



Educational Use of Social Media in Primary and Childhood Education Degrees at a Virtual University

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The use of social networks is part of people's daily lives, and university students, in their academic life, make particularly intense use of them on a daily basis for different purposes. This research analyses the nature, intensity, and type of educational use of these social media by childhood and primary pre-teachers who are pursuing their studies online in Spain. To this end, we designed and validated an ad hoc questionnaire, obtaining 268 valid responses to research the specific characteristics of students studying for degrees in early childhood education and primary education and a double degree in early childhood and primary education at a university that is exclusively online. The results show that participants habitually use a variety of social media, but they only use some of them for educational purposes. General social networks offer future teachers versatility, the possibility to develop and leverage social capital, and opportunities to connect formal, non-formal and informal settings. The most used networks were WhatsApp, YouTube and above all Facebook, a reasonably large percentage use Instagram or Pinterest, and, to a lesser extent, Skype, and a lightly under half have Twitter. With regards to how they are used for educational purposes, a majority of respondents reported using them to find classroom activities, new ideas and material that might be of use in their academic work. It was also found that students consumed more information than what they produced, such that social capital is not used in an optimal way. It is concluded that in a university that operates exclusively online, the use of social networks fulfils the function of covering affective and social needs in an optimal way.

Keywords: Social media, virtual education, teaching innovation, pre-service teachers, primary education, childhood education, social capital

INTRODUCTION

This work analyses the nature intensity and type of educational use of social media by future childhood and primary teachers who are studying online at a completely virtual university. To this end, the following has been studied how much and for what purposes

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they put the most widely-used general social media to educational use. This type of network has been chosen rather than ones specifically intended for professional or academic purposes because their non-specific character is an advantage. This is because, far from being an obstacle for these purposes, the flexibility that goes hand in hand with their general nature (Brouwer et al., 2020; Carpenter et al., 2016; Kamalodeen & Jameson-Charles, 2016; Saini & Abraham 2019; Tyrer, 2019), as well as the fact that students' habitual use of these media can lead to them using them for academic purposes, makes them very interesting and versatile. Some studies (Lantz-Andersson et al., 2018; Rensfeldt et al., 2018) conclude that researchers who use academic social media also disseminate their work and boost its profile in parallel on general networks.

As a hypothesis, we assume that this tendency will be even more pronounced in people who are still in their training period since, in general, they do not yet have much experience in academic social media. and it makes sense to assume they will tend to use for academic purposes the ones they normally use in their everyday lives. Therefore, the aim of this study is to discover the purposes and specific applications for which students at an online university, in this case the Universidad Internacional de la Rioja.

There is no doubt that trainee teachers' use of social media is one of the elements that reflects their degree of digital competence (Barak, 2017). An optimal level of achievement in this competence is accompanied by greater autonomy and creativity by students, who can consequently harness the benefits of collaborative learning (Sánchez et al., 2017). Recent studies, (Hashim & Carpenter; 2019; Saini & Abraham, 2019; Trust, 2017) analyse predictive factors for digital competence in future teachers and find that half of participants sampled only reach a basic level, with emotional and social-communicative abilities being most developed. However, cognitive ones are developed to a much lower degree, revealing a situation that requires action. Peña et al. (2018) confirmed in their study that the university students they consulted "regard the inclusion of social media in the teaching-learning process as positive for acquiring general competences" (p. 239), giving importance to interpersonal competences, for example. Khoza (2021) stated that everyday knowledge is today generated on social networks, with Facebook, WhatsApp, YouTube and Instagram being among the most common in the educational sphere; in this environment, teachers and students connect with people outside the educational sphere and interactivity is promoted, thus generating social identity. Social networks in educational contexts could remove some of the limitations of formal learning since they provide greater visibility and enable the creation of open communities (Hatzipanagos & Warburton, 2009). The use of general networks as opposed to academic networks, created by the institutions themselves, would increase users' advantages in terms of ease of access, versatility and possibilities of transferring knowledge to society (Hatzipanagos & John, 2017).

Nonetheless, one cannot ignore the opinions of authors such as Durak (2019) or Sinnema et al. (2020) who, asking why, despite the clear benefits of these uses, they were not being implemented with the desirable intensity or usefulness, a question we will return to in the discussion section of this work. In addition to this, as will be shown in the results we obtained, not all networks are used in the same way, as this depends on

the students' objectives and on their own habits and practices in the virtual realm. There is no doubt that day-to-day use of a given social network encourages its use for educational purposes to the user's own personal benefit, and it is also true that students adopt distinct habits and practices when using different social media depending on the requirements of their studies and the social media their classmates use, "migrating" from some networks to others if these needs so make it advisable (Saini & Abraham, 2019).

