



## What Is WhatsApp for? Developing Transmedia Skills and Informal Learning Strategies Through the Use of WhatsApp—A Case Study With Teenagers From Spain

[Carmen Costa-Sánchez](#) , [Mar Guerrero-Pico](#)

First Published July 27, 2020 Research Article  
<https://doi.org/10.1177/2056305120942886>



# What Is WhatsApp for? Developing Transmedia Skills and Informal Learning Strategies Through the Use of WhatsApp—A Case Study With Teenagers From Spain

Social Media + Society  
July-September 2020: 1–11  
© The Author(s) 2020  
Article reuse guidelines:  
sagepub.com/journals-permissions  
DOI: 10.1177/2056305120942886  
journals.sagepub.com/home/sms  


Carmen Costa-Sánchez<sup>1</sup>  and Mar Guerrero-Pico<sup>2</sup>

## Abstract

Smartphones and WhatsApp are, respectively, the medium and application that Spanish teenagers most want. However, research into the use of WhatsApp is still quantitatively and qualitatively limited. In addition, little research has been carried out regarding its impact on the development of transmedia skills and informal learning strategies outside the classroom. This article aims to expand the knowledge on teenagers' motivations and their development of transmedia skills and informal learning strategies in relation to their use of WhatsApp. Specifically, a qualitative analysis of data gathered from workshops, interviews, and media diaries is applied as part of a case study methodology involving teenagers from 10 schools located in five different Spanish regions. The results reveal the new WhatsApp uses teenagers are applying in their daily lives as well as the skills and strategies they are developing through said uses in the context of interpersonal and group (WhatsApp groups) interactions: on one hand, production, social, content, and individual management skills, and on the other hand, learning by doing, teaching, and evaluating strategies.

## Keywords

smartphone, WhatsApp uses, transmedia skills, transmedia literacy, Spain

## Introduction

The use of the smartphone in Spain has grown exponentially in recent years. We live in an increasingly connected world (Web 3.0, Internet of Things, 5G networks, etc.), where the smartphone is already a majority tool (70.4% of 15-year-olds have one) and the main platform used for accessing the internet; the functionalities of smartphones and their applications already reach more than 96% of Spanish individuals between 16 and 74 years of age who claim to have used their mobile phone in the last 3 months (Observatorio Nacional de las Telecomunicaciones y de la Sociedad de la Información, 2018). According to the report, *Net Children Go Mobile: Risks and opportunities on the internet and use of mobile devices among Spanish minors (2010–2015)*, smartphones are the most common internet access devices used by all groups of minors (59%) (Garmendia Larrañaga et al., 2016). They are followed by laptops (32%) and tablets (26%). The most frequent online activities for these age groups are

instant messaging (54%), watching videos (44%), and listening to music (42%). Within instant messaging, the tool most used by children and adolescents is WhatsApp (Reolid-Martínez et al., 2016). A total of 76% of children and adolescents between the ages of 11 and 14 habitually use this application and 65% are in WhatsApp groups (Cánovas et al., 2014). It is also the main reason why teenagers ask their parents for a smartphone: “Not having WhatsApp and being out of groups is for them like being outside social relationships and disconnected from the environment” (Del Barrio & Fernández Ruiz, 2017, p. 25).

<sup>1</sup>Universidade de A Coruña, Spain

<sup>2</sup>Independent Scholar, Spain

### Corresponding Author:

Carmen Costa-Sánchez, School of Communication Sciences, Universidade de A Coruña, Campus de Elviña, 15071 A Coruña, Spain.  
Email: carmen.costa@udc.es



Media education promotes an encounter between out-of-school knowledge and academic knowledge (Buckingham, 2018). In this sense, it is basic to understand the digital tools that adolescents use outside the classroom and to detect the knowledge and skills that they may be acquiring through its use them to determine whether these knowledge and skills could be incorporated in academic contexts. Therefore, given the importance of WhatsApp in teenagers' lives, it is pertinent to inquire into the impact the application has in other areas beyond social interactions, such as the development of transmedia skills and learning strategies.

According to Scolari (2018b), transmedia skills are

a series of competences related to digital interactive media production, sharing and consumption. These skills range from problem-solving processes in videogames to content production and sharing in web platforms and social media; the creation, production, sharing, and critical consumption of narrative content (fanfiction, fanvids, etc.) by teenagers is also part of this universe. (p. 11)

On the other hand, informal learning strategies involve a set of individual or collective actions to acquire knowledge and skills from multiple experiences chiefly situated in teenagers' daily lives (Scolari, 2018b). This sequence of actions derives from daily experiences and interactions in different environments (social media, websites, online communities, videogames, YouTube, fan communities, etc.). For instance, strategies such as learning by doing, problem-solving, imitation, playing, evaluation, and teaching have been detected in the field of videogames (Scolari & Contreras-Espinosa, 2019).

This article aims to explore the underlying motivations, transmedia skills, and informal learning strategies linked to the use adolescents make of WhatsApp. To achieve this, a case study methodology was carried out, entailing the qualitative study of data from workshops, interviews, and media diaries conducted with teenagers from 10 schools located in five different Spanish regions. After a brief theoretical review of the teenagers' uses of WhatsApp and the conceptual shifts from media literacy to *transmedia literacy*, an account of the methods and tools applied is given. The "Results" section reveals that teenagers are applying different WhatsApp uses in their daily lives and that transmedia skills are developed through these uses in the context of interpersonal (private conversations) and group (WhatsApp groups) interactions: production, social, content, and individual management. Simultaneously, they apply informal learning strategies: learning by doing, teaching, and evaluating. The study concludes that the use of WhatsApp groups goes beyond communicative dynamics and promotes more production and social transmedia skills and informal learning strategies than those developed in interpersonal interactions.

## Use of WhatsApp Messenger by Spanish Teenagers

WhatsApp is the most important instant messaging application for smartphones and computers in Spain (Sánchez-Moya & Cruz-Moya, 2015). It not only makes it possible to exchange textual messages but also photographs, audios, videos, emoticons, links, and so on. Although the application has recently banned its use by children under 16 years old due to the new data protection regulation, the actual effectiveness of this measure is unknown. The current situation suggests that it continues to be a flagship application in smartphone chat services (Giménez & Zirpoli, 2015). Teenagers use WhatsApp as a tool for interpersonal and group communication. This is facilitated by the very features of the application, which permits the creation of private or group chats, and thus enabling two different contexts of use or interaction. The groups work as authentic social networks in which they converse, exchange information, photographs, videos, screenshots of homework, and so on (Cánovas et al., 2014). They are equivalent to micro-communities, in which informal communication takes place among the members of each closed group, which provides some privacy (Karapanos et al., 2016). The construction of personal identity through mobile devices is especially conditioned by WhatsApp use, which is significantly related to the importance that, in particular females, give to the comments on what they share and how often they change their profile picture on social media (Vidales-Bolaños & Sádaba-Chalezquer, 2017).

