At school with Instagram: An action-research project in Italy and Portugal[1]

Alessio Castiglione[2]* iD

[2] Department of Psychology, Educational Sciences and Human Movement, Faculty of Education, University of Palermo, Palermo, Italy.

Article Info

Abstract

According to a survey reported by DataReportal dated April 2023, Instagram ranks as the fourth most-used social media network among the world's population, with more than 1.5 billion registered users. This ranking, preceded only by Facebook, YouTube, and WhatsApp, shows how the Meta company's social network has influenced trends and convinced more people and professionals to take advantage of its internal features to communicate, entertain, and work. However, despite the wide membership of professors, science disseminators, and projects within Instagram, teaching and learning are still under-recognized as possible practices with social networking sites. Considering that most social networking platforms allow membership from the age of 13, the question arises regarding how aware schools are of the teaching-learning techniques that can be applied in this context. To this end, the article proposes theories, methodologies, and experiences for considering Instagram as a virtual learning environment in formal education, especially for the latest generation of students. In particular, after selecting studies that justify its choice, value, and practice, this paper will illustrate the methodological model "Edu-social Algorithm," developed through international action research with ethnography that led 130 students and 77 teachers to connect on Instagram to study and teach together.

1 Introduction

When we think of school, the first thing that comes to mind is not the smartphone, but this is a thought we could call generational thinking (Twenge, 2023). What happens today during school breaks, during recess, and sometimes even during lessons is that today's students struggle with their technological devices, which are used to communicate, photograph, and post what they are and what they are doing (Giuffré & Fasoli, 2022). Often, however, these same activities have not been adapted to the teaching process; in many ways, trying to distance the smartphone because it is considered one of the greatest distractions or, worse, enemies of the classroom (Ferri & Marinelli, 2010). In the digital age, where most people, both young and adult, own at least one

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* Contact: alessio.castiglione@unipa.it

technological device in their lives (Castiglione et al., 2018), we need to ask how effective it is to identify mobile technologies as a problem without initiating legitimate reflection (Gheno & Matroianni, 2018). Since time immemorial, pedagogical research, with its educational research, has helped us face the challenges in the different stages of life, along with the transformations, evolutions, difficulties, and eras associated with them. Today, more than ever, technology is dichotomous, encompassing both risks and opportunities. However, it is considered appropriate to go beyond this to explore it from a phenomenological-educational perspective (Cappello, 2020). There can be no return to a world where electronic devices remain far from our daily lives (Lavanco, 2021). In the last two decades, sociologists have spoken about Interconnected World (Castells, 2009), Screen Society (Cashmore et al., 2018), Digi-land (Nowotny, 2021), and Technocene (Grossi, 2023). These are just some of the names used to describe our society, which seems to stop its hybridization of physical and virtual environments. One of the questions posed by psychologist Matteo Lancini (2020) is: "What is school for today if it leaves the world outside?"

The boys and girls often ask this question, allowing us to converse with them. Managing intergenerational conflict is a responsibility that we, as teachers and helping relationship professionals, are called to take on to find answers that include multiple points of view (Bellingreri, 2015). Therefore, the research question guiding this study is: Can smartphones and a social networking platform be used for educational purposes to create a co-constructive process of virtual communities of practice with students and teachers from different generations? This paper aims to answer this question by combining two seemingly separated worlds: the smartphone with social networking and the school with its teaching and learning processes. Starting from a methodological frame of reference, it will define what led some schools in Palermo and Braganza to use Instagram for teaching and learning, transforming a weakness into a new resource (Mannino, 2017).

The main objective of this work is to lay the foundations for a didactic approach that chooses to leave smartphones on in the classroom, taking advantage of the social networking platform that seems to bring adults and adolescents together the most: Instagram (Landi, 2019). Certainly, social networks were not created for the purpose of learning. However, like any other tool, in order to be used consciously and critically, it needs to be discovered in its educational potential (Cambi et al., 2013).

It is, therefore, important to identify the theories and practices that constitute an initial reference point for reasoning about the procedures that have given pedagogical value to using smartphones as educational gadgets and social networks as virtual learning environments. Trying to divert from what has been repeatedly said and thought about mobile technological devices and social network sites, let us see which studies have been concerned with including them directly and transversally in education.