Regardless of whether they study in a face-to-face, blended learning or online setting (as in the case of the sample analyzed) and the diversity of modalities that exist nowadays, social media are very much welcomed by students for carrying out tasks such as resolving doubts about class content or work, providing pointers when searching for information or finding useful academic or professional innovations (Carpenter & Harvey, 2020). Similarly, they allow greater flexibility in exchange of learning and encourage participation and collaboration (Al-Samarrie & Saaed, 2018). The institution where we collected the data was collected from the study sample, the Universidad Internacional de la Rioja, uses an entirely online teaching model in which students make free and independent use of the virtual campus. In this type of setting, it is necessary to encourage connections between students based on the use of networks as a type of common space (Wamuyu, 2018), countering possible isolation (Carpenter & Krutka, 2015). Consequently, it is considered that in universities that operate using a model other than face-to-face learning, there is a more intense need to establish personal and professional relationship through social media that can try to "replace" personal contact (Calderón-Garrido et al., 2019; Gil-Fernández et al., 2019; Gil-Fernández & Calderón-Garrido, 2021; León et al., 2019).

There is a lot of scientific literature that considers the duality "education-friendship" at different levels and from different perspectives, but in this particular case, one should take into account the idea that the social dimension of friendship is very important in teacher education as it is a catalyst for creativity, change and the humanising capacity: internet, as well as social media, is complex scenario with an important role in education (Romero & Martínez, 2017; Willet, 2019). Acun (2020) analysed the relationship between confidence, self-esteem, satisfaction and social media use in university students, and concluded that self-esteem is a significant and positive variable in relation to university students' frequency of social media use. Other authors, such as García et al. (2018), note the rewards university students derive from using social media in the teaching-learning setting to encourage their implementation for educational use. Abdelraheem & Ahmed (2018) also found that exclusively educational use of social networks was higher among students in their sample than social use or mixed social and educational use, and that they thus showed very good performance levels.

Some authors like Becerra & Martín (2015) or Torphy et al. (2020) have also put forth a very interesting idea: although most universities offer virtual platforms as complementary academic support, students generally use these resources for tasks such as downloading notes or participating in activities, but do not generally take advantage of the social facilities provided, instead preferring to establish their own particular groups and profiles online. This is the case in this study, as the virtual campus,

supported by the LMS30 platform, provides forums for modules, information about professional events and other forms of communication, students prefer to channel their contact mainly through WhatsApp and other networks.

METHOD

To achieve our objectives, we opted for a quantitative methodology. We designed and validated an ad hoc questionnaire (available at <https://reunir.unir.net/123456789/6695>) to investigate the specific features of students taking degrees in childhood education and primary education and the double major degree in childhood and primary education. When designing the questionnaire, we used a panel of four experts in educational technology and used the Delphi method (Somerville, 2008). We analysed their feedback using Fleiss' kappa (.89) and Kendall's W (.87), which gave values with relevance and pertinence between the opinions. In addition to the structure of the questionnaire that would later be used, this process resulted in the social networks that would be explored (Facebook, Instagram, Pinterest, Skype, SoundCloud, Tumblr, Twitter, WhatsApp, WeChat, YouTube).

We used Bartlett's sphericity test to check dependence between the variables (2586.41; $p < 0.001$) and the Kaiser-Meyer-Olkin test to check the adequacy of the sample (KMO = 0.83). The questionnaire displayed excellent consistency and internal reliability (Cronbach's alpha = .88). The questionnaire comprised 6 demographic questions and 21 questions relating to use of social networking sites. Out of these, 10 referred to the regular use of certain GSNs. These were dichotomous. A further 10 questions asked about the academic use of these same social networks. These questions were four-level Likert-type. The last one was an open-ended question.

We administered it online using the Formsite platform, allowing a period of one month for responses. The students who participated gave free, prior and informed consent which was set out in the questionnaire itself. They were informed that they could withdraw from the study at any moment. Was used the IBM Statistic Package for Social Science (SPSS) program, version 21.0 to calculate and statistically analyse the results. In all cases, a minimum confidence interval of 95% was established. We used the Mann-Whitney and Kruskal-Wallis statistical tests, having first applied the Kolmogorov-Smirnov or Shapiro-Wilk normality of sample tests as required, as well as Levene's test for equality of variance, and Bartlett's test of sphericity for cluster analysis. We used the ATLAS.ti program, version 1.5.2, for qualitative analysis of the answers.