In Spain, during Compulsory Secondary Education, the use of WhatsApp increases as the courses advance and the trend seems to stabilize and then decrease when teenagers reach the first year of the last 2 years of high school (16 years old). It is women who have more smartphones and who use their mobile for WhatsApp and messages the most (Del Barrio & Fernández Ruiz, 2017). However, although this is a growing theoretical corpus, there is not yet a broad knowledge base on the purposes of use, motivation, and development of skills related to the platform. Even less among teenagers, since the previous scientific literature has focused its attention on the university or adult public (Rosenberg & Asterhan, 2018). Results of the main previous studies have established that WhatsApp offers users (in this case, individuals between 20 and 60 years old) benefits such as cost, sense of community, and immediacy (Church & De Oliveira, 2013). In agreement with these gratifications, Soliman and Salem (2014) also identify that university students, teachers, and graduates find it interesting as an entertainment mode, to share jokes or funny messages. On the other hand, also in adult users, the tool is identified as of interest for caring for others and strengthening commitment (O'Hara et al., 2014).

Regarding its teaching uses, neither the relationship between intensity of use and academic results (Rodríguez-Martínez et al., 2016; Yavuz, 2016) nor between addiction to

the platform and improvement of social skills (Sánchez de Mera & Lázaro, 2017) has been shown. However, its link with motivation, planning/organization skills, improvement of the collective climate, collaboration learning, its contribution to the development of teamwork skills, and the learning of a second language have been demonstrated (Andújar-Vaca & Cruz-Martínez, 2017; Anwar Dar et al., 2017; Asterhan & Bouton, 2017; Kukulska-Hulme, 2018; Lindsay, 2016; Pérez-Jorge et al., 2018; Rosenberg & Asterhan, 2018).

From the most critical perspective, the platform is accused of interrupting, distracting from tasks and breaking students' concentration (Aharony & Zion, 2013; Karapanos et al., 2016; Yeboah & Ewur, 2014), as well as generating anxiety and stress related to the urgency of receiving a response to the messages sent (Adelhardt et al., 2018; Fondevila Gascón et al., 2014). Recent research highlights that people with low self-esteem and social skills, but eager to obtain the approval of others and a sense of belonging, are more inclined to develop an addiction to this type of app (Chen, 2020).

### From Media to Transmedia Literacy

The emergence of mobile media, the participatory Web, and 2.0 applications have fostered a new stage of media use and relations, in which citizens are not only exposed to the media message but can also spread that message or create/manipulate media productions to resignify them. This context has been called the *convergence culture* (Jenkins, 2006). Media competence (Ferrés Prats et al., 2012) is considered to be a necessary tool for understanding and relating in this new context marked by multiple screens, hyper-connectivity, and the continuous emergence of online communication platforms oriented toward participation, especially, of young people. As Buckingham (2007) reflects, in a context where online media occupy an increasingly dominant position, a reconceptualization of literacy is necessary beyond adding digital literacy as a separate compartment in the curricular menu.

The concept of media competence is considered from a holistic perspective so that aspects linked to audiovisual competence and digital competence converge (Pérez-Rodríguez & Delgado-Ponce, 2012). A global vision of media proficiency would include six dimensions related to skills in the new media usage (García-Ruiz et al., 2014): technology, media language, reception and representation and interaction processes, production and diffusion processes, axiology, and aesthetics.

Taking into consideration the challenge of school learning in a complex context such as the current one, there is a growing urgency and need to train citizens to be critical in their media consumption, as well as in the role of media and media productions (Aguaded Gómez, 2012; Alvermann et al., 2018; Funk et al., 2016; Gutiérrez Martín & Tyner, 2012). However, previous studies have detected a low media proficiency in Spanish society (Ferrés Prats et al., 2012) and shown that there is much room for improvement in the context of

secondary students (García-Ruiz et al., 2014). More recently, it has been reaffirmed that teens use media regularly. However, their practices are far from matching the expectations surrounding concepts such as convergence culture or *produsage* (Pereira et al., 2018), and so their creative participation is deemed as limited (Taddeo & Tirocchi, 2019).

In this line, it is necessary to obtain a better understanding of the media and digital tools that teenagers use outside the classroom to make the most of their knowledge and skills and verify whether it is likely that these skills are included in formal education programs (Lacasa, 2011; Scolari, 2018a). This process, called *transmedia literacy*, includes the set of practices, priorities, sensitivities, learning strategies, and ways of sharing that are developed and applied in the context of new participatory cultures (Scolari, 2018a). The skills that constitute this literacy are organized around nine dimensions: production, individual management, social management, performance, technology and media, narrative and aesthetics, ideology and ethics, and risk prevention (Scolari et al., 2018). By means of explanation, production skills are those related to “the ability to conceive, plan, produce, edit and/or re-appropriate content through different media, platforms and languages”; content management skills refer to “the ability to manage different media content in a variety of platforms and media: select, download, organize and disseminate”; individual management skills are related to “the subject’s ability to self-manage resources, time, their own identity, feelings and emotions”; social management skills refer to “the ability to communicate, coordinate, organize, and lead and teach while gaming or producing collectively”; performance skills include “all kinds of performing media activities using the body, be it in real life scenarios (performing arts) or virtual scenarios (videogames)”; media and technology skills include those related to having knowledge and taking action about socio-political media economies, a subject’s personal media diet, and technological features and languages; narrative and aesthetics skills refers to those “related to interpreting storytelling and narrative structures, as well as delving into the narrative construction through the analysis and evaluation of the genres, characters, aesthetic features, [ . . . ] the ability to reconstruct the transmedia narrative world”; ideology and ethics skills refer to detecting, analyzing, and taking action on media representations of stereotypes (gender, race, culture, religion, etc.) and ethical issues related to copyright, cheating (mainly in videogames), and hacking; and finally, risk prevention skills are those related to “knowing about and taking measures in relation to privacy and security in media (in particular social media)” (Scolari et al., 2018, pp. 805–806).