One of the key aspects of contemporary educational theories on social media is suggested by Greenhow, who has repeatedly emphasized the importance of integrating these theories into formal educational contexts. Studies by Greenhow and colleagues (Greenhow et al., 2019a; Greenhow et al., 2019b; Greenhow et al., 2018; Greenhow & Askari, 2017; Greenhow & Gleason, 2012; Greenhow et al., 2011) have highlighted the importance of integrating educational theories into formal education. Recent analyses of the use of social media in education show the prevalence of some fundamental theories, such as participatory, constructivist, and social learning theories (Greenhow et al., 2018; Manca & Ranieri, 2016). For example, some of the most discussed

theoretical models in this research area include professional learning networks, communities of practice, and social capital theories (Daly et al., 2019). Other theories cited include integrating technology in teaching with the TPACK model (Mishra & Koehler, 2006) and, more historically, Bandura's (1977) social learning. Further empirical research exploring and challenging existing theories is needed to advance the field, as current technologies can innovate education by stimulating new interpretations and interacting with previous educational theories (Salomon & Perkins, 2005).

Since the 1980s, one of the methodologies that have best addressed this argument is Media Education (Rivoltella, 2020), a field of study that seems to have disappeared from the school debate. Some authors associated with it identify it as the process that allows individuals to achieve media literacy (Buckingham, 2019; Jankins, 2009; Grollo & Nardo, 2007; Falcinelli, 2003; Gravitz, 1998), which is useful today to juggle individuals toward the digital transition that current European programs hope for (Ranieri, 2022; Volpi, 2021). In an interaction strongly permeated by media content, it is still essential to understand how, why, and how fundamental it is to know how to use media to communicate. Any media education intervention aims to create a digital awareness capable of managing information, creating content, and developing critical and ethical thinking about digital tools (La Marca, 2016). For this reason, media education remains one of the methodologies that should be applied not only as a teaching strategy but also as an attitude for the wise use of virtual spaces.

Another reference methodology that, since the beginning of the 2000s, has attempted to outline paths similar to those proposed in this text is Net Learning. A publication edited by Davide Biolghini (2001) defines net learning as an operational field in which learning through and on the network can take place. In particular, the development of virtual communities of practice, related to the Wengerian paradigm (Wenger, 2011; 2002; 1998), is the most frequently used strategy for creating and sharing knowledge activated through networking.

In order to benefit from these first two methodologies, it is necessary to know how to choose suitable tools, which we can trace to the methodology called mobile learning. This field of research has struggled over the last fifteen years to be integrated into school decisions, probably because of its highly experimental nature. Mobile learning brings together everything that can be done didactically with mobile technological devices such as smartphones and tablets. If the latter, together with computers, are indispensable for distance learning (Mantegazza, 2020), the same cannot be said for face-to-face teaching, which in Italy has recently been banned by a directive of the Ministry of Education. On the contrary, proponents of mobile learning (Santoianni et al., 2022; Kearney et al., 2020; Ranieri & Pieri, 2016; El-Hussein & Cronje, 2010) state that several advantages point to mobile technological devices as preferred tools, including the ubiquity of learning, the promotion of personalization, the accessibility of resources and a more immersive experience through the use of technological devices, software, and applications.

To conclude our reflection on the theoretical-methodological frame of reference, we could now point to the Social Learning Network as the field of study that is most concerned with finding in social networking platforms the potential capability of transforming didactic processes with the latest generations of learners through new technologies (Yang & Chen, 2008). To give a definition here as well, by Social Learning Network, we can mean the methodology through which students, because of a socially constructed intelligence, can communicate with each other and with teachers interactively and continuously in a shared digital space (Huang et al., 2010). Elements such as

groups, chats, tweets, posts, reels, reactions, comments, hashtags, stories, and bookmarks can be used by teachers and students to structure collaborative (Castiglione, 2023), engaging and personalized learning activities that can be carried out precisely thanks to the characteristics of social networks.

