






Creators and spectators facing online information disorder. Effects of digital content production on information skills

Creadores y espectadores frente al desorden informativo online.
Efectos de la producción de contenidos digitales en competencias informativas

-  Dr. Gabriella Taddeo. Assistant Professor, Department of Humanities, University of Turin (Italy) (gabriella.taddeo@unito.it) (<https://orcid.org/0000-0002-9544-336X>)
-  Dr. Belinda de-Frutos-Torres. Associate Professor, Department of Audiovisual Communication and Advertising, University of Valladolid, Segovia (Spain) (mariabelinda.frutos@uva.es) (<https://orcid.org/0000-0002-9391-8835>)
-  Dr. Maria-Cruz Alvarado. Associate Professor, Department of Audiovisual Communication and Advertising, University of Valladolid, Segovia (Spain) (mariacruz.alvarado@uva.es) (<https://orcid.org/0000-0002-1659-7249>)

ABSTRACT

Misinformation on social media is a major problem facing our society. The experience deriving from use does not guarantee success in identifying false information. This study seeks to determine whether an active role in social media impacts on informational skills. For this purpose, we designed a survey that was administered to 756 young people between 16 and 26 years of age from different educational levels. The results show a profile of creative users who participate in generating their own content and sharing their recommendations openly, as opposed to another profile, the “spectators”, focused on entertainment and interaction. The creator profile is the variable that most contributes to reporting fake news on social media. When contrasting information, educational level is the most relevant aspect, although academic results and creator users also represent a significant contribution. Greater trust in the sources found on social media identifies the active profile, while distrust is associated with the spectators. We recommend that media education puts in place actions intended to recuperate trust in social media, so that they can be utilized critically, encouraging active, not reactive use.

RESUMEN

La desinformación en las redes sociales es un problema al que se enfrenta nuestra sociedad. La experiencia de uso no garantiza el éxito para identificar la información falsa. El estudio pretende determinar si un rol activo en los medios sociales influye en las competencias informacionales. Para ello se diseñó una encuesta que se aplicó a 756 jóvenes entre 16 y 26 años de diversos niveles educativos. Los resultados muestran un perfil de usuarios «creadores» que participan en la generación de contenidos propios y en compartir sus recomendaciones abiertamente, frente a otro, los «espectadores», centrados en el entretenimiento y la interacción. El perfil creador es la variable que más contribuye a denunciar noticias falsas en las redes sociales. A la hora de contrastar la información, el nivel educativo es el aspecto más relevante, aunque los resultados académicos y los usuarios creadores también suponen una aportación significativa. Una mayor confianza en las fuentes presentes en las redes sociales distingue al perfil activo, mientras que la desconfianza está asociada con los espectadores. Desde la educación mediática se recomienda emprender acciones destinadas a recuperar la confianza en los medios sociales para que puedan ser utilizados de modo crítico, favoreciendo un uso activo y no reactivo de los mismos.

KEYWORDS | PALABRAS CLAVE

Social media, disinformation, information disorder, media literacy, information skills, creators.
Redes sociales, desinformación, desorden informativo, competencia mediática, habilidades informativas, creadores.



1. Introduction: The issue of misinformation in the social media era

Scholars and institutions have shown growing concern about misinformation and fake news on social media. According to the report on the state of disinformation produced by the European Commission (2018), disinformation is not only an issue related to content creation, but it can also involve the circulation of content, from commenting, sharing, etc. Tandoc et al. (2018) in their revision of the term “fake news”, establish two dimensions to classify it: the facticity, referring to the degree to which fake news relies on facts (low in the case of fabricated news or high in the case of news parody) and the intention to deceive (high in the cases of manipulation or propaganda and low in the cases of news parody and news satire). Wardle and Derakhshan (2017) introduce a useful distinction between three types of information disorder from their falsehood to their harmful dimension: “Misinformation is when false information is shared, but no harm is meant; Disinformation is when false information is knowingly shared to cause harm and Malinformation is when genuine information is shared to cause harm, often by moving information designed to stay private into the public sphere” (Wardle & Derakhshan, 2017: 5). For these reasons scholars are converging on using the term “information disorder” as comprehensive of the multiple nuances of the problem.

Information disorder has been shown to spread more easily, quickly, and widely than other information, and its main means of dissemination is through social media (Papadopoulos et al., 2016; Törnberg, 2018; Vosoughi et al., 2018), emotional content being a successful trigger for its spreading (Luo et al., 2021). The issue has gained increasing attention in recent years, when different global events, such as political elections in many western countries, but also the Brexit process as well as the pandemic global emergency, have shown the profound and dangerous impact that such disinformation processes can cause on a social, economic, and public health level. According to the research “The global disinformation disorder” (Bradshaw & Howard, 2019), there is, in fact, evidence of organized social media manipulation campaigns in 48 countries in 2018 and 28 countries in 2017.

Recent research carried out at a European level tried to “measure” the level of trust and worry concerning disinformation processes; it states that more than 85% of respondents think that the existence of fake news is a problem in their country and 37% say they come across fake news every day or almost every day. With respect to the sources, less than half of respondents (47%) trust online newspapers and magazines, while lower proportions trust video hosting websites and podcasts (27%), or online social networks and messaging apps (26%) (Eurobarometer, 2018). Finally, regarding strategies for contrasting disinformation, according to Eurobarometer (2018), 71% of citizens are totally or somewhat confident that they can identify news or information that misrepresents reality or is false (fake news), while 26% are not confident. Respondents who use online social networks more regularly, and who come across fake news more frequently, are more confident in their ability to identify it. On the other hand, more trust and greater social media exposure are not automatically associated with a lower risk of misperception, since evidence shows that false news can be shared inadvertently and content can even be shared knowing that the information is not accurate, just because it is in tune with an ideological line (Ahmed, 2021; Ardèvol-Abreu et al., 2020; Babaei et al., 2021) or because it boosts engagement metrics on social media (Avram et al., 2020). Moreover, in studies carried out on young people, a tendency has been found to overestimate their critical ability when judging the information they face on social media (Petrucco & Agostini, 2021). A recent study by Soengas-Pérez et al. (2019) involving university students, points out that two thirds of respondents neither oppose news, nor expand information; rather they are satisfied with a single version of the facts and do not consider more points of view. Scholars highlight that in adult contexts as well, there is often a lack of motivation to validate information (Buckingham, 2019).