The study population was chosen at random from different modules in different year groups and comprised a total of 1000 students. After cleansing the data, the sample analysed contained a total of 268 students. It is a non-probabilistic convenience sample. Table 1 describes the sample by year, gender, age and programme.

Table 1
Description of sample by year, gender, age and programme

Year	Number of participants	Men	Women	Age	Childhood	Primary	Double major
1st	32	2 6.3%	30 93.8%	M = 33 SD = 7.16	11 34.4%	17 53.1%	4 12.5%
2nd	35	1 2.9%	34 97.1%	M = 32.74 SD = 7.93	23 65.7%	12 34.3%	-
3rd	72	7 9.7%	65 90.3%	M = 32.04 SD = 6.67	38 52.8%	33 45.8%	1 1.4%
4th	120	29 24.2%	91 75.8%	M = 33.41 SD = 7.82	41 34.2%	78 65%	1 .8%
5th	9	2 22.2%	7 77.8%	M = 36.78 SD = 7.08	-	-	9 100%
Total	268	41 15.7%	227 84.7%	M = 33.02 SD = 7.49	113 42.2%	140 52.2%	15 5.6%

FINDINGS

The results show that the students’ preferred social media are WhatsApp, YouTube and Facebook. In contrast, only a minority have WeChat, Tumblr and Soundcloud and they make negligible use of them.

For most social media, only occasional educational use was reported, with YouTube and Pinterest being used slightly more frequently. Table 2 shows the results obtained.

Table 2
Results obtained

	Do students have this network?		Do they use it in education?			
	No	Yes	Never	Sometimes	Often	Always
Facebook	52 19.4%	216 80.6%	43 21.3%	80 37%	71 32.9%	19 8.8%
Instagram	85 31.7%	183 68.3%	77 42.1%	50 27.3%	37 20.2%	19 10.4%
Pinterest	93 34.7%	175 65.3%	12 6.9%	55 31.4%	71 40.6%	37 21.1%
Skype	126 47%	142 53%	68 47.9%	56 39.4%	12 8.5%	6 4.2%
SoundCloud	234 87.3%	34 12.7%	8 23.5%	16 47.1%	9 26.5%	1 2.9%
Tumblr	255 95.1%	13 4.9%	8 61.5%	3 23.1%	1 7.7%	1 7.7%
Twitter	148 55.2%	120 44.8%	37 30.8%	49 40.8%	25 20.8%	9 7.5%
WhatsApp	16 6%	252 94%	47 18.7%	95 37.7%	67 26.6%	43 17.1%
WeChat	254 14%	14 5.2%	10 71.4%	3 21.4%	1 7.1%	-
YouTube	46 17.2%	222 82.8%	9 4.1%	64 28.8%	117 52.7%	32 14.4%

In general, we can see that all of the students have one or more social media, although on the whole they report sometimes using for them for educational purposes (34.4% of the total). It is worth noting that only 12.2% of all of responses reflected always using these social networks for educational purposes.

With regard to use, no statistical differences were observed according to gender. However, with regard to use for academic purposes, statistically significant differences by gender were indeed observed, with women making more use of Facebook ($Z = -2.125$; $p = .034$) and Pinterest ($Z = -2.357$; $p = .018$).

Differences by degree programme were observed in use for educational purposes of Facebook ($X^2_{(2)} = 19.145$; $p < .001$), with students on the primary teaching tending to make least use of this network, and Instagram ($X^2_{(2)} = 8.429$; $p = .015$), with students from childhood education tending to use it for educational purposes the least.

No statistically significant difference by year was observed. The cluster analysis (Bartlett's test of sphericity $p < 0.001$) of the responses obtained showed three principal different groups depending on their educational use of the different social media. One group relates to use of Pinterest and YouTube, another relates to Facebook and WhatsApp, and the largest group, relates to Twitter, WeChat, Tumblr, SoundCloud, Skype and Instagram.

In general, and taking into account all of the networks, we found that women are more likely to use social media for educational purposes ($Z = -3.241$; $p = .001$) and primary teaching students are least accustomed to do so ($X^2_{(2)} = 16.721$; $p < .001$).