2 Method

In reviewing the elements that led research to focus on the Alpha Generation, Lancini (2021), McCrindle, Ashley Fell (2022), and Jean M. Twenge (2023) describe them as the latest digital, social, global, mobile, and visual youth. Born in 2010, with a childhood during the pandemic, they have honed their digital skills by surfing the web, interacting with adults and peers through social media, and learning through screens. The use of digital platforms was crucial in order not to interrupt their learning activities. Back in the classroom, we asked them to put aside everything that had become useful during distance learning (Canfalonieri & Tiozzo, 2022). To avoid interrupting the awareness-raising process and losing the opportunity to continue educating them, the proposal to learn with Instagram is configured in the logic of continuity as an integrative didactic experience to continue with digital didactics closer to their interests and languages. Thus, emojis, reels, likes, reactions, posts, selfies, influencers, and captions become elements for experimenting with Instagrammable didactics (Newton & William, 2021), simultaneously based on school practices and values. It should be made clear that the idea of using an open social network such as Instagram (Ranieri & Manca, 2017) for educational purposes should not be understood as an attempt to teach participants to become creators or influencers, nor to produce content like a communication company, but to see such a platform as a digital resource where teaching and learning processes can be transformed according to pre-established times, spaces, methods and procedures. In this sense, thanks to the functionalities offered by Instagram, it is possible to upload, share, and interact with microlearning content (Buchem & Hemalmann, 2010; Hug, 2005), considering accounts as educational profiles where students and teachers extend the processes activated in the classroom and produce media portfolios. Furthermore, as a virtual environment, Instagram can develop participatory cultures and virtual communities based on shared domains, values, and practices.

A recent report by the Australian research agency McCrindle makes the following statement: 'For teachers observing the world of social media influencers, pop culture stars, and self-made millionaires, it is not that you have chosen the wrong profession, it is that society has chosen the wrong heroes (McCrindle, 2023). In order for teachers in this work to be understood as credible school and out-of-school reference points, they were not asked to emulate influencers such as Chiara Ferragni or Vincenzo Schettini but to find their way and communicative style within the experimentation in order to be seen by their students as coherent and at the same time closer to their generational codes and languages.

Although the value of social networks in educational research has been expressed, there are not enough studies on using Instagram as a platform to start a virtual learning community of teachers and students (Castiglione, 2024).

The choice of Instagram as the social network was supported by data from the global research institute DataReportal, which found widespread participation from both young and adult audiences (DataReportal – Global Digital Insights, 2023). According to this data, Instagram is currently the fourth most used social network globally, after Facebook, WhatsApp, and YouTube, with more than 1.5 billion registered users. Regarding research, the social network best meets the

criteria of multimedia content creation, development of engaging virtual communities, and ease of use. Indeed, Instagram stands out for allowing users to create and share digital artifacts intuitively and creatively (Carpenter et al., 2020). The platform offers a wide range of photo and video editing tools, allowing users to express their creativity and produce high-quality posts. In addition, Instagram encourages interaction through the comment and like feature, which encourages users to interact with each other and form an active virtual community (Newton & Williams, 2021). In addition to the project accounts, participants could follow other profiles related to their educational interests. This variety of content helps to make Instagram a dynamic social network with strong educational potential.

This qualitative study aimed to demonstrate the effectiveness of digital, social, global, mobile and visual didactics, as described by Generation Alpha, by adding smartphones and social networks to the traditional didactic set. A mixed methods approach was considered for this work's research. The choice is supported by studies that consider the digital space as an ideal environment for selecting elements useful for the descriptive study of multimedia content (Maretti & Fontanella, 2019). For the development of the virtual community, the methodology of action research (Lavanco & Novara, 2012), supported by netnography (Kozinets, 2010), was used for the descriptive analysis of the media pedagogical content that emerged. In defining the overall framework, the research was named Edu-social Algorithm, which was used to create the official project page and the related educational accounts. For the implementation, we started with an initial contextual analysis, together with the involvement of partner schools in the cities of Palermo and Braganza, selecting a total of eight project classes that followed a specific timetable (Figure 1), which included:

1. Teacher training: In this phase, in three training modules, the methodological model for the use of smartphones and Instagram was developed between the researcher and the teaching staff, jointly deciding on the methods, times, spaces, and evaluation criteria in Edu-social Algorithm;
2. Focus groups with students: In the second phase, the students were involved by presenting the action research project to them and collecting their opinions on using smartphones and Instagram for learning. The focus group was also useful to negotiate the netiquette of the project in order to promote participation and shared responsibility;
3. Development of the Edu-social Algorithm Virtual Community of Practices: Under the guidance of the researcher, the partner classes began to develop activities, projects, deliveries, and interactions with specific educational accounts that allowed the Edu-social Algorithm community to strengthen the domain, value, and practices that justify the use of smartphones and Instagram for learning and teaching. Six months after the start of the research project, the classes have acquired an autonomous method of teaching and learning.
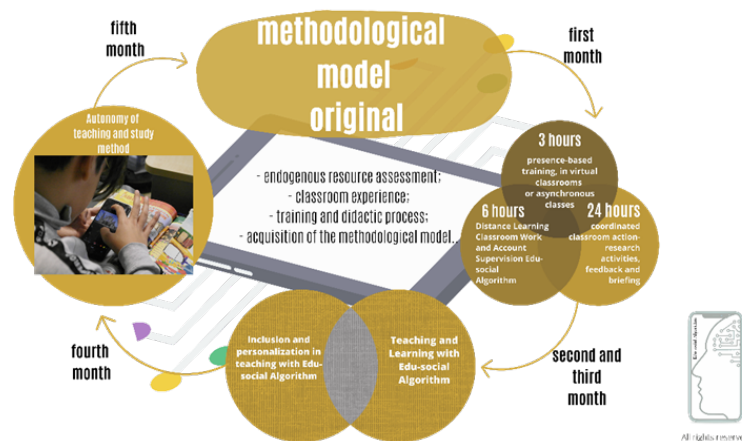

Figure 1 Chronoprogramme of the research-action Edu-social Algorithm

The participants in this study were 62 students, 68 female students, 13 male teachers, and 64 female teachers from six classes in the Municipality of Palermo (Italy) and two in the District of Braganza (Portugal), belonging to secondary schools, specifically from the third year. All the participants were selected based on an initial discussion with the respective head teachers of the four schools involved, who, in collaboration with the researcher, identified the classrooms to be included in the action research.

In the results, reference is made to some netnographic case studies drawn from the educational profiles of the aforementioned teachers and students, to illustrate the teaching practices related to the use of the above methodological model, and to demonstrate that it is possible to teach and learn with Instagram.

3 Findings

In the re-design of the learning environments and the re-modulation of the didactics, the researcher accompanied the teachers and students during the training and mentoring phase of the action research with the Edu-social Algorithm methodological model, transforming the classrooms into hybrid environments through the use of smartphones and the Instagram social network. For the supervision and collection of the digital artifacts produced by the participants, the role of the official page was crucial (Figure 2).
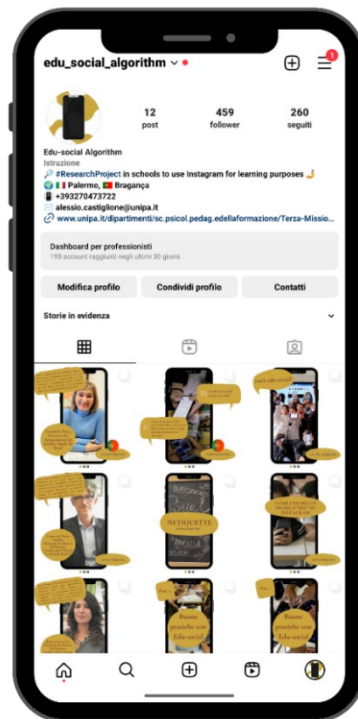

Figure 2 Official Instagram page of the Edu-social Algorithm project

It was decided to run the project with a public page to collect and monitor the processes initiated online. Creating the official "edu_social_algorithm" page on Instagram also made it possible to report on the research progress through posts, reels, and stories that made the implementation process transparent. In the following section, the page only added the educational profiles of students and teachers related to the research. This strategy allowed the edu-social algorithm to have a single reference address where anyone could find out about the research, but without having to personally add the participants, who had registered their educational accounts privately
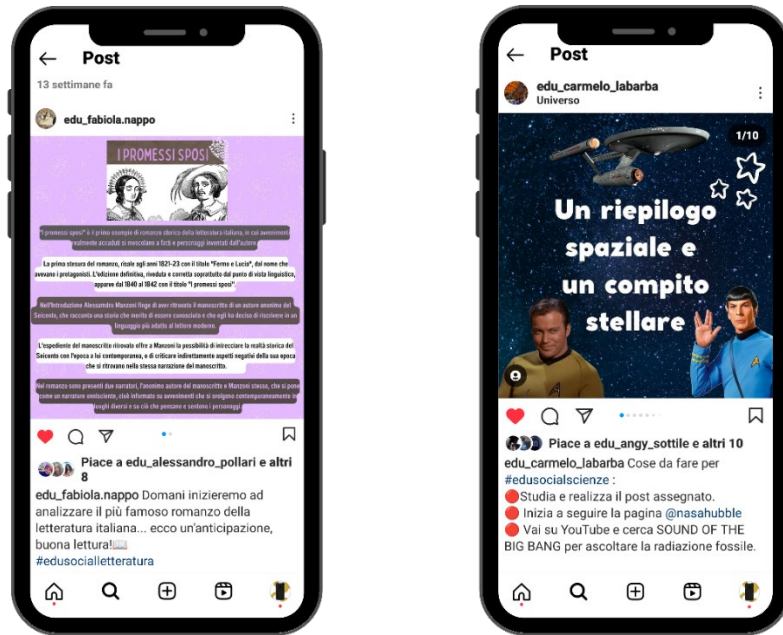
Figure 3 An example of a post to anticipate the topic to be covered in class
Figure 4 An example of a contribution to the topic covered in class

