

Dialogue Between Mobile Technology and Social Interaction Rituals: a Challenge in Today's School Context

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ABSTRACT

The use of mobile technologies is increasingly relevant inside and outside the school environment because their role in the teaching-learning process and the communicative possibilities they offer, especially in times of pandemics. However, it is essential to study the socio-affective implications of mobile technology during social interactions. Considering this framework, how can mobile technology dialogue with social interaction rituals in a school context? This article proposes an interdisciplinary view of the problem, based on the postulates of symbolic interactionism, the theory of natural pedagogy, the theory of relevance, and Collins' model of social interaction rituals. Based on the review, it can be pointed out that social and cultural changes that imply new socialization processes may reduce the intensity, naturalness, and effectiveness of interaction rituals, which could mean the modification or attenuation of the effects of such encounters; however, it is not possible to conclude on this matter, since it is a subject under development. Finally, it is proposed to approach it from an interdisciplinary perspective, and promote strategies for its use in schools, not only from an educational perspective but also from the point of view of the socio-affective development of children and adolescents.

Keywords: social interaction, mobile technology, interaction rituals, socio-affective development.

1. INTRODUCTION

The use of Information and Communication Technologies (ICT) is becoming increasingly relevant, both inside and outside the school environment, due, among other factors, to their role in the teaching-learning process and the communicative possibilities they offer in times of pandemic and confinement [1]. Given this scenario, educational policy has placed special emphasis on providing pedagogical tools and proposals that allow students to develop digital competencies and encourage their use and incorporation in the school context [2]. However, the implications in the socio-affective sphere of the presence of mobile technology, particularly smartphones, during social interactions, is an issue that has not yet been addressed significantly by educational policies. Given this scenario, the authors of this paper are interested in delving deeper into the subject by addressing in an interdisciplinary way different views, regarding social interactions and the possible implications in the

socio-affective development resulting from the presence of mobile technology in social interaction rituals.

Indeed, the use of mobile devices such as smartphones in the school context has become a subject of study in different disciplines, among which Educational Informatics stands out, which mainly addresses the advantages of the educational use of ICT and the didactic variations that characterize its application [3,4 5,6,7]. However, because of the transversality of the phenomenon in the Digital Age, its study has expanded from the educational to other currents of the Social Sciences: Anthropology, Sociology, and Psychology advancing "in new conceptualizations about the subject, identity, communities, environments and contemporary networks" [8].

The Digital Age or Digital Phase [9] is characterized by major cultural changes associated with the presence of ICTs, which can be observed in the way individuals relate, communicate, and interact. Levy [10] attributes these changes to the transforming conditions brought about by these technologies, both in individuals and in societies, which makes it impossible to understand them separately from society and culture.

Concerning these changes referred to the way of interacting, mediated by ICT and by mobile technology, it can be pointed out that they are founded on the intrinsic characteristics of this digital phase: "virtuality, connectivity, hypertextuality, interactivity, transparency, globality, convergence, immersion, random access, mobility, ubiquity and real-time" [11].

For that matter, social interaction, labor relations, information transmission, and knowledge acquisition, have undergone a change that forces us to question whether the paradigms that previously collaborated in the understanding of social approaches are still relevant [12], even more so in the context of the pandemic in which society currently finds itself, which has forced to make effective use of technologies to maintain communication with others, continue with educational processes and, at the same time, ensure the social distancing that the health authority recommends.

Before this scenario, the study of social interactions and, in particular, of interactions mediated by technologies or social networks, whether in daily life, work, and/or education, was approached from cultural models such as Cyberculture [13,9,10]

and Cyberpragmatics [14,15,16]. However, the current focus is mainly on the social effects that this phenomenon has on individuals.