In many cases, actions performed to contrast disinformation seem not to be the most appropriate: for example, strategies such as identifying, tagging, and penalizing fake news on social networks are not effective: research has shown that the effects are still present once the fake news has been debunked (Lewandowsky et al., 2012; Pennycook & Rand, 2019). Repetition of information facilitates processing and increases its perception of truth (Dechêne et al., 2010; Hasher et al., 1977). In social media environments, the probability of sharing a piece of information grows with the number of times one is exposed to it (Mørnsted et al., 2017). These effects have been demonstrated even with invented

news, with its effects being persistent over time, even if the participants forgot they were exposed to the information (Chan et al., 2017; De-Keersmaecker & Roets, 2017; Pennycook & Rand, 2019).

Furthermore, the strategies that the major social media platforms, such as Facebook, Twitter, or Instagram, have put into action are not convincing: both the algorithms and crowdsourcing methods, as well as internal moderators and external fact checking agencies that verify and filter the news seem to address the issue only partially and with many opaque dynamics (Woolley & Howard, 2018; Andersen & Søre, 2020; Allcott et al., 2019). In order to cope with such emergent complexity in a systematic way, policy makers (European Commission, 2018) have deemed it appropriate to focus on five areas of intervention:

- Enhance transparency of the online digital ecosystem.
- Develop tools for empowering users and journalists and fostering a positive engagement with fast-evolving information technologies.
- Safeguard the diversity and sustainability of the European news media ecosystem.
- Calibrate the effectiveness of the responses through continuous research on the impact of disinformation in Europe.
- Promote and sharpen the use of media and information literacy approaches to counter disinformation and help users navigate our media environment.

2. The role of media literacy and digital competences in contrasting information disorder

Among the strategies to contrast “global disinformation disorder”, as seen in the previous paragraph, media and information literacy have a pivotal role. Several scholars address the urgent need for media literacy education, which can help audiences to develop the ability to better handle fake news (Mele et al., 2017; Mihailidis & Viotty, 2017). The recent UNICEF report (Howard et al., 2021) outlines the importance of addressing specific actions to children since they can be targets and objects of mis/disinformation, spreaders, or creators of it, but also opponents of mis/disinformation in actively seeking to counteract falsehoods.

According to the Digcomp 2.0 framework (Carretero et al., 2017), which defines general and specific indicators to frame contemporary digital skills, five main areas should be taken into consideration for the overall digital development of individuals:

- Information and data literacy.
- Communication and collaboration.
- Digital content creation.
- Safety.
- Problem solving.

Although ethics are not explicitly mentioned in these areas, the definition of skills “for a digital world” (OECD, 2016) does include the importance of acquiring skills for progress and social wellbeing. This would necessarily imply introducing an integrated ethical-digital model of competencies at all educational levels (Burguet-i-Arfelis & Buxarrais, 2012). Since then, several models have guided the incorporation of these skills in the general educational field (Ala-Mutka, 2011; Area-Moreira & Pessoa, 2012; García-Valcárcel, 2016) and in teacher training (Wilson et al., 2011; UNESCO, 2019; García-Valcárcel & Martín-del-Pozo, 2015).

Much research has been dedicated to trying to measure the level of such skills in different populations, as well as to analysing the relationship between such digital skills and individual development, overall social capital, and general wellbeing. According to recent meta-analyses (Mascheroni et al. 2020), digital skills encourage the take-up of more opportunities: those who use the internet more and have more skills engage in a broader range of online activities than those who use it an equivalent amount of time, but who have lower skills (Livingstone & Helsper, 2010; van-Deursen & van-Dijk, 2014).

Studies have found that children who use the internet more often and engage in more online activities –including a range of activities not limited to those related to schoolwork– tend to score higher on internet skills than their peers who only use the internet for non-leisure-related tasks (Scherer et al., 2017). Users’ digital skills are also associated with many online activities that enhance the user’s cultural, economic and/or social capital. Nevertheless, the strongest predictor of engagement in beneficial online activities

remains education (Hargittai & Hinnant, 2008). Another central point in the debate is the relationship between online participation and skills. In fact, while some scholars underline how participatory practices of production and sharing of online content have led to an improvement and updating of young people's skills, both digital and non-digital (Jenkins et al., 2006; Guerrero-Pico et al., 2019; Taddeo & Tirocchi, 2019), other scholars (Jenkins & Carpentier, 2013) highlight the limits of the concept of online participation, while others redefine the role and quantitative impact of active users, compared to the majority of passive consumers (van-Dijck, 2009; Pereira et al., 2018). Although adolescents have more digital skills than their parents and teachers, only 25% have received training in assessing information on the internet critically (Ballesteros & Picazo, 2018).