for the occasion in order to protect their privacy and their work. In addition, the edu-social students and teachers added the prefix 'edu_' to their Instagram account name as a domain for interaction so that they could recognize each other (Lavanco & Castiglione, 2023). To further protect the internal members of the edu-social algorithm community, the researcher monitored registrations that were made in error or did not follow the agreed action research directions.

Reviewing the edu-social posts created in the school year 2022-2023 by students and teachers included in the Action Research, we will show in the following images, what is meant by teaching (Figures 3-4-5-6) and studying (Figures 7-8-9) with Instagram.
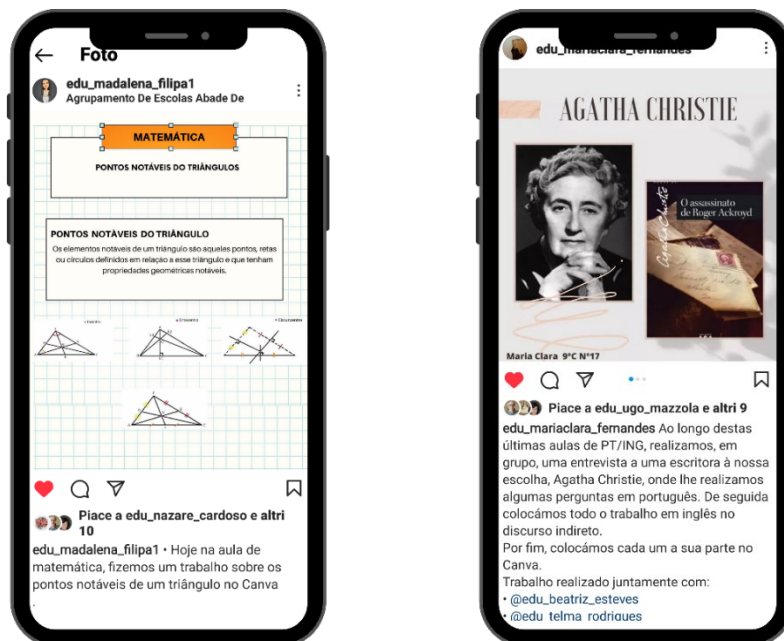

Figure 5 An example post to schematise the lesson
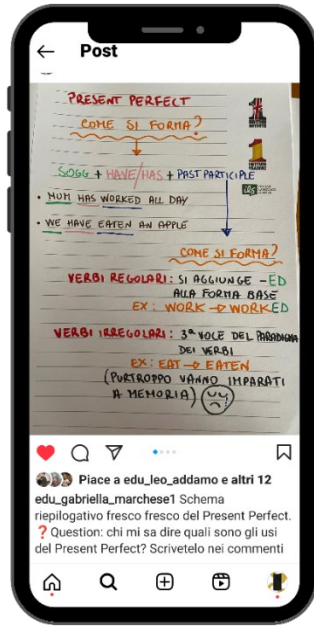**Figure 6** An example of a post in response to a metacognitive task

Figure 7 Example of a post outlining a geometry task
Figure 8 An example of a post to realize a literature task

Figure 9 An example post to implement an activity with augmented reality

These netnographic findings, selected according to the purpose employees, demonstrate how Instagram was used as an educational tool. Analyzing various facets of the conducted research is important to comprehend this fully. The initial concept of integrating Instagram into educational practices stemmed from the need to incorporate existing technology into education. Instagram's visual and interactive nature is well-suited for stimulating collaboration and student engagement. This is evidenced by its extensive enrollment over the years, with 130 students and 77 teachers participating in the Edu-social Algorithm methodological model.

