution that can train or educate in the use of the new media. This would require an analysis of the work of university teaching staff. Second, it would be useful to determine if a change occurs in students' assessment of the university when they join the labour market, as a result of possible mismatches between the education received and the education in demand. Thirdly, the university itself should assign a higher value to its role in preparing students by developing appropriate strategies to ensure that students develop digital competence during their years of education (Gisbert & Esteve, 2011). It makes little sense for the group that appears to be most skilful in the use of social networks, the most participative and the most likely to enjoy the benefit associated with empowerment, to believe that the university educating them has no bearing on such a capacity.

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