Social regulation and orientation of access trajectories to social networks amongst Cameroonian adolescents

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Abstract. The objective of this research is to establish a connection between social regulation mechanisms and the trajectory of access to social networks among Cameroonian adolescents. The study explores the various normative indications that influence social media users. It isevident that the normative and regulatory framework for accessing social networks and the internet, in general, is not sufficiently coercive and dissuasive to encourage appropriate behavior among young people in cyberspace. Strengthening adolescent security should involve stricter behavioral control, both autonomously and in negotiation with public authorities.

Keywords. Social regulation; Social networks; Cameroonian adolescents.

JEL. A10; E59; N16.

1. Introduction

In a global context marked by the digital transformation, Cameroon has undertaken major projects in institutional, regulatory, infrastructural, and security areas that are expected to lead to emergence by 2035. This was stated by the Cameroonian Prime Minister in the Digital Cameroon Strategic Plan (2020). Indeed, the Cameroonian government has established institutions such as the Telecommunications Regulatory Agency (ART), the Ministry of Posts and Telecommunications (MINPOSTEL), and the National Agency for Information and Communication Technologies (ANTIC) in order to regulate the telecommunications sector. These institutions have respective missions of promoting Information and Communication Technologies (ICT), raising awareness and preventing cybercrime-related abuses, regulating content, and regulating ideology to protect the integrity and dignity of individuals, especially adolescents.

However, there is a regular occurrence of information and behavioral deviations on social media, especially among minors. The state, in its promotion of the digital sphere, seems to have not anticipated the guidance of minors' conduct in the regulatory texts. In other words, there is a lack of provisions for guiding the behavior of children and adolescents in this information realm. According to Kohli (1986), the state plays a major role in standardizing individuals' life paths. Through MINPOSTEL, the state must

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prescribe and establish behavioral norms that it expects from minors in the cyberspace. Similarly, ANTIC has a role in content regulation to clean up the cyberspace. Although adolescents can self-regulate their behavior in the digital environment according to their subjective norms, there is still a need for measures to be promoted at the political, individual, and community levels. The present research focuses on the following question: Is there a significant link between social regulation and the guidance of adolescents' access trajectories to social media?

This research is conducted in collaboration with MINPOSTEL, ANTIC, and adolescents in the school environment. The objective of this research is to construct norms for guiding behavior based on evaluation and diagnosis. It aims to reframe the behavior of adolescents who are constantly in contact with social media. Social media platforms have now become an integral part of adolescents' daily lives. According to a survey from the website

http://www.ipso.fr/communiquer/2015-04-07, 78% of adolescents between the ages of 13-19 are registered on Facebook, and access to social media is facilitated by the ubiquity of devices, especially smartphones, and the decrease in mobile phone costs.

Adolescents engage in this space with even greater enthusiasm because the applications offered by these social media platforms meet their concerns and needs for entertainment, socialization, and information search. Okene (2013) pointed out that the imperialism of new technological inventions carries values and behavioral models from a more fantastical universe than experienced, leaving a lasting mark on the behavioral patterns of young people who are eager for imitation and role models. These factors significantly affect family dynamics, social relationships, and make media education an urgent practice, concluded the author.

2. Problem statement

The general observation is that social media, which should help in mediating social connections, learning, and leisure activities, often becomes a space for informational and behavioral depravity. Harmful content circulates on these social media platforms, affecting children and adolescents. This content includes child pornography, pedophilia, cyber blackmail, video bullying or aggression, cyber-bullying, indecent exposure, identity theft, disinformation, and many other negative influences. Some adolescents may be perpetrators or actors involved in creating such content, but the majority of them are victims who find these harmful experiences unbearable.

Multiple efforts have been made by the institutions responsible for regulating communication in Cameroon to clean up the Cameroonian cyberspace. Specifically, the government has been involved in the development of regulatory frameworks (laws) and institutional mechanisms (MINPOSTEL, ANTIC), which serve as the operational arms of the state in regulation, control, and combating cybercrime. These measures have been supplemented by the development of a government strategy for the development of the digital economy and specific actions, including the establishment of surveillance networks and the sensitization of youth through ICT camps and mass campaigns. Despite all these institutional, legal, regulatory, and technical measures, the effectiveness of regulation in the

Cameroonian cyberspace is not evident. There is a gap between what is planned and what is seen on social media.