The research showed that Instagram facilitated greater interaction and collaboration, as observed in the likes and comments each educational media received. Students and teachers actively

engaged with posts, reels, and stories to create a more engaging learning experience. This approach enlivened the educational process and paved the way for innovative approaches to interactive learning.

However, the research also identified several challenges. The most significant was maintaining privacy when using a publicly accessible social media application. Additionally, managing time spent on the platform was another critical aspect to reduce distractions.

From the teachers' perspective, training played a crucial role in their professional development. They have acquired essential skills to integrate social media into the educational curriculum effectively. They have learned to create relevant content and interact productively with students through the platform facilitated by supervision and mentoring provided by the researcher.

In terms of the impact on students, this novel learning mode enriched their education. They learned to use Instagram in an educational context and developed digital skills, such as communication and critical media analysis. As a result, each student achieved a promotion for the respective scholar year.

Finally, the students gained a deeper understanding of the educational value of social media. In addition to improving their digital competencies, they gained the ability to use these platforms more consciously, creatively, and critically.

4 Conclusion

With delegated parental consent, it is possible to legally enroll in most social networks from the age of 13 (Lavanco & Castiglione, 2023). Still, according to an Italian survey by the National Observatory of Adolescence Onlus in collaboration with Google, more than half of children already have a smartphone as early as nine. Of these, 30 percent would already have a profile on social networks. At the same time, between the ages of eleven and twelve, it is difficult for a young person not to have a personal mobile device and related social accounts (Rita, 2022). Considering these data, there needs to be more preparation for social and digital education of this last generation. Research between universities and schools, as was the case with the Edu-social Algorithm, made it possible to transfer new skills for professional development to teachers to be passed on to students who were about to make their debut at the age of thirteen in the virtual space of the social network Instagram, to bring out the didactic-pedagogical share of this platform and educate them in its conscious use. In recent years, many similar researches with WhatsApp, Twitter, and TikTok have found as a limitation precisely the lack of teacher training before the start of educational experiments with mobile devices and digital platforms (Dewi & Tarwiyah, 2022; Dasoo, 2022; Jerónimo & Martin, 2021; Newton & Williams, 2021; Ajani, 2021; Alella et al., 2020; Moodley, 2019). This work was decided to start with the co-construction of the methodological model shared first with teachers and then with students. Six months after the start of the project, more than 700 didactic posts similar to those indicated in the results have been created, and 603 accounts have been reached (of which 70 percent are Italian, 25 percent Portuguese, and 5 percent from other countries) who have learned about the research project and the results through the official social page. From a future perspective, by offering a proven and replicable methodological model, the Edu-social Algorithm could extend to other school contexts by spreading a pedagogical culture within social networks so that teaching, learning, and education can also be done with Instagram, starting from a single virtual community of reference.

Finally, an international research project such as Edu-social Algorithm explains how social

networks could be used in education. In terms of long-term replicability, their use as a large-scale teaching tool could connect teachers and students from all parts of the world through a community of shared virtual practices where everyone can share and interact with school materials. However, it is worth reiterating that including social networks in the classroom requires attention to teacher training, as they must be prepared to learn about Instagram and other social networks by grasping the pedagogical potential that can emerge from them. Consequently, we can transfer this knowledge to students if they are also wisely guided towards a healthier use of the environments they usually inhabit, without sufficient guides to guide them towards wiser practices. The research limitation may still lie in a techno-pessimistic attitude, unable to grasp the opportunities offered by methodologies such as mobile learning and social learning networks.

Lastly, the choice of Pope Francis Bergoglio, who in 2016 created the account Franciscus within the social network Instagram, could be considered exemplary, demonstrating how it is possible to amplify its work without distorting the importance of presence and encounter. In the same way, the school institution and its protagonists must understand social networks, another channel that does not replace but adds and reaches further possibilities.

5 Researchers' contribution rate statement

The author contributed to the study.

5.1 Conflict statement

The author declares no potential conflicts of interest.

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