### Material and Methods

The article is based on the data collected in the context of the Spanish R+D project *Transalfabetismos: Competencias transmedia y estrategias informales de aprendizaje de los adolescentes* [Transliteracies: Teenager’s transmedia skills

and informal learning strategies]. The project's general objective is to identify transmedia competences and informal learning strategies developed by teenagers during their media consumption. More specifically, this work aims to explore teenagers' motivations, transmedia skills, and informal learning strategies derived from their use of WhatsApp.

Therefore, this research is based on these two questions:

*RQ1.* What are the main uses of WhatsApp by Spanish teenagers and the motivations for such uses?

*RQ2.* Can any transmedia skills or informal learning strategies be detected from these uses?

To address these research questions, a methodology based on the combination of qualitative methods was adopted. Specifically, ethnographic, collaborative, and textual methods were integrated. The research, thus, comprised the following stages:

1. Contact with schools and management of consents signed by schools, minors, and families.
2. A qualitative questionnaire about teenagers' socio-cultural backgrounds, media access, habits, and uses.
3. Creative participatory workshops to immerse the researcher and explore teenagers' media practices and favorite media products. These workshops were organized around participatory culture, videogames, and social media. Participant observation and co-creation during workshops permitted us to identify those teenagers who were more active in said areas.
4. In-depth interviews with the most active adolescents identified in the previous step.
5. Media diaries to deepen discourses about teenagers' media diet and practices. All teenagers interviewed were invited to keep a media diary for a week to gain access to their practices with social media and videogames.
6. Textual analysis of the productions made during workshops to observe how skills are applied in these texts.

This combination of methods was implemented to obtain knowledge about different elements of teenagers' experience in using and learning with digital technologies. In order to research how teenagers learn in transmedia contexts, it is essential to remark that the ways they learn through their own and others' practices are not necessarily visible. In fact, most of the time they are performative and not documented; therefore, these set of methods offers an insightful route to access such practices and knowledge.

The purpose of the questionnaire was twofold. On one hand, it was a tool to introduce the research team and the study object to the teens. On the other hand, it served to have an

overview of media access among the participants, and to obtain a first indication of their media preferences (i.e., participatory culture or videogames) to allocate them in the workshops that followed. Workshops allowed us to set up situations in which we could combine traditional ethnographic methods with collaborative ones (e.g., participant observation was applied alongside co-creation). Each workshop consisted of two sessions of 2 hr. Workshops were organized with a common structure consisting of three parts: a "welcome" section that served as an introduction; a "ready-to-go" section, including the collective co-creation of a map of their favorite media or videogames; and a "hands-on" section where teenagers carried out creative work in small groups. In-depth interviews allowed us to explore how teenagers dealt with digital media whereas media diaries provided more details on their daily media practices and routines. Finally, textual analysis enabled us to delve into the degree of complexity of teenagers' media productions created during the workshops.

Disadvantages of this combined methodology are related to the limitations of a qualitative study. It is important to highlight that this work does not intend to be representative of the media consumption of Spanish adolescents, but rather its object of study is a specific type of young person characterized by their media productivity outside the formal educational environment. Their activity is considered valuable to observe certain consumptions and practices that reveal possible skills. Bearing this in mind, a possible bias in the selection of interviewed teenagers is fully acknowledged.

The research takes the form of a case study of the Spanish context. A total of 237 adolescents, aged between 12 and 17 years old, students of Compulsory Secondary Education from five Spanish regions (Andalusia, Catalonia, Community of Madrid, Valencian Community, and Galicia) participated in the study. A total of 47% self-identified as male and 53% as female. The bulk of the sample (69.5%) and the main user population of the platform (Del Barrio & Fernández Ruiz, 2017) were located between 14 and 15 years old, specifically as follows: Age 12 (6.7%), Age 13 (10.6%), Age 14 (45.7%), Age 15 (23.7%), Age 16 (10.6%), and Age 17 (2.1%).

The fieldwork took place from March to September 2016. Two secondary schools were selected in each region (summing a total of 10 schools). The process followed a binary logic: funding (public/private or semi-private), location (urban or province capital/rural or secondary populations), and income level (lower-middle/upper-middle income level).

In total, 237 questionnaires, 20 workshops, 99 interviews, 64 media journals, and 20 textual productions were analyzed. All students completed the questionnaires and participated in the workshops. This article focuses on data derived from workshops, interviews, and media diaries of teenagers from the aforementioned five Spanish regions participating in the study. The software NVivo 11 Pro For Teams was used for the qualitative analysis of data and the development of descriptive and analytical hierarchies that allowed the coding of thematic categories.

**Table 1.** Characteristics of the three communication platforms perceived as the most relevant.

	WhatsApp	Snapchat	Instagram
<b>Need</b>	High	Low	Middle
<b>Formality</b>	Middle	Low	High
<b>Privacy</b>	High	Middle	Low

Authors' own elaboration.

## Results

The results described below are directly linked to the adolescents' uses of WhatsApp, and the transmedia skills and informal learning strategies observed in said uses in the context of both interpersonal and group interactions.

The analysis of the types of interpersonal and group interactions carried out by the teenagers reveals different motivations for use. These are relevant for understanding to what extent the instant messaging service is a powerful socialization tool whose impact transcends its primary communicative function to occupy other personal, productive, and entertainment spheres.

First, it is necessary to highlight that WhatsApp, Instagram, and Snapchat (in that order) have turned into an indispensable mediatic triad for the communication among Spanish teenagers today. Said target of users perfectly differentiate the purposes of use of each one of the platforms and, depending on it, they adjust communication and use to the tone, style, and elements shared.

Thus, WhatsApp is considered a communication channel that is less formal than Instagram (which contents are considered and planned to a greater extent), but more formal than Snapchat, because they deem the ephemeral content to be more instantaneous and spontaneous, less neat and thought. It is also perceived as a closer/private tool (they only have included the people they know in WhatsApp, while the circle of contacts broadens in platforms like Snapchat or Instagram) and it is more necessary in their everyday life (since it also channels practical issues related to family, friends, or school). "We send funny photos with effects on Snapchat. Instagram, we use it to post beautiful photos and birthday videos. And we use WhatsApp for everything—from homework to funny videos, everything," explains David (13 years old, workshop) (Table 1).