In summary, if some therefore see a positive relationship between greater use of digital media and greater online production and skills, others underline that the greater use of the internet in many cases is not accompanied by real active skills and leads to disadvantages for young people. The relationship between online participation and activism in the offline world is also a complex issue. According to some authors, the ease of collaboration and political activism on social networks does not translate into greater participation by citizens (Bernal-Triviño, 2015); despite young people's intense activity on social networks, they do not tend to be critical or vindictive on social networks, nor do they show interest in social and political problems (López-de-Ayala et al., 2020; Soengas-Pérez et al. 2019; Vizcaíno-Laorga et al., 2019). This clashes with the evidence that many of the social and protest movements of the second decade of the 21st century have been possible thanks to the support of the young (Jenkins et al., 2016). Scholars have also highlighted how information literacy is related to non-conventional forms of political activism, such as signature-seeking campaigns, boycotts, rallies, posting messages to persuade others, sharing others' posts, and joining online campaigns (Kim & Yang, 2016).

Finally, it's not completely clear which type of digital education is most effective in empowering people to contrast fake news. As highlighted by Jones-Jang et al. (2021), accurate identification of fake news was significantly associated with information literacy, but not with other competences such as media or news literacy. To conclude, data and research do not lead to unique results about the relationship between digital competences and "offline" competences, as it is still largely unclear if and how digital skills are interconnected and how they effect, for example, people having the tools and empowerment to efficiently cope with contemporary society. In particular, despite renewed interest in information literacy as a way to combat misinformation, existing academic studies are plagued by insufficient theories and empirical research on how this competence is performed, by whom and with what characteristics and results.

3. Objectives

In this paper, we want to investigate three research questions:

- RQ1. To what extent are the young considerable "creators" and "spectators" and what are the characteristics of such users?
- RQ2. What is the relationship of such user typology with trust in social media?
- RQ3. What is their role in relation to information disorder processes?

We will specifically focus on the relationship between participation, digital content production and information literacy, to understand if assiduous and active use of social networks, as creators and not only as consumers of information, leads to greater accountability toward the information circulating online, and translates into greater attention to fact checking of contents and active contrasting (e.g., responses, reports, etc.) of disinformation.

4. Method

An exploratory correlational analysis was carried out, using a survey to consider the three research questions mentioned above.

4.1. Sample and procedure

The extraction of the sample followed a random selection process in Madrid, Seville and Segovia, cities representing high, medium and low population density in Spain. Participants were randomly selected

at their study centers. The choice of centers followed a quota procedure according to educational level, including secondary schools and vocational training centers, and considering the type of center ownership, public or private/subsidized, until reaching the proportion of the population provided by the Spanish National Institute of Statistics. The data collection process was assisted by the services of a company specialized in field research, and recruitment was performed outside each education center. The questionnaire was applied through a computer-assisted survey. Quotas were managed by gender, studies, and type of center (public or private). Prior to conducting the survey, the participants were informed of the purpose of the study and were informed of the option of withdrawing their participation at any time. Data gathering took place from March to May 2021.

The sample size is 756 people, aged from 16 to 26 ($M=19.8$, $SD=2.8$), 41.2% are men, 55.3% women and gender is not identified for the rest. Regarding educational levels, 45.4% of the participants are enrolled in a university degree or equivalent (ISCED level 6), 19.6% in short-cycle tertiary education (ISCED level 5), 23.8% are in high school (ISCED level 4 Post secondary non-tertiary education), and 11.2% are in a middle-grade training cycle or have not yet completed secondary education (ISCED level 3 Upper secondary education). 73.7% of the centers are public. The highest educational level reached by parents is: 10.4% reached postgraduate studies (ISCED level 7), 38.3% have a university degree (ISCED level 6), 16.9% higher grade professional training (ISCED level 5), 24% secondary education (ISCED level 3) and 10.4% did not complete secondary education (ISCED level 2 or less).

4.2. Measurement and analysis

To measure the participants' level of digital activism, a frequency scale, based on existing literature (Litt, 2013) was created. The responses were collected on a scale ranging from never (1), several times a year, several times a month, several times a week, every day to several times a day (6). The option of not answering was allowed in all questions. The first dimension of the scale, defined by users that we will label as "creators", included items that embody an active contribution to social media: "Create and share contents among a group of close friends", "Upload recommendations and ratings about experiences, products or sites I visit" and "Create content and publish it openly"; The reliability of this subscale was high (McDonald's $\omega=.80$). The second dimension, that could be labeled as a "spectators" profile, discloses a passive and social contribution, and it includes the following items: "Browse and view content of profiles I follow", "Watch the content of profiles that appear with suggestions" and "Share content among friends and people I know". The reliability was acceptable (McDonald's $\omega=.73$). The validity of these two dimensions was confirmed by a factor analysis. Table 1 shows the factor-loading matrix after a varimax rotation, the weighting of the items on each dimension ranges from .81 to .66. Each factor's score was calculated by the regression method. Regarding information skills, participants were asked two main questions: "Have you actively responded to, reported, or removed fake news" and "Have you checked the news read on social networks (contrasting sources, checking if they were verified or similar)". For the answers, the period was limited to the last week and a 5-point frequency scale was used, ranging from never (0) to frequently: five or more times a week (5).

To measure trust in information sources, a 5-point Likert-type scale was used, ranging from "not at all confident (1) to very confident (5). The sources to be evaluated were related to health information and included: scientists, doctors, experts; global health organizations, health authorities; journalists, reporters, media professionals; governments and policy makers; successful people, celebrities, or influencers; Twitter; Instagram; blogs and specialized forums; media on the internet (newspapers, TV channels, radio, etc.); traditional media: radio, television, press, and magazines. Prior to conducting the survey, a pilot study was carried out with a sample of university students to validate the measurement tools. Data analysis was performed with the SPSS V. 27 statistical package. The data values had been checked and validated before the analysis. Descriptive statistics were used to summarize data. Firstly, a Principal Components factor analysis was carried out to reduce dimensions and identify user profiles. Then a partial correlations analysis was performed to find out the variables related to the two profiles, after allowing for the effect of socio-demographic variables. Finally, two multiple linear regression analyses were carried out to identify the predictor variables of information skills.