3. Explanatory paradigms of the problem

Epinay (2005) argues that for the social balance of individuals, each society must propose curriculum models constructed and offered to individuals as organizing principles for the course of their lives. These life trajectories, which are social paths, need to be planned and organized according to the age of the population. Similarly, Kohli (1986) already spoke of the standardization of life paths and postulated the institutionalization of life courses. These are specific stages derived from chronological age. According to him, life trajectories should highlight a set of rules that organize the main dimensions of life in a society according to the historical context. Life trajectories thus constitute a social script (Gaudet, 2013). They are formal or informal norms that govern ways of being and acting at certain ages in life. According to them, individuals' activity is guided by repertoires of knowledge that provide useful means for interpreting contexts and taking action while cultivating collective memory. Weik (1995) argues that life trajectories account for events experienced in present contexts as well as retrospectively and anticipatively.

As a regulatory entity, the state must plan and guide the conduct of young people. It thereby contributes to the construction of the social identity of young Cameroonian internet users. In the absence of these life trajectories, transformations can be observed in the life paths followed by individuals. Thus, a less flexible trajectory leads to a sense of insecurity and greater vulnerability, which results in demands for institutional support. Conversely, greater predictability of paths promotes biographical planning and provides individuals with a certain serenity about their future. Ajzen (1991), defining the links between beliefs, attitudes, norms, intentions, and behaviors of individuals, explains that a person's attitude is determined by their behavioral intention. This intention, in turn, is determined by the person's attitude and their subjective norms related to the behavior in question. In the extension of the Theory of Reasoned Action, the author postulates that human behavior, to be effective, must be decided and planned. Thus, behavioral intentions translate into behavior when individuals know that social norms can tolerate their deviations. In other words, adolescents present on social media are predisposed to adopt deviant behavior. They are driven by their multiple interactions that foster this aspect of behavior. However, depending on the degree of coercion of the law, its existence or non-existence, its enforcement or lack thereof, in short, social control, they are led to act or abstain.

Reynaud (2003) proposes a conception that focuses on the social processes of rule production and the resulting collective action. The core of the Theory of Social Regulation (TRS) is the production of rules and regulations. This approach acknowledges that the actors responsible for regulation are capable of creating rules and consenting to them, demonstrating regulatory initiative. According to the author, three types of regulation characterize the functioning of societies: control regulation, autonomous regulation, and joint or negotiated regulation. Control regulation refers to regulatory actions related to hierarchical relationships, aiming to establish a certain effective social order. They are developed to enforce a set of social obligations. As for autonomous regulation, it means that the social actor asserts their capacity to

produce their own rules of action or their willingness to co-manage a system. Finally, negotiated regulation, as understood by Bastard (2013), refers to any regulation that results from multiple legitimacies and is constructed through social exchanges, negotiated interactions, and compromises between actors. It arises from the project of a society in which opinions, representations, and decisions are formed through social interactions.

The phenomenon of social regulation explains that, on the one hand, regulators must create trajectories of access to social networks for minors. These orientations must be implemented through laws, strategic plans, educational policies, and content moderation mechanisms. On the other hand, internet users have freedom in planning their own conduct by employing self-regulation strategies in cognitive, affective, and behavioral aspects. Lastly, regulators and those being regulated can negotiate the meaning of their interaction on social networks through exchanges and compromises, as is the case in ICT camps. Thus, the absence of access trajectories to content on social networks forms the foundation for any intention driving adolescents towards inappropriate use of social networks.

4. Hypotheses and research objectives

Referring to Reynaud's theorization (2003), which posits that the core of the Theory of Social Regulation (TRS) is the production of rules and regulations, we have formulated the following hypothesis: There is a link between social regulation and the orientation of access trajectories to social networks among adolescents. In line with this author's theorization, we have derived three specific research hypotheses. We expect that control regulation has an effect on the orientation of access trajectories to social networks among adolescents (HR1); that autonomous regulation has an effect on the orientation of access trajectories to social networks among adolescents (HR2); and that negotiated regulation has an effect on the orientation of access trajectories to social networks among adolescents (HR3).

Based on this approach, we aim to demonstrate in this research that social regulation can predispose adolescents to channel their behavior in order to avoid certain informational and behavioral deviations on social networks.