In the following paragraphs, we show the results about uses and motivations, and transmedia skills and informal learning strategies associated with the platform, in its double formula, group, or interpersonal.

### WhatsApp Uses and Motivations by Spanish Teenagers (RQ1)

**Groups.** The WhatsApp group not only serves Cayetana (14 years old) to stay in touch with her friends but also helps her arrange to meet up with them on Saturday afternoons after choosing a meeting time according to the city's bus

schedule. Speaking and, especially, organizing meetups with friends are one of the main uses that teenagers give to WhatsApp groups. In addition, it is one of the applications they are most familiar with because its use is closely related to acquiring their first mobile device. As María (15 years old, interview) puts it, "I've had WhatsApp ever since I got my first smartphone and I use it for everything: meeting up, sharing homework, pictures or just chatting about what happened in the day . . ." Similarly, Nerea (15 years old, interview) links the application to a milestone:

The one I use most is WhatsApp, I've had it since I started high school and I use it every day unless my phone is broken down. I chat with my friends, with mum for errands, with my classmates, and with my girls from dance practice whenever we are cooking up a performance.

The importance of WhatsApp in teenagers' lives is further confirmed through media diaries, which register a daily, constant, and extended use of the application: "[Sunday morning] When I woke up, I checked out WhatsApp to reply to the messages my friends had sent through the night" (Roberto, 14 years old). The reason is partly due to its efficiency, as Miguel (14 years old, interview) points out: "It's faster, you don't have to be calling people who don't pick up the phone and so it's a mess. You send a message, and if someone doesn't show up, then OK, and if they do, better." Abraham (14 years old, interview) shares Miguel's practical approach, although, in addition, he uses the platform as a to-do list. During school hours, he had proposed to friends to go to the movies, although without specifying a day or time. When he got home, he remembered that "he had to talk about this," so he asked them through WhatsApp again "so you don't forget, and so it's another thing down."

WhatsApp also plays a role as an organizational tool in the school environment, where groups become chats to share common homework, remember important classroom news, help review concepts before an exam, and coordinate teamwork tasks.

Teenage students use the application as a file for teachers' notes that are written on the board, something that helps students lagging behind to complete and improve their own notes. On this subject, Javier (15 years old, interview) explains the usual *modus operandi* when the researcher reminds him about the rules against using a mobile phone in the classroom:

Usually, we take the photo and share it in the group [. . .] You ask the teacher; some let you, others don't, or you wait until they go back to their desk and then take the photo. So, in theory it's forbidden but as long as you don't take the photo out of the group . . .

Unlike the general class group, where school obligations are usually mixed with jokes and personal stories, these specific work groups have an ephemeral lifespan, as Mariña (13 years old, interview) explains. She usually deletes them

**Table 2.** Uses, motivations, skills, and learning strategies of adolescents using WhatsApp.

Type of communication	Main uses	Motivations	Transmedia skills	Informal learning strategies
Interpersonal	<ul style="list-style-type: none"> <li>• Talk and meet up with friends and family</li> <li>• Send photos</li> <li>• Send videos</li> <li>• Send audios</li> <li>• Humor</li> </ul>	<ul style="list-style-type: none"> <li>• Communication</li> <li>• Entertainment/have fun</li> <li>• Share contents</li> </ul>	<ul style="list-style-type: none"> <li>• Individual management skills (manage time and resources)</li> <li>• Social management skills (coordinate)</li> </ul>	<ul style="list-style-type: none"> <li>• Learning by doing</li> </ul>
Group	<ul style="list-style-type: none"> <li>• Talk and meet up with friends and family</li> <li>• Catch up with lessons and homework</li> <li>• Send photos</li> <li>• Send videos</li> <li>• Send audios</li> <li>• Humor</li> <li>• Play videogames</li> <li>• Second screen</li> </ul>	<ul style="list-style-type: none"> <li>• Communication</li> <li>• Entertainment/have fun</li> <li>• Share contents</li> <li>• Get coordinated for other activities</li> <li>• Collaborate</li> <li>• Request opinions</li> <li>• Reinforcement of the group</li> </ul>	<ul style="list-style-type: none"> <li>• Production skills (record audio and video, take photos)</li> <li>• Social management skills (coordinate, collaborate, teach, recommend, and share content).</li> <li>• Content management skills (select materials, plan content dissemination)</li> </ul>	<ul style="list-style-type: none"> <li>• Learning by doing</li> <li>• Teaching</li> <li>• Evaluating</li> </ul>

Authors' own elaboration.

when she and her classmates have finished the task the teacher has assigned, and then regroups with other classmates for future tasks.

WhatsApp use as a support tool for organizing and carrying out creative teamwork naturally emerged during the workshops. Without being prompted by researchers, teenagers repeatedly resorted to the application so that they could coordinate themselves and share footage with each other as long as the wireless network of the center allowed it.

Groups also serve as containers for exchanging photos. However, this is not exclusive to the school environment, as can be seen in the practices of some teenagers, who, like Mariña, share photos first on WhatsApp to get their friends' opinions before uploading them to social media platforms with a more public reach, like Instagram, or exchanging photos to edit a birthday video collage for a friend. In regard to gender differences, female teenagers are more prone to this behavior.

Meeting up and assigning roles are other uses that teenagers give to WhatsApp groups in relation to their activity in the digital environment of video games. Mario (14 years old, interview) uses the application to "call his clan partners to play *Clash of Clans*, and to coordinate the necessary movements during games." Other students also use this type of channel to keep up with the latest news in the world of videogames, discuss the benefits of new releases, as well as exchange tricks or ask for help to overcome difficult levels. Even though female teenagers are also gamers, WhatsApp uses related to videogames arise as more common among males.

In a minority, other teenagers use WhatsApp groups as a Social TV platform, that is, a second screen to talk about TV shows with their friends while they are watching them (see Table 2).

*Interpersonal Communications.* Far from the practical applications of WhatsApp groups for organizing meetings and tasks, in private conversations the basic objective is to communicate with members from the teenagers' closest environment. It is a cross-cutting use of all instant messaging contexts, whether they are interpersonal or group. For Abraham, WhatsApp is a "basic" tool without which he would live "a bit excluded from the world," which refers to the contributions described above (Del Barrio & Ruiz, 2017).