5. Results

5.1. Who is participating online?

Table 1 gives a descriptive overview of the actions performed on the social media. The most frequent activities, reported several times a week or more often, were “Share content among friends and people I know” (65.0%), “Browse and view content of profiles I follow” (53.7%), “Watch the content of profiles that appear in the suggestions” (43.4%). The least frequent activities were “Upload recommendations and evaluations about experiences, products, sites that I visit”, confirmed by 46.5% of respondents, only 13.6% saying that they did this weekly or more frequently, and “Create content and publish it openly” confirmed by 57.3% of respondents with only 20.3% on a weekly basis or more. From this data we can see that the creators are a minority, as the previous literature highlights.

Items	No answer	Never	Several times a year	Several times a month	Several times a week	Every day	Several times a day	N	Factor loadings ²	
	%	%	%	%	%	%	%		I	II
1.1 Browse and view content of profiles I follow	2.2	7.3	15.6	21.3	28.0	22.0	3.7	754		865
1.7 Watch the content of profiles that appear in suggestions	4.3	11.8	14.3	26.2	22.5	16.5	4.4	755		655
1.2 Share contents among friends and people I know	1.6	4.0	8.3	21.0	26.3	29.6	9.1	756		747
1.5 Create and share contents among a group of close friends	9.5	12.0	17.2	24.3	20.2	12.8	3.8	756	.801	
1.4 Upload recommendations and ratings about experiences, products, sites I visit	27.2	26.3	19.7	13.1	6.9	5.4	1.3	756	.795	
1.6 Create content and publish it openly	19.8	22.4	20.9	16.5	10.8	7.8	1.7	756	.807	
Explained variance (%)									36.2	32.4

Note. ¹Barlett spherity test is statistically significant Chi-square=2.183.39, d.f.=21 (<.001) and Kaiser-Meyer-Oblimin=.861 which indicates suitability of the factor analysis. ²Weightings below .4 are not displayed.

Table 2 shows the relationship between the two profiles and the demographics after allowing for the effect of educational level variables to respond to the first research question. There is a significant inverse correlation between educational levels and the two types of profiles ($r=-.086$, $p=.019$ for the creators and $r=-.265$, $p<.001$ for the spectators); the partial correlation was obtained to determine the relationship of this pattern of activism with the other demographic variables. Only academic performance has a significant and negative relationship with the creators ($r=-.091$, $p<.015$), in accordance with this, the students with better results participate less in creation activities. The spectators are associated with women ($r=.119$, $p=.001$) and negatively associated with age ($r=-.153$, $p<.001$), with the younger ones being more involved in passive and social activities.

Controlling educational level	Creators	Spectators
	Partial correlation (p-value)	Partial correlation (p-value)
Age	.012 (p=.738)	-.153 (p<.001)
Sex (1=male, 2=female)	-.041 (p=.278)	.119 (p=.001)
Academic performance	-.091 (p=.015)	.020 (p=.589)
Parents' educational level	-.036 (p=.339)	-.020 (p=.589)

5.2. Users' profiles and trust in information sources

In the second research question, the correlation between the two profiles (spectators and creators) and the confidence in the information sources was analyzed, after considering the educational level (Table 3). The sources that have shown a statistically significant and positive relationship with the spectators

are scientists ($r=.164$, $p<.001$) and health organizations ($r=.182$, $p<.001$). There is also a significant and positive correlation with Twitter ($r=.144$, $p<.001$), blogs ($r=.114$, $p<.001$) and traditional media ($r=.079$, $p=.030$). In all cases the relationship is weak. Meanwhile, people who score higher on the creative profile have much more confidence in all sources, except for scientists and global health organizations, which are not related to the active pattern. It is note worthy that the correlation size with social media sources, such as celebrities ($r=.316$, $p<.001$), Twitter ($r=.276$, $p<.001$) and Instagram ($r=.370$, $p<.001$) is greater than with the conventional media ($r=.146$, $p<.001$).

Table 3. Partial Pearson correlation matrix of social media activity patterns with trust on media sources (controlling educational level)

Monitoring the educational level	Creators	Spectators	Mean	SD
	Partial correlation (p-value)	Partial correlation (p-value)		
Trust in (...) as a source for health information				
7.1 Scientists, doctors, experts	-.070 (p=.056)	.164 (p<.001)	4.31	0.876
7.2 Global health organizations, health authorities	-.003 (p=.933)	.182 (p<.001)	4.13	0.93
7.3 Journalists, reporters, media professionals	.125 (p<.001)	.043 (p=.245)	3.21	1.029
7.4 Governments and policy makers	.147 (p<.001)	-.019 (p=.603)	2.62	1.106
7.5 Successful people, celebrities, influencers	.316 (p<.001)	.068 (p=.066)	2.23	1.117
8.3 Twitter	.276 (p<.001)	.144 (p<.001)	2.59	1.153
8.8 Instagram	.370 (p<.001)	.046 (p=.212)	2.35	1.174
8.6 Blogs and specialized forums	.146 (p<.001)	.114 (p=.002)	3.24	1.091
8.7 Media on the internet (newspapers, TV channels, radio ...)	.159 (p<.001)	.061 (p=.099)	3.22	1.057
8.10 Traditional media: radio, television, press, magazines	.146 (p<.001)	.079 (p=.032)	3.26	1.033

5.3. Predicting information skills

To answer the third research question, firstly the two main variables related to information skills were explored. Generally speaking, behaviors related to information skills do not seem to be very frequently performed by students: only 17% of the sample reported “checking the news (consulting other sources, checking if they were verified or similar)” quite frequently (at least 5 times during the last week), and only 5% answered having frequently (5 times or more during the last week) counteracted (responding to, reporting, or deleting) fake news.