5. Method
5.1. Participants, sampling, and data collection

The sample for this study consisted of 409 participants. 314 participants were selected from the Bilingual High School of Deido in the city of Douala, and 95 participants were selected from MINPOSTEL. Regarding the Bilingual High School of Deido, the participants were distributed as follows: 80 students in their final year, 90 students in their first year, 45 students in their second year, and 99 students in their third year. For MINPOSTEL, the participants were distributed as follows: 31 participants from the department responsible for postal and telecommunication regulations, 34 participants from the department responsible for network and information system security, and 30 participants from the department responsible for infrastructure and networks. All participants were randomly interviewed in their workplaces for those working at MINPOSTEL, and in their classrooms for the students. They completed the self-administered questionnaire and returned it to the interviewer.

5.2. Ethical considerations

Potential participants in the study were verbally informed in advance about the objective of the study, the confidential and voluntary nature of their participation, and the possibility of withdrawing from the study at any time. Subsequently, they were provided with an informed consent form, which they had to read and sign if they agreed to participate in the study.

5.3. Data analysis

In this study, we conducted thematic content analysis, correlation analysis, and confirmatory factor analysis of the relationships between variables.

5.4. Content analysis

To explore the orientation of access trajectories to social networks through different ideological and individual regulations, we conducted thematic content analysis following Bardin (2011). The analysis grid for the interview data focused on the following points: Theme 1: control regulation, Theme 2: autonomous regulation, and Theme 3: negotiated regulation. Themes 1 and 3 were evaluated in the MINPOSTEL population to assess the control measures implemented for guiding behavior on social networks, while Theme 2 was evaluated among adolescents to understand their cognitive and behavioral capacities in relation to the information received on social networks. This analysis is a preliminary step for correlation analysis as it will allow us to corroborate or refute the initial hypotheses.

5.5. Correlation analysis

To establish the link or influence between variables and verify our results, we conducted a correlation analysis between the different variables of the study (CR, AR, NR, and TARS). This was done using the Pearson correlation coefficient (r) and the Spearman correlation coefficient (ρ) in SPSS 23. The sample correlation coefficient, represented by r or rxy, is the value expressing the strength of the relationship between two variables.

5.6. Confirmatory factor analysis of relationships between variables

To validate the significant factorial links of the variable system highlighted in the postulated hypotheses, based on the adjustment indices used (Pearson correlation and Spearman correlation), we establish a structure of the main factors of access trajectories to social networks, specifying each modality.

6. Results

6.1. Results of thematic content analysis

The results of this study are presented based on the three themes of study: control regulation, autonomous regulation, and negotiated regulation.

Regulators from MINPOSTEL state in their various speeches that control regulation is present, although it has some flaws. Regulation is fundamental for empowering young people to adopt responsible behaviors regarding the use of social networks. MINPOSTEL, the main body of ideological regulation, takes actions to control the cyberspace. It is observed that control regulation is indeed present. The interviews conducted with MINPOSTEL personnel on

the modality of control regulation show that a set of legal and regulatory measures have been put in place by the state to regulate social networks. The indicators of this variable are oriented as follows: (Aa+) + (Ab±) + (Ac-) + (Ad-). The elements related to control regulation demonstrate that the regulatory and legal mechanisms highlighted by the regulators are present.

Regulators from MINPOSTEL indicate that although a dialogue mechanism for ICT named "Camps TIC" exists, it is almost non-existent, and negotiated regulation has flaws. Regarding the frequency of interaction between MINPOSTEL and adolescents, meetings occur only once a year. As for the level of effectiveness of regulation, it is low. Thus, negotiated regulation includes the dialogue mechanism for adolescents, the frequency of interaction, and the level of negotiation effectiveness. The goal here is to create spaces for exchange, education, and information in synergy with adolescents to inform them and engage in discussions so that they feel involved and committed to individual responsibility regarding digital use. This should be done regularly and consistently. Consequently, the indicators of this variable are oriented as follows: (Ba±) + (Bb±) + (Bc±). These elements demonstrate the existence of negotiation. Furthermore, the indicators related to the learned trajectories in the use of social networks are as follows: (Iyes) + (IIyes) + (IIIyes) + (IVyes).

These indicators prove that false information, verbal aggression, shocking images, and the sharing of official documents are common occurrences on social networks.