In view of the evidence analyzed, this primary use acquires a completely hegemonic position in one-to-one exchanges. In these cases, once again, a search for efficiency is observed, although an economic motivation lies beneath it, as evidenced by the references to savings in the contracted telephone rate and in the consumption of mobile data: "You can talk to lots of people and don't spend much data or anything like that either. It is also very fluid," says Elisa, a 13-year-old student (interview).

In Table 2, it can be observed how some uses and motivations in private WhatsApp exchanges predictably overlap with those found in group exchanges. For instance, meeting with friends (not groups) and content sharing. Nevertheless, it is important to stress the personal nature of these private conversations (and therefore, the uses involved in them) as opposite to that of group chats, where the primary focus is put on the social.

### *Transmedia Skills and Informal Learning Strategies Related to Platform Use (RQ2)*

The uses of WhatsApp mentioned previously respond to a series of transmedia skills and informal learning strategies that teenagers put into practice in their day to day in a natural way (see Table 2). In general, these skills are included in the

field of production skills, social management, content management, and individual management.

**Groups.** In WhatsApp groups, it is possible to observe simple examples of the development of social management skills, such as coordination, in any of the conversations of Cayetana, Miguel, or Abraham to arrange to meet with their friends, or Mario's conversations, when he asks if someone is available to play *Clash of Clans*. All these teenagers make effective use of the media technology at their fingertips, being aware of the advantages of using them for the communicative purpose they have set. At the same time, on the individual level, each of them demonstrates a clear management of the resources available to them and of the platform's own codes. Other students, such as Margarita (12 years old, workshop), apply these processes of group coordination to more complex goals such as video recording, which demonstrates a use intended for organizing collective production dynamics.

Within groups, there are also instances where peer collaboration flows. A clear case is the dynamics related to the use of WhatsApp as a support for school tasks, from asking for the homework of that day to explaining how to do it using links, photographs, videos, or audio notes, as stated by 15-year-old Rami in an interview. In these study clubs, informal learning strategies, such as *teaching* and *evaluating*, arise. In the former, the learner acquires a skill by transmitting knowledge to others, whereas in the latter, the learner acquires or masters a skill by examining their own or others' work, or by others examining their work. This can also be appreciated in groups dedicated to videogames, where teenagers share tricks to overcome levels.

Collaborative processes extend to areas far from the school environment, such as social media, where this ability to mobilize and appeal to the critical mass of users is fully extended. You can see an incipient example of this in Carla's (12 years old, interview) attempts to increase her "likes":

I often meet up with friends to upload stuff and we tell each other through WhatsApp to like it and to gain some popularity that way. When some of my friends share a photo on social media, they send a link through the WhatsApp group that we share asking for likes or comments.

A collaborative effort is also detected in the birthday video collages that María and her group of friends edit, and in the queries, they make before they upload a photo to Instagram, which thus expands the production process from the individual to the group. Such queries are especially remarkable for the material the student selects before spreading it in that social media platform. The decisions are made between peers based on the feedback that María gets from her friends and, once the photo is chosen, the adolescent sets a date to share it, which is usually around 2 weeks from the moment the image is selected. Such practice is highly frequent in groups formed by females.

In view of these findings, it can be said that WhatsApp groups are seen as a tool to enhance students' learning thanks to its features for carrying out collective work that involves social management skills, such as collaborating, coordinating, recommending, and sharing content with peers. In addition, its use would account for the development of skills related to the adequate management of available resources and the management of the content itself through the selection and prior planning of materials between peers.

**Interpersonal Communication.** Unlike in groups, personal management skills come to the fore in private conversations. In this context of use, where, as has been seen, the focus is on maintaining relationships with the social and family environment, the quantity and density of the detected skills is much lower compared with that of group exchanges. Within these, there is a clear practical nuance that, along with the interaction with peers, leads to the development of certain additional skills and allows the identification of possible informal learning strategies (e.g., WhatsApp groups to manage homework, and videogame-focused groups).

However, private conversations highlight, above all, skills related to the management of available resources and time. Javier remembers how before he used instant messaging, he had to go to a call center to talk with his relatives in Ecuador, in clear reference to the dramatic change in communications brought about by these services in general. To a lesser degree, social management skills such as collaboration (exclusively related to duties and study), coordination (meetings of two people), and sharing of content also emerge.

## Discussion and Conclusion

Adolescents' use of WhatsApp is governed by a series of uses that go beyond the strictly communicative purpose. This research validates previous diagnoses (Church & De Oliveira, 2013; Soliman & Salem, 2014) and notes as research findings uses of the platform linked to the organization of joint activities, coordination of class work, collective filling of class notes, collaborative elaboration of audiovisual contents, testing of personal images among the peer group, implementation of image strategies on the internet, and commentary of television programs using the application as a second screen (RQ1: What are the main uses of the platform by Spanish teenagers?). This platform is confirmed as an extension and a dynamic element of the daily activity of young people, who consider WhatsApp as a virtual socialization channel necessary in their daily lives. Beyond interpersonal conversation, WhatsApp groups have become the usual support and complement of activities related to leisure and study. In this sense, WhatsApp groups especially enrich face-to-face networks (Requena & Ayuso, 2019).

WhatsApp is for teenagers, a transversal tool in terms of the spheres of activity (private/family or social), which leads to the fact it has become indispensable in their everyday life.



In addition to being a direct communication channel at personal or group level (in such a way that the platform plays a leading role), the platform constitutes the secondary support for other set of activities (serves as an accompaniment or management platform) to: organize meetings, organize processes of audiovisual content in a collaborative manner, organize online games, and organize homework assignments. Furthermore, in a second place, it is helpful to share, essentially, amusing or fun contents, contents for social media before making them public, and class contents (tasks, homework, advises, etc.).

Regarding contents production, three levels of complexity in the use of WhatsApp are identified: (a) as a platform to test pictures, images, or videos created (generally before sharing them in a more public platform such as Instagram); (b) as a tool for producing text, audio, images, or video for different purposes; and (c) as a support tool to create in a collaborative manner and/or share knowledge. This last level would represent the applied embodiment of a collective intelligence that allows them to immerse as a group into artistic-creative processes or of knowledge learning.