As a second step, two multiple linear regression analyses were conducted to investigate which were the variables that predict such information skills. Table 4 shows the variables included in the analysis.

Table 4. Regression analysis for information skills

	Reporting fake news	News fact checking
	SD Beta Coefficient (p value)	SD Beta Coefficient (p value)
Sex	-.075 (.042)	-.008 (.835)
Educational level	.102 (.009)	.226 (<.001)
Academic performance	.028 (.452)	.078 (.040)
Parents' educational level	.079 (.030)	-.046 (.221)
Creators	.330 (<.001)	.092 (.014)
Spectators	.084 (.024)	.004 (.908)
R (Adjusted R ²)	.339 (.108)	.236 (.048)
F (d.f.), p-value	15,437 (6,711) p<.001	6,999 (6,712) p<.001

The first equation takes “to have actively contrasted fake news” as a dependent variable and the variables included in the analysis explain 10.7% of the variance ($R^2=.107$, $F_{6,711}=15,437$, $p<.001$). Gender is statistically significant in the prediction of reporting false information: men tend to report fake news more frequently ($\beta=-.075$, $p=.042$) than women; the educational level of the participants ($\beta=.102$, $p=.009$), as well as the educational level of their parents ($\beta=.079$, $p=.030$), are strong predicting factors in counteracting fake news. Above all, the regression analysis shows that belonging to the profile of the “creators” is the most important factor in predicting reactions to fake news ($\beta=.330$, $p<.001$). Moreover, spectators play a positive and significant role in reporting false news, although the coefficient obtained is lower than for the creators ($\beta=.084$, $p=.024$).

The second multiple linear regression predicts the actions of “fact checking the news” and explains 4.8% of the variance ($R^2=.048$, $F_{6,712}=6,999$, $p<.001$). In this case, the educational level of the students ($\beta=.226$, $p<.001$) has the greatest effect in reckoning news checking: as the educational level increases, the activity of checking information is greater; in the same way, participants' academic

performance has a positive and significant effect on the dependent variable ($\beta = .078$, $p < .040$). Finally, belonging to the active user profile of creators has a significant effect ($\beta = .092$, $p = .014$); the other variables included in the regression have no effect on checking the news.

6. Conclusions and discussion

As we have seen in the results, the profile of spectators is the most common among students: they frequently engage in social network activities, despite having a low degree of participation; by contrast, the creators are a minority, and do not contribute their own content very frequently. This is coherent with previous research, which highlights the need to increase the level of digital participation, underlining the importance of developing digital citizenship skills that go beyond the simple consumption of media. An interesting point to focus on is that the profile of creators is not associated with age or gender, neither supported by higher educational level.

Trust in information sources –traditional and digital– reveals a difference between the two types of users. Even though successful figures on social networks generate the lowest level of trust in the whole sample, the creators show greater trust in information sources compared to the spectators. Among the creators there is a clear positioning to have greater trust in both traditional media and online media, including Twitter, Instagram, blogs, and specialized sites. This data is consistent with other studies that reveal that, the more a network is managed, the less risk is perceived (De-Frutos-Torres et al., 2021). In the specific field of information, Eurobarometer (2018) states that regular use of social networks and coming across fake news more frequently increase confidence in identifying it.

A question about how confidence is built may arise from this data. In believing sources, do the creators take quality criteria into account? Or do they trust sources simply because they are familiar with them in their frequent content production? More research, including the use of qualitative methods, should be devoted to understanding how and why such confidence is built, as other scholars suggest (Herrero-Diz et al., 2019). On the other hand, it seems that uncertainty about information sources, together with fear of public exposure (Vizcaíno-Laorga et al., 2019) restrains the actions of the great majority of the young –the spectators– leading them to a vicious circle of mistrust/passivity/non-contrast and disinformation/increase of fake news/mistrust. The suggestion drawn from this research is to try to work on breaking this vicious circle. Another interesting finding of the research is the role played by creators not only in counteracting false news, but also in verifying the sources and therefore acting on critical awareness. Thus, an active role in producing original content by the “creators” could be associated with more information literacy and thus with an empowerment of fact-checking skills (Jones-Jang et al., 2021).

Creators’ greater trust seems to make them more critical of networks and more aware of their power, since they perceive themselves as an active part of the network. Better skills for the creative use of social networks could confer greater security and freedom to citizens, not only to be active users (creators) but also to perform a role of cyber-activism (and/or activism). In order to contrast information disorder, it could be useful to work on agency, through the creation of content, as well as to point out the meaningfulness of social relationships as well as on the emotional issues related to the sharing act.

In order to reverse information disorder, as suggested by Figueira and Santos (2019) or Sánchez-García (2021), it would be necessary to go beyond the identification and contrasting of fake news, focusing on reflection-action as a guide for the creation of content and its sharing in close relationships. This leads to considering both actions, creating and sharing, not as individual and impulsive acts, but as processes that require self-criticism, by paying attention to the emotional dimension and the social role that they imply. Therefore, media education must continue to work, as happened historically (Buckingham, 2019), to foster a critical approach to information, but it must also encourage activism towards the information sphere, avoiding criticism being transformed into passive acceptance and systemic mistrust, and promoting critical and participatory approaches to the production of digital content (Santamaría-Cárdaba et al., 2021; Boni et al., 2020; Golob et al., 2021). Together with more diffuse forms of media literacy, information literacy should be emphasized in terms of identification, location, evaluation, and use of information (Jones-Jang et al., 2021). In summary, four main points seem to emerge from such research and should stimulate further investigation:

- The need to work better on critical skills to ensure that they do not turn into mere distrust and disengagement.
- The connection of creation and production skills with information skills.
- The deep intertwining of emergent digital creators with media sources (both digital and traditional).
- The need to pay attention to new digital divides issues, related to gender and education.