With regards to the open question about what respondents use social networks for in the educational field, a majority reported using them to find classroom activities, new ideas and material that might be of use for their academic work. Also, albeit to a lesser extent, they emphasised their benefits for group work and the immediacy they offer. With this sense of sharing, subject #123, for example, said, "In my view, they are very useful because a network of resources is created and shared online among professionals in the sector who help to share ideas, opinions and online resources".

To a lesser extent, and as subject #92 observed, "social media, especially YouTube, help me learn about things that were unclear in class", highlighting their benefits for self-study and also the DiYEdu (Do it Yourself in Education) trend (Sánchez et al., 2017).

Finally, regarding the Facebook groups provided by the institution itself, subject #207 said, "I only use them to look for module content overviews in the specific Facebook groups for each module", and #32 said, "I use the student groups' Facebook where they resolve doubts and share experiences".

DISCUSSION

As noted above, the aim of this work is to discover the type and intensity of students' use of social media for educational purposes. Accordingly, the first aspect to note is that the most widely used networks are not always the ones they use most for these particular

purposes. As for general - non-educational use-, a large majority of students (Table 2) use -in the ascending order- WhatsApp, YouTube and above all Facebook; a reasonably large percentage use Instagram or Pinterest, and, to a lesser extent, Skype, and a lightly under half have Twitter, which is a fairly widely-used social network. On the other hand, fewer students use SoundCloud, WeChat and Tumblr, representing only a small percentage. A similar trend is shown in the paper by Abdelraheem and Ahmed (2018), where Facebook, Twitter and WhatsApp were the most used networks, especially for socialising and sharing information, ideas, pictures, news and event information.

With regards to educational use, in this general context of “consumers” of social media, one network enjoys a special position: YouTube. As well as being the second most used, over half of users also frequently use it for academic purposes. In the open question, we can clearly see that the trend shown in academic literature is followed: YouTube is primarily used as a source of audiovisual materials (Alkhatat et al. 2020; Marchetti & Valente, 2018; Szeto et al. 2016). Maziriri et al. (2020) drew similar conclusions to those of the present study: students' perceptions of the use of YouTube as a learning platform by viewing video tutorials is very positive. The use of YouTube in a learning environment was perceived as optimal and the intention for future use is very strong.

The respondents use tutorials, search for projects and ideas to make their own activities more original and use it to consolidate content but they rarely use its more “social” facet in the professional sphere, as few students report following and interacting with specifically educational channels and none of them set up networks, for example, creating their own channels, despite the potential value of this for connecting formal and informal learning in the field of education, as people have tended to do in recent years (Torphy et al. 2020) and so being able to share their own achievements. In summary, they act more like “spectators–consumers” as there is no interaction and they do not use one of the key functions of this network: being a medium for expressing users' creativity (Keles, 2018). We can conclude that they use it for very independently and individually, with some students reporting that they “use it the same way as Google”.

In the presentation of the results, YouTube and Pinterest are grouped together in the cluster analysis, although Pinterest is not used as much as YouTube, being in fifth place. Users of both social media also share a common type of behaviour: they very frequently use these networks for educational purposes and with similar objectives. In the case of Pinterest, students on the Childhood Education degree use it particularly intensively. Some works show how much this network is of interest to trainee teachers (Amer & Amer, 2018), emphasising how versatile it is for searching for ideas, resources, activities, creations and educational and didactic material to enhance their work and teaching practice.

There is little difference between the number of respondents who use Pinterest and Instagram, with Instagram being the fourth most used network, again with the same aims and objectives as the previous ones. The data from scientific literature on university students' social network preferences usually show a much greater difference in favour of Instagram, for example the study by Alkhatat et al. (2020), but the age of the subjects who participated in that study was much lower and the sample included students from

various disciplines. Age is an important factor to consider here, as the mean age of the university students who participated in the present study is 33 years, while at public, face-to-face universities, the mean age for the same courses in the same year (2018) was 24.4 (Ministerio de Ciencia, Innovación y Universidades, 2019). Instagram is one of the most widely-used social media among young people (Romero-Rodríguez et al., 2020) and this use is increasing, but the mean age of the students in our sample does not correspond with the network's habitual users. This could also explain why Instagram and Pinterest are not grouped together in the cluster analysis, as the younger students from the sample choose Instagram, and also, as there are certain similarities between the two networks, they choose one or the other instead of following both.

Young people see Instagram as a network that is easy to use, free and image-based, as Romero et al. (2019) note in their work on the use of this network among future childhood teachers. These authors concluded that it was primarily used for leisure and self-expression, and they warned of the risks of fake news on this network, as according to them, its dissemination is even more intense here than through other media. Table 2 shows that while a considerable number of students use it, the number that report using it for educational purposes is small (almost half of users never do this).