Therefore, the uses of WhatsApp detected by this research allow to catalog a series of transmedia skills and informal learning strategies associated with them (RQ2: Can any skills or informal learning strategies be detected from these uses?), mainly related to the management of social relations and processes and to media production. The first of these transmedia skills would be production skills, such as recording audios and taking photos and/or videos. In second place, and prominently in the case of WhatsApp groups, are social management skills such as collaborating, coordinating, leading, teaching, recommending, and creating a shared culture. Both for doing tasks or academic works and for leisure/free time dynamics (playing videogames, meeting up for another activity, elaborating birthday videos), collaboration constitutes a key skill as much for the continuity of their school performance as for their human and social development.

Collaborating implies some kind of coordination that usually results in leadership, a skill that again goes beyond formal education and aims for an adequate development in society. In addition, the study has detected that teenagers teach through WhatsApp; that is, they give directions to peers to learn about school and extracurricular issues and recommend cultural products that they like. Thus, informal learning strategies like teaching, evaluating, and learning by doing arise. Moreover, the group tool allows them to generate a team culture, a sense of belonging, and reinforcement of the group. Third, in terms of content management skills, WhatsApp contributes to the planning of spreading content on social media, acting as a pre-network in which this content is shared before being publicly posted. In this way, they manage their own digital image more carefully, as they obtain feedback that works as an initial filter to their exposure in networks. Regarding gender differences, this behavior is more common in groups of female teenagers.

The group's endorsement is transferred from this more intimate environment to the projection on the internet in the form of positive interactions with their publications, once they receive the group's prior approval. In this sense, the research coincides with previous studies that explain that WhatsApp is perceived as a platform in which users have greater control over who their audience is (Fortier & Burkell, 2016; Guerrero-Pico et al., 2019), which implies a more intimate participation (Jenkins et al., 2013). This, in turn, would explain the absence in the sample of conversations about privacy issues related to the use of WhatsApp.

In general, the study concludes that the use of WhatsApp groups promotes, to a greater extent than interpersonal conversation, transmedia skills and informal learning strategies that are useful for adolescents in their school activities and personal development. Although other researches have established different roles in terms of the transmedia skills of adolescents (Guerrero-Pico et al., 2019), the analysis of WhatsApp allows to conclude that the universal nature of its use as a basic instant messaging application standardizes the skills associated with the platform. That means that, independently of the fact of being more or less proactive in their communicational and organizational dynamics, the experience of learning through using this tool is common for teenagers. In this sense, we may talk about intensity of uses rather than a classification of users' profiles by levels of skill within the platform. Some intensive WhatsApp users with a high use rate may appear at first as more trained in using the platform and may probably test its new features earlier than others. But the catalog of transmedia skills developed through the use of WhatsApp depends ultimately on the communicative practices carried out on the platform and on its primary affordances as an instant messaging application (e.g., interaction, knowledge sharing, synchronicity and asynchronicity, emotion and expression, and access to media, among others) (Klein et al., 2018). This would imply that the types of skills cultivated by different users of WhatsApp would tend to be similar regardless of their level of skill. Therefore, in this particular case, it would more suitable in principle to draw distinctions based on how intensely users interact through the application.

As for informal learning strategies, they emerge as a key element that needs to be incorporated more often in media literacy studies when looking into concepts such as proficiency and skill, as they shed light on the processes of how those are being acquired and mastered. In this line, it is suggested a further inquiry into informal learning strategies and their possible categorizations (Scolari & Contreras-Espinosa, 2019) vis-à-vis with the transmedia skills they may bring out in learning processes occurred in other platforms.

It is important to stress again that teaching on media requires the encounter between the knowledge promoted from the schools and knowledge derived from their own interaction in and with the media. To foster critical media users, it is necessary to know what teenagers are doing with media and to apply this knowledge to formal learning

environments. The reduction of the gap between formal and informal learning, the promotion of exchanges between them, and a better exploration of their specificities should be considered as priorities in any innovative educational programming (Scolari, 2018b). As Buckingham (2018) reflects, the binary distinction between formal and informal literacy is not useful in the formulation of the respective educational policies. The use of WhatsApp accompanies adolescents in their daily lives, and it is of interest to go deeper into it and observe how it contributes to the personal and academic development of minors, beyond the classroom groups promoted by the teaching staff or the teaching environment.

Concerning the limitations of the study, first, we should consider that the socio-educational, technological, and cultural context of the population under study (adolescents between 12 and 17 years old) is restricted to one country: Spain. Second, we have to take into account the specific time frame of this study and the rapid transformations on the social media landscape, something that obliges to further contextualize both data and findings.

However, the study has gone beyond previous studies and research findings of interest for future work have been extracted. One possible proposal of a research line to be explored is the use of the WhatsApp as a semi-private space through which adolescents exchange opinions when they watch television, which would entail transmedia skills linked to criticism and recognition of the aesthetics of an audiovisual product. It is also recommended to go deeper into its use as a platform associated with the organization and implementation of online multiplayer games, as well as with detecting the possible associated skills. Finally, it would be interesting to develop comparative research including other platforms to detect common or distinct uses, skills, and strategies.

### Acknowledgements

We would like to thank all the researchers and assistants involved in every stage of the *Transalfabetismos* project for their inspiring vision and precise insights.

### Data Statement

Due to data protection legislation, the large amount of source data used for this study cannot be made publicly available.

### Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

### Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This work was supported by the Ministry of Economy, Industry and Competitiveness of Spain (Grant No. CSO2014-56250-R), corresponding to the project *Transalfabetismos: Competencias transmedia y estrategias informales de aprendizaje de los adolescentes* [Transliterations: Teenagers' transmedia skills and informal learning strategies].

### Informed Consent

All students and their parents signed an informed consent agreeing to participate in the several stages of the project and to have their data treated in an anonymous manner. Therefore, all first names referring to students in this work are pseudonyms.