As a final point, some limitations of the research should be noted. This is an exploratory study with a correlational methodology that cannot preclude causal inferences. The sample was gathered in three different regions of Spain and results should be validated in other contexts. The data on digital behaviors and attitudes are self-reported and possible errors or biases should be considered. Finally, the behaviors of contrasting information occur very infrequently, as shown in the analysis, which is a drawback in terms of the prediction of this behavior. However, many interesting insights were highlighted regarding the relationship between different approaches to media and skills for the future. A challenge which media literacy must keep addressing.

Authors' Contribution

Idea, G.T; Literature review (state of the art), G.T, B.F, M.A; Methodology, G.T, B.F; Data analysis, G.T, B.F; Results, B.F.; Discussion and conclusions, G.T, B.F; M.A; Writing (original draft), G.T, B.F, M.A; Final revisions, G.T, B.F, M.A; Project design and funding agency, G.T, B.F.

Funding Agency

This research has received funding from the Ministry of Science and Innovation of the Government of Spain I+D+I call with reference PID 2019-104689RD-100.

References

- Ahmed, S. (2021). Who inadvertently shares deepfakes? Analyzing the role of political interest, cognitive ability, and social network size. *Telematics and Informatics*, 57, 1-10. <https://doi.org/10.1016/j.tele.2020.101508>
- Ala-Mutka, K. (2011). *Mapping digital competence: Towards a conceptual understanding*. JRC-IPTS European Commission. <https://bit.ly/3trbl1c>
- Allcott, H., Gentzkow, M., & Yu, C. (2019). Trends in the diffusion of misinformation on social media. *Research and Politics*, 6(2), 1-13. <https://doi.org/10.1177/2053168019848554>
- Andersen, J., & Sørensen, S.O. (2020). Communicative actions we live by: The problem with fact-checking, tagging or flagging fake news - the case of Facebook. *European Journal of Communication*, 35(2), 126-139. <https://doi.org/10.1177/0267323119894489>
- Ardevol-Abreu, A., Delpont, P., & Rodríguez-Wangüemert, C. (2020). Intentional or inadvertent fake news sharing? Fact-checking warnings and users' interaction with social media content. *Profesional de la Información*, 29, 1-13. <https://doi.org/10.3145/epi.2020.sep.07>
- Area-Moreira, M., & Pessoa, T. (2012). From solid to liquid: New literacies to the cultural changes of Web 2.0. [De lo sólido a lo líquido: Las nuevas alfabetizaciones ante los cambios culturales de la Web 2.0]. *Comunicar*, 38, 13-20. <https://doi.org/10.3916/C38-2012-02-01>
- Avram, M., Micallef, N., Patil, S., & Menczer, F. (2020). Exposure to social engagement metrics increases vulnerability to misinformation. *Harvard Kennedy School Misinformation Review*, (pp. 1-9). <https://doi.org/10.37016/mr-2020-033>
- Babaei, M., Kulshrestha, J., Chakraborty, A., Redmiles, E.M., Cha, M., & Gummedi, K.P. (2021). Analyzing biases in perception of truth in news stories and their implications for fact checking. *IEEE Transactions on Computational Social Systems*, (pp. 1-12). <https://doi.org/10.1109/TCSS.2021.3096038>
- Ballesteros, J.C., & Picazo, L. (2018). *Las TIC y su influencia en la socialización de adolescentes*. Fundación de Ayuda Contra la Drogadicción (FAD). <https://bit.ly/32iWUel>
- Bernal-Triviño, A.I. (2015). Tecnología, redes sociales, política y periodismo. ¿Pluralidad informativa o efecto bumerán? *Cuadernos.Info*, 36, 191-205. <https://doi.org/10.7764/cdi.36.647>
- Boni, A., Belda-Miquel, S., & Calabuig, C. (2020). *Critical global citizenship education*. Síntesis. <https://bit.ly/3ySn0ql>
- Bradshaw, S., & Howard, P.N. (2019). *The global disinformation order: 2019 Global inventory of organized social media manipulation*. Working Paper 3. University of Oxford. <https://bit.ly/3yU5baT>
- Buckingham, D. (2019). Teaching media in a 'post-truth' age: Fake news, media bias and the challenge for media. *Cultura y Educación*, 31, 213-231. <https://doi.org/10.1080/11356405.2019.1603814>
- Burguet-I-Arfelis, M., & Buxarras, M.R. (2012). Competencias ético-digitales transversalidad y paradojas. In L. García-Aretio (Ed.), *Sociedad del conocimiento y educación* (pp. 221-226). <https://bit.ly/3pm5pEr>
- Carretero, G.S., Vuorikari, R., & Punie, Y. (2017). *DigComp 2.1: The Digital Competence Framework for Citizens with eight proficiency levels and examples of use*. Publications Office of the European Union. <https://doi.org/10.2760/38842>