The most important group by number of users is the one comprising WhatsApp and Facebook, although the situation here is different: WhatsApp is the most used network and Facebook the third most used, but while there is a high level of educational use of them, it is lower than in the previous group and within this academic use it is used for different purposes. It could be claimed that, unlike with the networks mentioned previously, students develop relationships between classmates more intensively in a university that does not provide face-to-face classes by taking advantage of the more "social" side of social media. The data obtained in this paper coincide with those presented by Soria et al. (2020), who state that the intensive introduction of mobile phones has led to an increasing use of WhatsApp by university students, who see it as a platform that provides communication, is cooperative and facilitates academic tasks in an informal and motivating environment. Abdelraheem & Ahmed (2018) also detected this same trend and state that the use of mobile-mediated networks stands out for its usefulness and accessibility and provides innovative methods for creating social learning environments.

With regards to use of Facebook, we should start by noting that the Universidad Internacional de la Rioja has several institutional pages on this network. For example, there is a general one with the programmes that can be studied, cultural events, tutorials, masterclasses, open classes and so on as well as pages relating to research, alumni, etc. The university also has an account administered by a community manager from the institution and volunteer students, which is expressly provided as a space for leisure and socialising, albeit linked to the students' studies, where there is also a long list of all of the groups linked to the university (relating to modules, study groups, etc), with a very large number of members. In fact, as Rensfeldt et al. (2018) or Fuentes-Cancell et al. (2021) concludes, Facebook is the Social Network most used by university students. Delen (2017) conducted a proposal for future teachers mediated by Facebook and

demonstrated the suitability of this network for improving students' argumentation skills. Susanto et al. (2020) also proved the suitability of Facebook and their results revealed that students who were taught using a Facebook-aided approach performed better in their literature review writing skills. The fact Facebook is a frequently-used setting encouraged examples of innovative practices in the university sphere some years ago when this network was expanding rapidly, such as the case of Patahuddin et al. (2020), where it was chosen as the virtual platform to complement on site teaching as Henry et al. (2020) also did soon afterwards, seeking the equilibrium between synchronic and asynchronous communication that this network makes possible. But in this study case, the fact is that the university provides a large number of pages on this network and many students are users (although this does not mean that they use it intensively as they may simply have an open account) but they make less academic use of it, preferring “independent” groups and pages.

Authors such as Marcelino (2015) some years ago noted the first migration from Twenti to Facebook and a second one from Facebook to Instagram. This work refers to adolescents, but also to young people aged between 22 and 28, who are closer to the age range of the participants in the present study, which could explain this trend. Consequently, the results obtained in our study contrast with other works where the preferred network of the university students consulted was Facebook (García et al., 2018).

The generalised use of WhatsApp by students in this sample is perhaps the most “balanced” as it is the network the most students use. In addition, most of these students continue to use it in the educational setting (Motteram et al., 2020). The students form a large number of academic groups which helps them to maintain a more immediate social and professional relationship, something this type of instant messaging facilitates, providing an ideal means of communication in a university without face-to-face classes. Fondevila et al. (2019) reflect on the use of this network in Spanish universities, finding that its main advantages are that “It has broad social dissemination, and its use can be highly beneficial for reasons of efficacy, immediacy, cost and ease of use” (p. 320), indeed some of the students consulted report this in the open question, but it also creates situations of anxiety and stress, as some of the opinions reflect. Other studies confirm that in the university setting, difficulties might arise when holding long and complex conversations, creating confusion in the messages and loss of information (Vilches & Reche, 2019). The fact the students do not have similar contact and that their age is higher than in the sample in the present study might mean that we can modify these questions and the use is optimal and more rational. Two terms appear repeatedly when students comment on their use of WhatsApp in the open question: communication with classmates and resolving doubts. This agrees with other works that study this feedback process and how it facilitates academic advice and resolving doubts between peers (Motteram et al, 2020; Tyrer, 2019).