### ORCID iD

Carmen Costa-Sánchez  <https://orcid.org/0000-0001-8154-9537>

### References

- Adelhardt, Z., Markus, S., & Eberle, T. (2018). Teenagers' reaction on the long-lasting separation from smartphones, anxiety and fear of missing out. In *Proceedings of the 9th International Conference on Social Media and Society* (pp. 212–216). Association for Computing Machinery.
- Aguaded Gómez, J. I. (2012). La competencia mediática, una acción educativa inaplazable [Media proficiency, an educational initiative that cannot wait]. *Comunicar*, 39, 7–8. <https://doi.org/10.3916/C39-2012-01-01>
- Aharony, N., & Zion, A. (2013, February 19–20). *The influence of WhatsApp use on teenagers' working memory: An exploratory study* [Conference session]. Proceedings of the 13th Chais Conference for the Study of Innovation and Learning Technologies: Learning in the Technological Era, The Open University of Israel, Raanana.
- Alvermann, D. E., Moon, J. S., Hagwood, M. C., & Hagood, M. C. (2018). *Popular culture in the classroom: Teaching and researching critical media literacy*. Routledge.
- Andújar-Vaca, A., & Cruz-Martínez, M. S. (2017). Mobile instant messaging: WhatsApp and its potential to develop oral skills. *Comunicar*, 25(50), 43–52. <https://doi.org/10.3916/C50-2017-04>
- Anwar Dar, Q., Ahmad, F., Ramzan, M., Khan, S., Ramzan, K., Ahmed, W., & Kamal, Z. (2017). Use of social media tool “WhatsApp” in medical education. *Annals of King Edward Medical University*, 23(1), 39–42. <https://doi.org/10.21649/akemu.v23i1.1497>
- Asterhan, C. S., & Bouton, E. (2017). Teenage peer-to-peer knowledge sharing through social network sites in secondary schools. *Computers & Education*, 110, 16–34.
- Buckingham, D. (2007). Media education goes digital: An introduction. *Learning, Media and Technology*, 32(2), 111–119. <https://doi.org/10.1080/17439880701343006>
- Buckingham, D. (2018). Foreword. In C. A. Scolari (Ed.), *Teens, media and collaborative cultures. Exploiting teens' transmedia skills in the classroom* (pp. 5–7). H2020 Transliteration Project.
- Cánovas, G., García, de Pablo, A., Oliaga, A., & Aboy, I. (2014). *Menores de edad y conectividad móvil en España: Tablets y smartphones* [Minors and mobile connectivity in Spain: Tablets and smartphones]. Centro de Seguridad en Internet para los Menores en España. <https://bit.ly/2NPapAo>
- Chen, C.-Y. (2020). Smartphone addiction: Psychological and social factors predict the use and abuse of a social mobile application. *Information, Communication & Society*, 23, 454–467. <https://doi.org/10.1080/1369118X.2018.1518469>
- Church, K., & De Oliveira, R. (2013). What's up with WhatsApp? Comparing mobile instant messaging behaviors with traditional SMS. In *Proceedings of the 15th International Conference on Human-Computer Interaction with Mobile Devices and*

- Services* (pp. 352–361). Association for Computing Machinery. <https://doi.org/10.1145/2493190.2493225>
- Del Barrio, A., & Fernández Ruiz, I. (2017). Hábitos de uso del WhatsApp por parte de los adolescentes [WhatsApp use habits by adolescents]. *International Journal of Developmental and Educational Psychology*, 2(1), 23–30.
- Ferrés Prats, J., Aguaded-Gómez, I., & García-Matilla, A. (2012). La competencia mediática de la ciudadanía española: dificultades y retos [Media competence in the Spanish citizenship: Difficulties and challenges]. *Revista ICONO14*, 10(3), 23–42.
- Fondevila Gascón, J. F., Carreras Alcalde, M., Mir Bernal, P., del Olmo Arriaga, J. L., & Pesqueira Zamora, M. J. (2014). El impacto de la mensajería instantánea en los estudiantes en forma de estrés y ansiedad para el aprendizaje: análisis empírico [The impact of instant messaging on teenagers' stress and anxiety related to learning: An empirical analysis]. *Didáctica, Innovación Y Multimedia*, 30, 1–15.
- Fortier, A., & Burkell, J. (2016). Display and control in online social spaces: Towards a typology of users. *New Media & Society*, 20(3), 845–861. <https://doi.org/10.1177/1461444816675184>
- Funk, S., Kellner, D., & Share, J. (2016). Critical media literacy as transformative pedagogy. In M. N. Yildiz & J. Keengwe (Eds.), *Handbook of research on media literacy in the digital age* (pp. s1–s30). IGI Global.
- García-Ruiz, R., Gozálvarez Pérez, V., & Aguaded Gómez, J. I. (2014). La competencia mediática como reto para la educación: instrumentos de evaluación [Media competence as a challenge for education: Instruments for assessment]. *Cuadernos. Info*, 35, 15–27. <https://doi.org/10.7764/cdi.35.623>
- Garmendia Larrañaga, M., Jiménez Iglesias, E., Casado del Río, M. Á., & Mascheroni, G. (2016). *Net Children Go Mobile. Riesgos y oportunidades en internet y uso de dispositivos móviles entre menores españoles (2010-2015)* [Net Children Go Mobile. Risks and opportunities on the Internet and use of mobile devices among Spanish minors (2010-2015)]. Universidad del País Vasco/Ministerio de Industria. <https://bit.ly/2NP2Xff>
- Giménez, M., & Zirpoli, R. (2015). Trastornos psicológicos vinculados al uso de Whatsapp [Psychological disorders related to WhatsApp use]. In *VII Congreso Internacional de Investigación y Práctica Profesional en Psicología XXII Jornadas de Investigación*. Universidad de Buenos Aires. <https://bit.ly/NNSrft25>
- 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>
- Gutiérrez Martín, A., & Tyner, K. (2012). Educación para los medios, alfabetización mediática y competencia digital [Media education, media literacy and digital competence]. *Comunicar*, 19(38), 31–39. <https://doi.org/10.3916/C38-2011-02-03>
- Jenkins, H. (2006). *Convergence culture: Where old and new media collide*. NYU Press.
- Jenkins, H., Ford, S., & Green, J. (2013). *Spreadable media: Creating meaning and value in a networked culture*. NYU Press.
- Karapanos, E., Teixeira, P., & Gouveia, R. (2016). Need fulfillment and experiences on social media: A case on Facebook and WhatsApp. *Computers in Human Behavior*, 55, 888–897. <https://doi.org/10.1016/j.chb.2015.10.015>
- Klein, A. Z., Da Silva Freitas, J. C., Mattiello da Silva, J. V., Victoria Barbosa, J. L., & Baldasso, L. (2018). The educational affordances of mobile instant messaging (MIM): Results of WhatsApp used in higher education. *International Journal of Distance Education Technologies*, 16(2), 51–64. <https://doi.org/10.4018/IJDET.2018040104>
- Kukulka-Hulme, A., & Viberg, O. (2018). Mobile collaborative language learning: State of the art. *British Journal of Educational Technology*, 49, 207–218. <https://doi.org/10.1111/bjjet.12580>
- Lacasa, P. (2011). *Los videojuegos. Aprender en mundos reales y virtuales* [Videogames. Learning in real and virtual worlds]. Ediciones Morata.
- Lindsay, L. (2016). Transformation of teacher practice using mobile technology with one-to-one classes: M-learning pedagogical approaches. *British Journal of Educational Technology*, 47, 883–892. <https://doi.org/10.1111/bjjet.12265>
- O'Hara, K. P., Massimi, M., Harper, R., Rubens, S., & Morris, J. (2014). Everyday dwelling with WhatsApp. In *Proceedings of the 17th ACM Conference on Computer Supported Cooperative Work & Social Computing* (pp. 1131–1143). Association for Computing Machinery. <https://doi.org/10.1145/2531602.2531679>
- Observatorio Nacional de las Telecomunicaciones y de la Sociedad de la Información [National Observatory for Telecommunications and Information Society]. (2018). *La sociedad en red* [The Network Society]. <https://bit.ly/2QgFfhU>
- 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>
- Pérez-Jorge, D., Barragán-Medero, F., Gutiérrez-Barroso, J., & Castro-León, F. (2018). A synchronous tool for innovation and improvement of university communication, Counseling and Tutoring: The WhatsApp Experience. *EURASIA Journal of Mathematics, Science and Technology Education*, 14(7), 2737–2743.
- Pérez-Rodríguez, A., & Delgado-Ponce, A. (2012). De la competencia digital y audiovisual a la competencia mediática: dimensiones e indicadores [From digital and audiovisual competence to media competence: Dimensions and indicators]. *Comunicar*, 20(39), 25–34. <https://doi.org/10.3916/C39-2012-02-02>
- Reolid-Martínez, R. E., Flores-Copete, M., López-García, M., Alcántud-Lozano, P., Ayuso-Raya, M. C., & Escobar-Rabadán, F. (2016). Frecuencia y características de uso de Internet por adolescentes españoles: Un estudio transversal [Frequency and characteristics of Internet use by Spanish adolescents]. *Archivos argentinos de pediatría*, 114(1), 6–13.
- Requena, F., & Ayuso, L. (2019). Individualism or complementarity? The effect of digital personal networks on face-to-face personal networks. *Information, Communication & Society*, 22, 2097–2111. <https://doi.org/10.1080/1369118X.2018.1477968>
- Rodríguez-Martínez, M. C., Valerio-Ureña, G., Cárdenas-Anaya, C. A., & Herrera-Murillo, D. J. (2016). Percepción y realidad del uso de WhatsApp en estudiantes universitarios de ciencias de la salud [Perception and reality in the use of WhatsApp by university students of Health Sciences]. *FEM: Revista de la Fundación Educación Médica*, 19(3), 118–124.
- Rosenberg, H., & Asterhan, C. S. (2018). “WhatsApp, teacher?” Student perspectives on teacher-student WhatsApp interactions in secondary schools. *Journal of Information Technology Education-research*, 17, 205–226.