Microsociology is the current area of sociology that studies social interaction on a small scale, everyday behaviors, and relationships between individuals. One of its exponents is Randall Collins, who addresses face-to-face social interactions and the interaction rituals that arise from them, distinguishing himself from other exponents, such as Durkheim [17] and Goffman [18], in that interaction rituals, in addition to being characterized by the common focus of attention of their participants, also foster a collective emotional effervescence and, therefore, promote the emergence of a common emotional state [19]. In this way, the social interaction rituals proposed by Collins may be modified due to the presence of the cellphone during face-to-face interactions, given that, on the one hand, the device may signify an interference in the effects of the ritual by affecting the quality of the interaction [20,21,22,23] or on the contrary act as a platform that stimulates the interaction [24] and, in this way, intensify the effects of interaction rituals. For this reason, social interactions in co-presence continue to be a relevant research topic, mainly concerning the socio-affective development of young people, since we understand interaction as a basic element of socialization and acquisition of social skills. Similarly, this phenomenon becomes more relevant in school contexts considered socializing spaces par excellence and where the presence of smartphones and other mobile technologies have acquired an important role given their importance in the learning and communication processes.

This paper purpose is to become a platform for reflection on the social interaction rituals among students in the presence of mobile technology in a school environment. In this context, the question arises: how can the presence of mobile technology dialogue with social interaction rituals in a school context? To answer this question at least preliminarily, the article proposes an interdisciplinary look at the problem, based on the postulates of different currents that refer to social interactions, mainly face-to-face, among them: Mead's [25] and Blumer's [26] Symbolic Interactionism which studies interactions from the interpretation of symbols and meanings that individuals give to such instances of socialization, as well as studies from the notion of communication raised by Rizo [27,28], the theory of Natural Pedagogy by Csibra & Gergely [29], the theory of relevance proposed by Wilson & Sperber [30], the cyberpragmatics of Yus [14,15,16] and as a theoretical basis the microsociological proposal called Ritual Model of Interaction by Collins [19].

2. EMPIRICAL BACKGROUND

Research in the area of social psychology refers to the importance of face-to-face interactions between boys and girls given the effect they have on behavioral regulation. According to Field [30] interpersonal relationships are social phenomena capable of regulating states of exaltation and arousal associated with different stimuli. The author points out that this phenomenon can be observed in behavioral, physiological, and biochemical synchrony throughout development and during relationships with the mother and peers. In turn, other studies point out that social interactions in their different expressions collaborate in social skills and emotional regulation. Tigrero, Garcés & Monteros [31] empirically demonstrate that the relationship between boys and girls in the school context is fundamental to acquiring social skills, regardless of the level of emotional intelligence. However,

if this is high, they can acquire the ability to relate permanently and harmoniously with the rest of the individuals.

Amendola, Spensieri, Guidetti & Cerutti, [32] have focused on emotional regulation and its relationship with digital technologies. The authors have linked emotional dysregulation with the presence of mobile technologies, whose results support the hypothesis that adolescents with greater emotional dysregulation are more likely to experience problematic use of new technologies. Following this line, recent studies have examined how people manage their affective states using digital technologies, such as smartphones, referring to the emergence of what is known as digital emotion regulation [33].

On the other hand, sociological and psychological literature has referred to the possible interventions in the social dynamics between people when using mobile technologies, which may have implications on the way they relate to each other. One of the communicative phenomena detected refers to what is called 'absence of presence', an act that implies being physically present, but having one's mind elsewhere, because of interaction in the presence of cellphones [34]. Recently, the concept of *technoference* has been introduced, defined as the daily interruptions that occur in interpersonal interactions product of the presence of mobile technology [35, 22], example of this, is the interaction between peers or in the family context.

Misra, Cheng, Genevie & Yuan [23] from a study in a naturalistic setting, demonstrate that conversations in the absence of mobile technology are considered significantly superior compared to those where such technology is present, regardless of age, ethnicity, and mood. Differences can be seen in the degrees of empathy reported by participants, where the highest levels were reported in those who had conversations without the presence of a mobile device. The authors argue that the implications for the nature of social life in mobile technology environments are still debated.

Other studies have shown that the consequences of excessive use of mobile technology, the internet, and social networks can mean impairment in cognitive functions, mood/affective states and social skills [36, 37], causing, in addition, dependence and addiction [38,39,40].

Likewise, social interaction, the transmission of information, and the acquisition of knowledge have undergone a change that forces us to question whether the paradigms that previously collaborated in the understanding of social approaches are still relevant [12], even more so in the context of the pandemic in which both society and school are currently found [41]. Given the above, an interdisciplinary theoretical review is presented to reflect on the construction of a dialogic relationship between mobile technology and social interactions in the current school context.