6.2. Results of correlations between variables

Table 1. *Analysis of respondent identification (MINPOSTEL) regarding gender, age, length of employment, type of staff training, ownership of an Android mobile phone, social networks used, socio-professional category, and job-related responsibilities*

Crossed table Gender × Age						
		Age				Total
		27yrs-31yrs	31yrs-35yrs	35yrs-45yrs	45yrs-60yrs	
Gender	Masculine	20	21	26	10	77
	Feminine	1	13	4	0	18
Total		21	34	30	10	95

Work Seniority					
Modality		Frequency	Percentage	Cumulated percentage	
Validated	1-5 yrs	47	49,5	49,5	
	5-10yrs	18	18,9	68,4	
	10-15yrs	17	17,9	86,3	
	15-20yrs	7	7,4	93,7	
	20-25yrs	6	6,3	100,0	
	Total	95	100,0		

Table of possession of an Android telephone * Social network utilized						
		Social network utilized				Total
		WhatsApp	Facebook	Twitter	Instagram	
Possession of Android telephone	Yes	47	36	6	6	95
Total		47	36	6	6	95

Catégorie socioprofessionnelle				
Modality		Frequency	Percentage	Cumulated percentage
Validated	CEO	1	1,1	1,1
	D CEO	2	2,1	3,2
	Staff	92	96,8	100,0
	Total	95	100,0	

Attribution based on function occupied				
Validated	Officer in charge of ICT regulation	42	44,2	44,2

Network and infrastructures officer	15	15,8	60,0
Network Security officer	38	40,0	100,0
Total	95	100,0	

It appears that there are more men working in the departments where we conducted our surveys. There are 77 men and 18 women. 26 participants are between the ages of 35 and 45, 21 are between 31 and 35, 20 are between 27 and 31, and 10 are between 45 and 60. It should be noted that 49.5% have 1 to 5 years of seniority, 18.9% have 5 to 10 years, 17.9% have 10 to 15 years, 7.4% have 15 to 20 years, and 6.3% have 20 to 25 years. All participants own an Android smartphone. Among all these participants, 96.84% are executives, 1.1% are general directors, and 2.1% are assistant directors. 44.21% are responsible for post and telecommunications regulations, 40% are in the infrastructure and network department, and 15.79% are responsible for social network and information system security.

Table 2. *Analysis of respondent identification (adolescents) related to gender, age group, ownership of an Android mobile phone, preference for a social network, and activities conducted on social networks*

Table of Gender * Age group

Modality		Age group					
		Less than 15yrs	15-17yrs	17-19yrs	19-21yrs	21yrs & more	Total
Gender	Masculine	1	110	45	1	6	163
	Feminine	3	125	16	7	0	151
Total		4	235	61	8	6	314

Cross table SMART Phone possession *social network Preferency

Modality		Social network preference			
		WhatsApp	Instagram	Facebook	Total
Possession of Android Telephone	Yes	122	34	101	257
	No	33	0	24	57
Total		155	34	125	314

Table of Activity carried out on Social network * Gender

Modality		Gender		
		Masculine	Feminine	Total
	Publication of pictures	28	35	63
	Conversation between friends	54	47	101
Activities carried out on social media	Video and voice calls	16	3	19
	Follow up news	22	16	38
	Being in study group	21	33	54
	Observing statuts	22	17	39
Total		163	151	314

Analysis of the identification of respondents (adolescents) relating to gender shows that 163 are male and 151 are female. It clearly appears that the majority of students are between 15 and 17 years old (n=235); 4 are under 15; 61 are located between 17 and 19 years old, 8 between 19 and 21 years old, 6 between 21 years old and over. 257 participants have an Android mobile phone while 57 do not have one but still remain connected to social networks through their parents' phones or in cyberspaces. 155 have a preference for WhatsApp, 125 for Facebook and 34 are on Instagram. Of the study participants, 101 held conversations with friends, 63 post photographs, 54 are in study groups, 39 view statuses, 38 follow the news and 19 make voice calls.

Table 3. *Results of the analysis of the correlation between the variables of the research hypotheses*

Symmetric measurement			
RH₁	Crossings (RC×TARS)		**Decision**
	Value of test	Approximed Signification (r)	
Pearson's r	−0,82	0,000	Ho rejected
Number of observations validated	95		
Symmetric measurements			
RH₂	Crossings (RA×TARS)		**Decision**
	Test value	Approximated Signfication (ρ)	
Spearman's ρ	-0,17	0,000	Ho rejected
Numbre of observations validated	314		
Symmetric measurements			
RH₃	Crossings (RN×TARS)		**Decision**
	Test value	Approximed Signification (ρ)	
Spearman's ρ	-0,52	0,000	Ho rejected
Number of observations validated	409		

In addition to the results of the content analysis based on the participants' speeches, tests of Pearson's correlation coefficient (r) and Spearman's correlation coefficient (ρ) were conducted to determine the relationship between each induced modality and the orientation of trajectories in accessing social networks among adolescents. Thus, Table 3 presents the different correlations between the orientation of trajectories in accessing social networks among adolescents and social regulation through its various modalities.