- Sánchez de Mera, D., & Lázaro, P. (2017). La adicción al Whatsapp en adolescentes y sus implicaciones en las habilidades sociales [WhatsApp addiction in adolescents and its implications in social skills]. *Tendencias Pedagógicas*, 29, 121–134.
- Sánchez-Moya, A., & Cruz-Moya, O. (2015). “Hey there! I am using WhatsApp”: A preliminary study of recurrent discursive realisations in a corpus of WhatsApp statuses. *Procedia: Social and Behavioral Sciences*, 212, 52–60. <https://doi.org/10.1016/j.sbspro.2015.11.298>
- Scolari, C. A. (2018a). Introduction: From media literacy to transmedia literacy. In C. A. Scolari (Ed.), *Teenagers, media and collaborative cultures. Exploring teen’s transmedia skills in the classroom* (pp. 14–23). H2020 TRANSLITERACY Research Project/Universitat Pompeu Fabra.
- Scolari, C. A. (2018b). *Transmedia literacy in the new media ecology: White paper*. H2020 TRANSLITERACY Research Project/Universitat Pompeu Fabra.
- Scolari, C. A., & Contreras-Espinosa, R. S. (2019). How do teens learn to play video games? Informal learning strategies and video game literacy. *Journal of Information Literacy*, 13(1), 45–61. <https://doi.org/10.11645/13.1.2358>
- Scolari, C. A., Masanet, M.-J., Guerrero-Pico, M., & Establés, M.-J. (2018). Transmedia literacy in the new media ecology: Teens’ transmedia skills and informal learning strategies. *El Profesional de la Información*, 27(4), 801–812. <https://doi.org/10.3145/epi.2018.jul.09>
- Soliman, D. A., & Salem, M. S. (2014). Investigating intention to use mobile instant messenger: The influence of socialibility, self-expressiveness, and enjoyment. *The Journal of American Academy of Business*, 19(2), 286–293.
- Taddeo, G., & Tirocchi, S. (2019). Transmedia teens: The creative transmedia skills of Italian students. *Information, Communication & Society*. Advance online publication. <https://doi.org/10.1080/1369118X.2019.1645193>
- Vidales-Bolaños, M. J., & Sádaba-Chalezquer, C. (2017). Adolescentes conectados: La medición del impacto del móvil en las relaciones sociales desde el capital social [Connected teens: Measuring the impact of nobile phones on social relationships through social capital]. *Comunicar*, 53(25), 19–28. <https://doi.org/10.3916/C53-2017-02>
- Yavuz, F. (2016). Do smartphones spur or deter learning: A Whatsapp case study. *International Journal of Education and Science*, 15(3), 408–415. <https://doi.org/10.1080/09751122.2016.11890551>
- Yeboah, J., & Ewur, G. D. (2014). The impact of WhatsApp messenger usage on students performance in tertiary institutions in Ghana. *Journal of Education and Practice*, 5(6), 157–164.

### Author Biographies

**Carmen Costa-Sánchez**, PhD, Universidade de Santiago de Compostela, Spain, is an associate professor of Communication Strategies in the Department of Sociology and Communication Sciences at the School of Communication Sciences at the Universidade de A Coruña. Her research interests include transmedia storytelling, media literacy, and social media.

**Mar Guerrero-Pico**, PhD, Universitat Pompeu Fabra, Spain, is an independent scholar. Her research program spans the areas of transmedia storytelling, fan cultures, television shows, social media, and media literacy.