3. THEORETICAL BACKGROUND

Social interaction, a communicative phenomenon in constant dynamism, is the subject of study in different disciplines, including Sociology and Social Psychology. Microsociology, a theoretical approach that allows articulating both currents, studies social interaction on a small scale, in particular everyday behaviors, and face-to-face relationships between individuals [28].

Rizo [27] from the area of communication, proposes an approach to the psychological and sociological concept of interaction, points out that according to Symbolic Interactionism "the individual is both subject and object of communication, while personality is formed in the process of socialization by the reciprocal action of objective and subjective elements in communication". For this reason, the first approach proposes social interaction as a communicative phenomenon that makes it possible to establish forms of behavior and social relations among individuals, creating symbols and meanings that represent the group [25]. In this scenario, the approaches of Symbolic Interactionism [26] in general and Microsociology in particular, allow an approach from the currents of thought.

Symbolic Interactionism is defined as a psychosocial theoretical current [42] that seeks fundamentally to glimpse the role played by social interaction in the development of society, personality, and culture [27]. "Interaction is the field where social relations are actualized and reproduced, it also constitutes a space of play where intervention and change can be introduced and where, at each instant, the social bond is founded anew"[43]. Mead [26] proposes two levels or approaches to social interaction: symbolic interaction and non-symbolic interaction. In the first, and the object of Mead's study, individuals are capable of recognizing, interpreting, and giving meaning to the gestures of the participants and acting from that consideration.

In relation to this proposal, Rizo [27] points out that the individual is both subject and object of the communicative process since the personality is formed in the process of socialization in this reciprocal action, because of which, the feedback that implies the act of interaction from the proposal of symbolic interactionism requires a degree of attention from the other that allows the reading and interpretation of the subject and thus the socialization process is developed. In this sense, the Rites of Interaction proposed by Collins [19] from microsociology configure an interactional context characterized by the reciprocal action generated by the participants of the interaction through the common focus of attention and the emotional states they share.

According to Collins, "a ritual is a mechanism that focuses joint emotion and attention, generating a temporally shared reality" (p.21), a reality that is in constant flux and contextualization. The author points out that other sociologists, including Durkheim and Goffman, had already approached the term "Ritual" in a similar way to him, however, they had done so from another theoretical tradition and in another intellectual epoch. However, Collins expresses the need to be able to defend his notion to apply it to the problems of today's society. Collins proposed the model of Rites of Social Interaction is based on empirical research in microsociology, and on verbal and nonverbal interaction and the sociology of emotions. In his proposal, he identifies types of rituals which are related to their effects, among which are: achieved rituals, formal rituals, natural rituals, failed rituals, empty rituals, and forced rituals.

The essence of the interaction ritual presented by Collins is characterized by situations that emerge in the interaction, among them: focusing on coincident attention and emotions that enter into reciprocal consonance. These "ingredients", as the author calls them, achieve different levels of intensity which implies different degrees in their effects, which are group solidarity, symbolism, emotional energy (EE) and the feeling or guidelines of morality. Group solidarity is related to the feeling of membership or belonging to the group that arises from the interaction rites achieved. Symbolism refers to the creation of

symbols or emblems, such as icons, words, and gestures, associated with the group. The individual emotional state (ES) is the feeling of confidence, contentment, strength, enthusiasm, and initiative for action on the part of the participants. Finally, the feeling of morality that implies the feeling of doing the right thing by respecting and defending the signs that represent the group.

Considering Collins' explanation of the social interaction ritual model, it is possible to understand the author's view of social encounters, which he places in a context of co-presence and different shared states, following the sociological tradition: "Small-scale interaction, here-and-now, and face-to-face is the place where the action and the scenario of social actors take place" [19].

4. SOCIAL INTERACTIONS AND SOCIO-AFFECTIVE LEARNING

Socio-affective development begins to develop from an early age, particularly from the attachment with the caregiver during face-to-face interaction, generating affective bonds that determine the future relationships and social skills of the individual [44]. This process subsequently continues in the interaction with family members and the closest environment and finally, with peers and friends. Thus, during the first years of life, children learn, from interactions with others, to manifest and regulate their emotions, to perceive others, and respond to them [45].