A last group comprises Twitter, WeChat, Tumblr, SoundCloud, Skype and Instagram. Apart from Instagram, which is discussed above, they almost all display little use. Twitter is seventh among the ten networks covered in the questionnaire, with 44.8% of

students using it. Among these, only 20.8% use it frequently, and the majority only occasionally use it for educational purposes. This contrasts with other studies on the same lines, such as the one by Peña et al. (2018), where it is the most used network by some distance (although it is worth noting that these authors did not include WhatsApp in their study). The students who use it for academic purposes do so to share up-to-date information and above all to follow profiles of people they regard as important in the world of education. Studies such as the one by Tur et al. (2017) reveal that the students who participated in their research, as also found in the present study, followed highly-regarded professionals more than celebrities or other types of profile, which for them shows its suitability for educational use and again confirms the need to insist on creating new experiences with this type of network, like that created by Carpenter et al. (2016) which although it is applied to other studies (protocol, specifically), has a mechanism for comparing perspectives, locating profiles, distinguishing inappropriate sources and reflecting on publications that have interesting outcomes in education. On the other hand, research such as that of Santoveña (2019) with 519 future teachers, reveal that students who carried out activities mediated by Twitter improved their academic performance.

To finalize, we note that, as mentioned above, no statistically significant difference was observed by the students' year of studies. In other words, even though they are studying in a completely online modality, there is no increase in use of social media for academic purposes over time despite them being a good educational tool. In the case of the study by Peña et al., (2018), students' positive perception of the use of social networks also reduced from lower years to higher ones. However, studies such as that of Brouwer et al. (2020) affirm that the use of social media in the initial teacher training goes from establishing friendships to a communication network among peers seeking advice as the years of training pass.

Consequently, the results obtained are on the same lines as those collected by Carpenter & Harvey (2019), and suggest it is advisable to outline strategies for good practices as there is much room for improvement and further implementation in academic use of social media (Calderón-Garrido et al., 2019). In any case, the inclusion of social media in initial teacher training requires teachers to be more open-minded about the use of these social platforms as they cannot control all interactions that occur (Castellanos et al., 2017).

CONCLUSIONS, IMPLICATIONS, LIMITATIONS AND FUTURE RESEARCH OPPORTUNITIES

In conclusion, the different social media investigated in this study display a degree of variability in their use in the academic setting. They do not have effective or constant utilisation in for educational purposes, even though the setting for the study is an online university. They are used more for social purposes and, notably, to a greater extent than at universities with face-to-face teaching, perhaps because of the need to create the social bonds that already exist in the other modalities (face-to-face or blended learning). The limited educational use that has been found focusses on resolving doubts (WhatsApp), watching videos/tutorials but only as non-communicating spectators

(YouTube), or following education professionals (Twitter). In this case, the study revealed the need for students studying at a virtual university to make up for their social and affective needs, as these are not generally met through daily contact. By using social media more intensively, they avoid the perception of isolation that is often comes with online-only environments. In short, the uses in a virtual university present the same challenges with respect to in-person universities: establish stronger contact networks, take better advantage of the opportunities to create social capital and the benefits it brings, increase digital competence, increase teachers' digital competence and digital agency, and for teachers and students to implement the development of their own productions. In any case, in this sense, this university shows some achievements that are superior to those of in-person universities, especially in terms of obtaining emotional benefits, professional identity or a sense of belonging and personal satisfaction. It, therefore, entails a more emotional dimension.

The limitations of this paper stem from the limited possibilities for comparison with other universities that operate exclusively online, as they are not so common and, moreover, there is a gap in the scientific literature. There are many studies on universities that apply paradigms related to B-Learning and other types of mixed models and experiences, or which have been developed in completely online scenarios due to the COVID-19 health crisis and confinement, however the first case is a different context and the second is the immediate response to emergency measures, which in many cases were not based on reflection prior to their implementation. For further studies, comparisons could be made with other geographical areas, contrasting results with other types of university studies, with more specific social networks or those exclusively for educational or academic use, and with other models of social capital creation. From a methodological point of view, the process of distributing the questionnaire may have generated a bias in the sample, as students who make more intensive use of social networks may have been more likely to participate in the study, as they have higher digital competence or an optimal and sustained intention to use social media over time.

Another limitation of this study also entails a future research opportunity. In the sample analysed here, we have no information on the academic impact of the use of social media for educational purposes. It would be of great interest to explore this aspect in future research.

The implications that can be drawn from the study are to further explore the creation of social capital, which largely depends on the extent to which institutions are involved, curricula are modified and inclusive decisions are made, and thus to which quality opportunities are provided. It is also desirable to seek the intervention of social media in personal assessment and promotion processes so as to promote means to convey and bring together formal, non-formal and informal learning in a flexible and sustainable way through social media, and in order for research to continue to generate best practices in these terms.

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