The results sufficiently demonstrate that there is a strong inverse relationship between the variables considered in the first research hypothesis, as indicated by a Pearson correlation coefficient (r) of -0.82, with an approximate significance level (two-tailed) of p = 0.000 (p = probability of committing a type I error). We can infer with less than a 5% chance of error that there is a highly significant and inversely proportional relationship between control regulation and the orientation of trajectories in accessing social networks among adolescents.

Furthermore, there is a weak inverse relationship between the variables considered in the second research hypothesis, with a Spearman correlation coefficient (ρ) of -0.17 and an approximate significance level (two-tailed) of p = 0.000. We can infer with less than a 5% chance of error that there is a weak significant and inversely proportional relationship between autonomous regulation and the orientation of trajectories in accessing social networks among adolescents.

Finally, for the third research hypothesis, there is a weak inverse relationship between the variables considered, with a Spearman correlation coefficient (ρ) of -0.52 and an approximate significance level (two-tailed) of p = 0.000. We can infer with less than a 5% chance of error that there is a weak significant and inversely proportional relationship between negotiated regulation and the orientation of trajectories in accessing social networks among adolescents.

6.3. Confirmatory factor analysis of the links between variables was also conducted
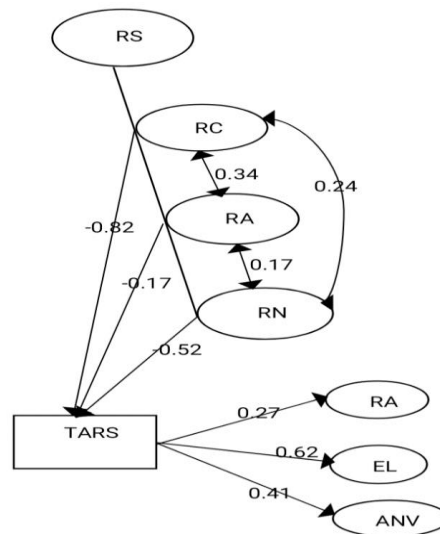

Figure 1. *Confirmatory Factor Analysis Model of the Links between Variables (p<0.05)*

After confirming the research hypotheses and the general hypothesis, a confirmatory factor analysis was conducted on the distribution of the studied variables to evaluate the validity of the proposed structural model. This was done to legitimize the significant factor links of the variable system highlighted in the postulated hypotheses. Several fit indices were used, including Pearson's correlation coefficient and Spearman's correlation coefficient. Thus, a structure with two main factors of trajectories in accessing social networks, each modality (RA: Romantic Relationship), (EL: Freedom Space), and (ANV: Learning New Lifestyles), is governed by a predictive link with social regulation. The confirmatory factor analysis on the distribution of the studied variables generated correlations (Pearson correlation: $rHR_1 = -0.82$, $p<0.05$) and (Spearman's correlation: $\rho HR_2 = -0.17$, $p<0.05$; $\rho HR_3 = -0.52$, $p<0.05$). After this confirmatory analysis and interpretation of the results, we reached a conclusion: there is a link between social regulation and the orientation of trajectories in accessing social networks among adolescents.

7. Discussion

The results of the empirical test show that the factors of social regulation (control regulation, autonomous regulation, and negotiated regulation) as observed among regulators have a positive influence on the orientation of trajectories in accessing social networks among adolescents. The indicators related to social regulation (digital strategic plan, educational policy, laws, content moderation measures, restrictions on freedom, account blocking, cognitive control, emotional control, behavioral control, dialogue measures, negotiation frequency, negotiation duration, negotiation on devaluations, and compromises) seemed significant. It appears that regulators have established a strategic plan, laws, an educational policy, and sanctions that can promote the orientation of trajectories in accessing social networks among adolescents.

However, the effective implementation, monitoring, and evaluation of the effectiveness indicators of these measures still need to be questioned in light of the ongoing deviations on social networks. These results are consistent with

Reynaud's (1988) assertion that hierarchy's primary objective is to create rules and management measures capable of regulating social behaviors. Indeed, social regulation has been provided by MINPOSTEL and ANTIC through digital strategic plans. Electronic communication and cybersecurity are governed by laws, and sanctions are imposed to deter cybercrime.