- Chan, M., Pui, S., Jones, C.R., Hall-Jamieson, K., & Albarraçín, D. (2017). Debunking: A meta-analysis of the psychological efficacy of messages countering misinformation. *Psychological Science*, 28(11), 1531-1546. <https://doi.org/10.1177/0956797617714579>
- De-Frutos-Torres, B., Pastor-Rodríguez, A., & Martín-García, N. (2021). Consumo de las plataformas sociales en Internet y escepticismo a la publicidad. *Profesional de la Información*, 30. <https://doi.org/10.3145/epi.2021.mar.04>
- De-Keersmaecker, J., & Roets, A. (2017). Fake news': Incorrect, but hard to correct. The role of cognitive ability on the impact of false information on social impressions. *Intelligence*, 65, 107-110. <https://doi.org/10.1016/j.intell.2017.10.005>
- Dechêne, A., Stahl, C., Hansen, J., & Wänke, M. (2010). The truth about the truth: A meta-analytic review of the truth effect. *Personality and Social Psychology Review*, 14(2), 238-257. <https://doi.org/10.1177/1088868309352251>
- Eurobarometer (Ed.) (2018). *Fake news and disinformation online*. <https://doi.org/10.2759/559993>
- European Commission (Ed.) (2018). *A multidimensional approach to disinformation. Report of the Independent High level group on fake news and online Disinformation*. Publications Office of the European Union. <https://doi.org/10.2759/0156>
- Figueira, J., & Santos, S. (2019). Perceptions about fake news in Portuguese higher education students: An analysis of consumption and attitudes. *Profesional de la Información*, 28, 1-16. <https://doi.org/10.3145/epi.2019.may.15>
- García-Valcárcel, A. (2016). *Las competencias digitales en el ámbito educativo*. Gredos. <https://bit.ly/3Fqsw6n>
- García-Valcárcel, A., & Martín-Del-Pozo, M. (2015). Análisis de las competencias digitales de los graduados en titulaciones de Maestro. *RELATEC*, 15(2), 155-168. <https://doi.org/10.17398/1695-288X.15.2.155>
- Golob, T., Makarovi, M., & Rek, M. (2021). Meta-reflexivity for resilience against disinformation. [Meta-reflexividad para la resiliencia contra la desinformación]. *Comunicar*, 66, 107-118. <https://doi.org/10.3916/C66-2021-09>
- Guerrero-Pico, M., Masanet, M.J., & Scolari, C.A. (2019). Toward a typology of young producers: Teenagers' transmedia skills, media production, and narrative and aesthetic appreciation. *New Media & Society*, 21(2), 336-353. <https://doi.org/10.1177/1461444818796470>
- Hargittai, E., & Hinnant, A. (2008). Digital inequality: Differences in young adults' use of the Internet. *Communication Research*, 35(5), 602-621. <https://doi.org/10.1177/0093650208321782>
- Hasher, L., Goldstein, D., & Toppino, T. (1977). Frequency and the conference of referential validity. *Journal of Verbal Learning and Verbal Behavior*, 16(1), 80012-80013. [https://doi.org/10.1016/S0022-5371\(77\)80012-1](https://doi.org/10.1016/S0022-5371(77)80012-1)
- Herrero-Diz, P., Conde-Jiménez, J., Tapiá-Frade, A., & Varona-Aramburu, D. (2019). The credibility of online news: An evaluation of the information by university students. *Cultura y Educación*, (2), 31-31. <https://doi.org/10.1080/11356405.2019.1601937>
- Howard, P.N., Neudert, L.M., & Prakash, N. (2021). *Digital misinformation / disinformation and children*. UNICEF. <https://bit.ly/3v3yY1j>
- Jenkins, H., & Carpentier, N. (2013). Theorizing participatory intensities: A conversation about participation and politics. *Convergence*, 19(3), 265-286. <https://doi.org/10.1177/1354856513482090>
- Jenkins, H., Clinton, K., Purushotma, R., Robison, A., & Weigel, M. (2006). *Confronting the challenges of participatory culture: Media education for the 21st Century. White Paper*. MacArthur Foundation. <https://bit.ly/3EjC1Tz>
- Jenkins, H., Shresthova, S., Gamber-Thompson, L., Kligler-Vilenchik, N., & Zimmerman, A. (2016). *By any media necessary: The new youth activism*. New York University Press. <https://doi.org/10.18574/9781479829712-002>
- Jones-Jang, S.M., Mortensen, T., & Liu, J. (2021). Does media literacy help identification of fake news? Information literacy helps, but other literacies don't. *American Behavioral Scientist*, 65(2), 371-388. <https://doi.org/10.1177/0002764219869406>
- Kim, E.M., & Yang, S. (2016). Internet literacy and digital natives' civic engagement: Internet skill literacy or Internet information literacy. *Journal of Youth Studies*, 19(4), 438-456. <https://doi.org/10.1080/13676261.2015.1083961>
- Lewandowsky, S., Ecker, U.K.H., Seifert, C.M., Schwarz, N., & Cook, J. (2012). Misinformation and its correction: Continued influence and successful debiasing. *Psychological Science in the Public Interest*, 13(3), 106-131. <https://doi.org/10.1177/1529100612451018>
- Litt, E. (2013). Measuring users' Internet skills: A review of past assessments and a look toward the future. *New Media & Society*, 15(4), 612-630. <https://doi.org/10.1177/1461444813475424>
- Livingstone, S., & Helsper, E. (2010). Balancing opportunities and risks in teenagers' use of the Internet: The role of online skills and Internet self-efficacy. *New Media & Society*, 12(2), 309-329. <https://doi.org/10.1177/1461444809342697>
- López-De-Ayala, M.C., Vizcaíno-Laorga, R., & Montes-Vozmediano, M. (2020). Hábitos y actitudes de los jóvenes ante las redes sociales: Influencia del sexo, edad y clase social. *Profesional de La Información*, 29(6), 1-13. <https://doi.org/10.3145/epi.2020.nov.04>
- Luo, H., Cai, M., & Cui, Y. (2021). *Spread of misinformation in social networks: Analysis based on Weibo tweets*. Security and Communication Networks. <https://doi.org/10.1155/2021/7999760>
- Mascheroni, G., Cino, D., Mikuska, J., Lacko, D., & Smahel, D. (2020). *Digital skills, risks and wellbeing among European children. Report on (f)actors that explain online acquisition, cognitive, physical, psychological and social wellbeing, and the online resilience of children and young people*. ySKILLS-youth skills. <https://doi.org/10.5281/zenodo.4274602>
- Mele, N., Lazer, D., Baum, M., Grinberg, N., Friedland, L., Joseph, K., & Mattsson, C. (2017). *Combating fake news: An agenda for research and action*. <https://bit.ly/3KExKO7>
- Mihailidis, P., & Viotty, S. (2017). Spreadable spectacle in digital culture: Civic expression, fake news, and the role of media literacies in "post-fact" society. *American Behavioral Scientist*, 61(4), 441-454. <https://doi.org/10.1177/0002764217701217>
- Mønsted, B., Sapiezynski, P., Ferrara, E., & Lehmann, S. (2017). Evidence of complex contagion of information in social media: An experiment using twitter bots. *PloS ONE*, (9), 12-12. <https://doi.org/10.1371/journal.pone.0184148>
- OCDE (Ed.) (2016). *Skills for a digital World*. OECD Publishing. <https://bit.ly/3ehRf07>