For Ortiz, López, Fuentes & Etxebarria [46], the social and affective entails an evolutionary development where individuals within a socialization context incorporate what they live and relate to others, thus developing the ability to form affective bonds, learn other customs, assume roles and acquire norms and values. Considering this context, the school represents the proper place for socio-affective development, social skills, interactions, relationships, and bonds, thus becoming a determining factor in the socialization process of children and adolescents [47].

Sartori & López [48] consider that social skills allow the execution of learned behaviors, which can be deployed in interpersonal interactions and relationships, thus individuals are able to respond effectively to social demands. Likewise, Caballo [49] expresses that the way social skills are constituted, allows the individual to develop both individually and interpersonally, since they can express in a contextualized manner, their emotions, attitudes, and opinions, among others, thus enabling the resolution of problems of daily life.

An adolescent with a broad repertoire of social skills will be able to understand and control his emotions, and those of the people around him, thus contributing to the strengthening of his interpersonal relationships and successful adaptation in the face of the demands of his context [48].

According to Mayer & Salovey's emotional intelligence mode [50], emotional development is "the ability to perceive, value and express emotions accurately; the ability to understand emotions and emotional knowledge; and the ability to regulate emotions promoting emotional and intellectual growth" [51]. For this reason, the school can become a favorable space for the socio-affective learning process of children and adolescents, since through the interactions generated there, not only social skills are strengthened and bonds are created between the different

educational actors, but also individual and collective emotional regulation is fostered.

The Emotional Intelligence (EI) Model, developed by Mayer & Salovey [50], is characterized by proposing a general concept of emotional intelligence, referring to emotions, and identifying specific mental skills related to EI. The mental skills targeted by the model are the following: abstract, verbal, and analytical thinking skills; mechanical, visuospatial, and synthetic skills; and practical and social skills.

According to the model, Emotional Regulation (ER) corresponds to a dimension of emotional intelligence and is characterized by the ability to attend to feelings, positive or negative, and reflect on them, thus the individual can discard or take advantage of the information that accompanies these feelings or emotions according to their usefulness. In turn, ER provides the tools to manage one's own emotions and those of others, so that individuals can contain negative emotions and expand positive ones: "This ability would reach the emotional processes of greater complexity, that is, the conscious regulation of emotions to achieve emotional and intellectual growth" [51].

Social interactions can be pointed out as mechanisms through which individuals are able to develop and/or strengthen both social and affective aspects, in which they can understand and assimilate the learning that interaction and socialization with other individuals provide them. Likewise, the school is established as the place that promotes and favors such encounters, in which it is not only possible to establish relationships, strengthen social skills and channel the work of emotions, but also to situate learning and the formative process in a given socio-cultural context. Therefore, it is essential to ask not only about the effects that the mediation of mobile technologies has on current social interactions but also about how they can dialogue to favor their relationships and thus their learning processes.

It is known that children acquire much of their knowledge and cognitive skills through their interaction with others and through collaborative processes, which Vygotsky points out, in the sociocultural theory of development and learning, "zone of proximal development", which is defined as: "the distance between the actual level of development, determined by the ability to independently solve a problem, and the level of potential development, determined through the resolution of a problem under the guidance of an adult or in collaboration with another more capable partner" [52].

Considering Vygotsky's proposal, learning activates mental processes that arise during social interaction, which is mediated by language and situated in specific contexts. These processes, which are the product of interactions with others, are internalized during social learning and finally become modes of self-regulation. In this sense, social interaction not only collaborates with the development of social cognitive skills but also psychological ones.

The Natural *Pedagogy* Theory postulates that communication between individuals corresponds to an evolutionary adaptation of human beings and is constituted as a mechanism for the transmission of cultural knowledge [29]. It is for this reason that Natural Pedagogy is considered an exclusive attribute of human beings since it aims at social learning through communication that can be extrapolated to all cultures.

In both theories, regardless of their differences, human interaction is the main learning mechanism, both social, cultural, and affective. For this reason, the current focus of attention should be on building a dialogue between mobile technology, as the main device of the current communication phenomenon, and face-to-face social interactions.

5. DISCUSSION

The ritual model of social interaction or of common focus and emotional consonance, as Collins [19] calls it, is essentially a bodily process, given that the first step of the process is the meeting of bodies in the same place. Although the author refers to the lack of empirical research that addresses the rite of interaction in non-face-to-face contexts, he ventures to suggest that without co-presence it is difficult to express group participation and to reaffirm the identity of the participants as members of the group. Collins points out that, in this scenario, the experiential micro-details that are manifested through immediate visual signs are missing, which implies unsatisfactory rituals.