However, control regulation as observed among regulators has limitations and therefore struggles to address behavioral issues. This is why it is relevant to consider Skinner's (1958) work on operant conditioning. The postulate of this theory supports the idea that behavior is determined by the consequences that increase the probability of its occurrence. If internet users increasingly exhibit antisocial behavior, it is because control regulators have not anticipated their behavior to condition them to act appropriately. The law of effect explains how individuals tend to reproduce behavior as a result of the effects of that behavior on the environment and the impact of that behavior.

According to this law, a response followed by a satisfactory consequence becomes increasingly probable, while a response followed by an unsatisfactory consequence becomes less likely. Thus, punishment has the ability to decrease the probability of inappropriate reactions, and behaviors followed by unpleasant consequences are highly likely to weaken, and the inhibiting nature of the situation can even neutralize and eliminate them. Even if regulators have highlighted regulatory measures, if behavioral deviations are tolerated, we will always observe deviations. Similarly, priority should be given to guiding the behavior of minors in regulatory texts; otherwise, we will continue to witness social dysfunctions, to speak in the words of Kohli (1986), who argues in the life course theory that institutions play a role in standardizing human behavior.

Nevertheless, Reynaud (1988) argues that individuals present in a social situation must autonomously produce rules based on their know-how and usage practices. These autonomous regulations fill the gaps in control regulation. However, autonomous regulation remains a challenge for the majority of young people, as they still struggle to control their deviations in the cyberspace.

Furthermore, Bandura (2003) in his work on self-efficacy argues that individuals with a strong belief in their ability to perform a task set goals for themselves and engage in their pursuit. This sense of readiness, knowing that one can perform well in any context, leads them to make good decisions in difficult situations.

According to this author, personal mastery is one of the sources that build this self-efficacy, and setbacks and difficulties can be beneficial. For him, a high level of self-efficacy will drive young people to choose appropriate behaviors, set goals, strive for more demanding goals, and persist in their behavior. Adolescents should have greater personal mastery and be capable of persisting in the face of adverse experiences they may encounter in cyberspace, thus becoming more resilient to difficulties. This resilience is accompanied by strategies of cognitive, emotional, and behavioral self-regulation. In this regard, Gross (2007) argued in his work on emotional regulation that individuals have the ability to act and control their emotions.

Additionally, Ajzen's (1991) work on planned behavior aligns with the results of this research, as social norms are one of the resources that adolescents must use to regulate their cognitions, emotions, and behavior.

Indeed, according to these authors, adolescents have leeway, education, and autonomy that allow them to develop strategies for regulating their behavior.

Finally, Bastard (1986) emphasizes the importance of exchanges and confrontations in the production of norms, as they enable engagement and reciprocity in social interactions. For this author, collective negotiation necessarily involves dialogue, exchanges, debates, awareness, and education. It is through increased awareness and regulated social exchanges that stakeholders can agree on a rule to which each person can ascribe value and jointly follow. MINPOSTEL and ANTIC organize meetings once a year with adolescents, providing a framework for negotiated regulation that should enable the adoption of appropriate practices and engagement in cyberspace.

8. Suggestions

- Cognitive trajectories of access to social networks for minors and guidance of minors' conduct in regulatory texts.
- Work in synergy with ministries responsible for education to integrate curricula on cybersecurity and cybercrime at different levels of education.
- Intensify awareness, information, and civic education actions for a responsible information society regarding the issues, risks, and preventive and dissuasive measures to educate all cybercitizens to adopt a security approach.
- Mobile phone companies should raise awareness among consumers through regular messages and awareness campaigns.
- Companies, as part of corporate social responsibility, should provide schools with resources to enhance media education.
- Municipalities can play a proactive and coercive role in raising awareness about cybercrime.
- Media education: Schools, through teachers in particular, should use transformative pedagogy to make young people aware of their individual and collective responsibilities in responsible digital use. They should also equip young people to react positively in their social interactions. This pedagogy should be carried out through ongoing dialogue with the aim of protecting and supporting young people in the cyberspace.
- Families have a significant role to play in controlling sensitive and objectionable content for their children. They should use parental control software, such as Noten family developed by ANTIC, to filter, monitor, and block sensitive and objectionable content. For this, they should be trained and well-equipped.

9. Perspectives

At the end of this research, several areas of reflection should be considered, including:

1- Identity exploration and development of cognitive trajectories of access to social networks among adolescents.

2- Negotiated regulation and optimization of typical behaviors among cybercitizens.

3- Transformative education and commitment to socio-digital responsibility.

4- Socio-digital identity: between disguise and lack.

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