- Papadopoulos, S., Bontcheva, K., Jaho, E., Lupu, M., & Castillo, C. (2016). Overview of the special issue on trust and veracity of information in social media. *ACM Transactions on Information Systems*, 34(3), 1-5. <https://doi.org/10.1145/2870630>
- Pennycook, G., & Rand, D. (2019). Lazy, not biased: Susceptibility to partisan fake news is better explained by lack of reasoning than by motivated reasoning. *Cognition*, 188, 39-50. <https://doi.org/10.1016/j.cognition.2018.06.011>
- Pereira, S., Moura, P., Masanet, M.J., Taddeo, G., & Tirocchi, S. (2018). Media uses and production practices: Case study with teens from Portugal, Spain and Italy. *Comunicación y Sociedad*, 33, 89-114. <https://doi.org/10.32870/cys.v0i33.7091>
- Petrucchio, C., & Agostini, D. (2021). Student perceptions of fake news. *International Journal of Digital Literacy and Digital Competence*, 11(2), 28-43. <https://doi.org/10.4018/IJDLDC.2020040103>
- Sánchez-García, F.J. (2021). Educar la mirada. El discurso informativo de las “fake news” en el currículo de Secundaria y Bachillerato. *Contextos Educativos. Revista de Educación*, 27, 153-167. <https://doi.org/10.18172/con.4865>
- Santamaría-Cárdaba, N., Martínez-Scott, S., & Vicente-Mariño, M. (2021). Discovering the way: Past, present and possible future lines of global citizenship education. *Globalisation, Societies and Education*, 19, 687-695. <https://doi.org/10.1080/14767724.2021.1878012>
- Scherer, R., Rohatgi, A., & Hatlevik, O.E. (2017). Students’ profiles of ICT use: Identification, determinants, and relations to achievement in a computer and information literacy test. *Computers in Human Behavior*, 70, 486-499. <https://doi.org/10.1016/j.chb.2017.01.034>
- Soengas-Pérez, X., López-Cepeda, A.M., & Sixto-García, J. (2019). Dieta mediática, hábitos de consumo de noticias y desinformación en los universitarios españoles. *Revista Latina de Comunicación Social*, 74, 1056-1070. <https://doi.org/10.4185/RLCS-2019-1345>
- Taddeo, G., & Tirocchi, S. (2019). Transmedia teens: The creative transmedia skills of Italian Students. *Information, Communication & Society*, 24(2), 241-257. <https://doi.org/10.1080/1369118X.2019.1645193>
- Tandoc, E.C., Lim, Z.V.V., & Ling, R. (2018). Defining “fake news”: A typology of scholarly definitions. *Digital Journalism*, 6(2), 137-153. <https://doi.org/10.1080/21670811.2017.1360143>
- Törnberg, P. (2018). Echo chambers and viral misinformation: Modeling fake news as complex contagion. *PLoS ONE*, 13(9), 1-21. <https://doi.org/10.1371/journal.pone.0203958>
- UNESCO (Ed.) (2019). *Marco de competencias de los docentes en materia de TIC. Versión 3*. <https://bit.ly/3t0R4vN>
- Van-Deursen, A.J.A.M., & Van-Dijk, J.A.G.M. (2014). The digital divide shifts to differences in usage. *New media & Society*, 16(3), 507-526. <https://doi.org/10.1177/1461444813487959>
- Van-Dijk, J. (2009). Users like you? Theorizing agency in user-generated content. *Media, Culture & Society*, 31(1), 41-58. <https://doi.org/10.1177/0163443708098245>
- Vizcaíno-Laorga, R., Catalina-García, B., & De Ayala-López, M.C.L. (2019). Participation and commitment of young people in the digital environment. *Revista Latina de Comunicación Social*, 74, 554-572. <https://doi.org/10.4185/RLCS-2019-1345>
- Vosoughi, S., Roy, D., & Aral, S. (2018). The spread of true and false news online. *Science*, 1151, 1146-1151. <https://doi.org/10.1126/science.aap9559>
- Wardle, C., & Derakhshan, H. (2017). Information disorder: Toward an interdisciplinary framework for research and policy making. *Council of Europe Report*, (pp. 1-108). <https://bit.ly/35PCjGN>
- Wilson, C., Grizzie, A., Tuazon, R., Akyempong, K., & Cheung, C.K. (2011). *Alfabetización mediática e informacional. Currículum para profesores*. UNESCO. <https://bit.ly/3ej9ovb>
- Woolley, S., & Howard, P.H. (2018). *Computational propaganda: Political parties, politicians, and political manipulation on social media*. Oxford University Press. <https://doi.org/10.1093/oso/9780190931407.001.0001>