In turn, the author notes that other forms of communication, such as telephone, video calls, or the internet, can provide some sense of ritual participation, however, the level of intensity could be lower compared to face-to-face encounters. For example: when receiving and reading a text message or email, the focus of attention with the interlocutor, according to Collins, is relative, with low intensity, mainly because such messages lack paralinguistic signals that allow the development of focused, shared, and synchronous attention. Even when the speed of response is practically immediate, it is difficult to accumulate intense feelings of solidarity or for a symbol to be charged with group significance. The purpose of comparing face-to-face social interactions with non-face-to-face ones is basically to convey the importance of face-to-face interaction in the intensity with which interaction rituals unfold, since bodily presence, according to the author, makes it easier for the interactants to capture each other's signals and bodily expressions, share rhythms and reciprocal emotions arise.

The Relevance Theory, an ostensive-inferential model of human communication [14], seeks to explain the process of linguistic communication from the function that the human cognitive system exercises, detecting the most relevant aspects within the communicative process, in order to acquire new knowledge of the world, admitting beforehand that what the interlocutor says is relevant. Likewise, this theory proposes that an utterance is relevant the greater its cognitive or contextual effect and the lesser its processing effort [30]. However, it is understood that this selection process also entails a loss of information, which can affect both the message and its interpretation.

Communication between individuals involves not only the intention to inform and communicate something but also the generation of inferences that provide meaning to that message [14]. A key concept of the theory of relevance is the so-called mutual cognitive environment, which is constituted by certain aspects of the interactants' environment and their own mental environment, i.e., the cognitive environment is all those individuals know and all that they can know. Pragmatics, in the face of this phenomenon, points out that such assumptions are manifest for the interlocutors and in turn, are shared by them, which implies that the context where they interact is not static but dynamic [16]. However, with the presence of technology and

social networks, it is called into question and is approached from cyberpragmatics, which states that the identity of the interactants and their environments are affected by the interaction through the network. However, this situation does not imply that virtual communication is defective, given the multiple strategies that arise to make up for these contextual shortcomings [15].

"Undoubtedly, the most common (and contextually more informative) form of communication is that which human beings establish in situations of physical co-presence, that is, face-to-face. However, the inferential operations to obtain an optimal interpretation of utterances do not vary substantially in other contexts that are less dense in their informative capacity, as occurs, for example, in virtual environments" [15]. The author suggests that one of the reasons why individuals are motivated by the practice of virtual interaction is the possibility of not revealing their identity and of embodying multiple personalities, thus favoring the expression of feelings and emotions. However, according to Collins' model, this situation would hinder mutual and fluid consonance.

Therefore, and concerning the question posed, how can the presence of mobile technology dialogue with the rituals of social interaction in a school context? It can be inferred that, according to Collins' Social Interaction Rites model, the importance of face-to-face social interactions, mainly among adolescents, lies in the emotional and bodily effervescence that implies the generation of common focuses of attention and shared emotional states among the participants of an interaction rite and the short- or long-term effects that this implies, collaborating in the development of social skills and emotional regulation. However, as a result of the presence of mobile technology during social interaction rituals, the time effects of a deeper and more sincere interaction may be affected since, according to Collins' model, physical co-presence, mutual attention and the emotions that emerge within a context of rhythmic consonance are fundamental to achieve effective and long-lasting responses. In this sense, the deployment of the interaction ritual becomes difficult, since attention and emotional consonance would not be synchronous or spontaneous, considering the time lag that exists in virtual interaction. Therefore, it can be pointed out that social and cultural changes that imply new socialization processes may reduce the intensity, naturalness, and effectiveness of interaction rituals, which could mean the modification, attenuation or even annulment of the effects of such encounters, affecting the socio-affective development of children and adolescents.

For this reason, to build a dialogic relationship between social interaction rituals and mobile technology, it is essential to approach the subject from an interdisciplinary perspective, reflect on the presence of mobile technology in school socialization scenarios and promote strategies for its use, not only from a didactic perspective, but also from the point of view of the socio-affective development of children and adolescents.

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