

Addiction to Information and Communication Technologies as a Response to Frustration in Adolescents

الإدمان على تكنولوجيات الإعلام و الاتصال في مواجهة الإحباط عند المراهق

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Abstract

This study aims to examine frustration in an adolescent addicted to information and communication technologies (ICTs). The results of the administration of the Rosenzweig Frustration Test (P–F Study) revealed a relatively high level of frustration, manifested through behavioral disturbances in the form of emotional reactivity and outward-directed aggression, with $E=15$.

These findings indicate poor adaptation to reality, which may be further reinforced by addiction to social networking sites. Such addiction increases adolescent social isolation and intensifies the experience of frustration, which is likely to be repeatedly experienced when the expected psychological gratification, satisfaction, and recognition are not obtained from online platforms. On the contrary, this lack of validation may deepen feelings of devaluation and mistrust, thereby negatively affecting the adolescent's mental and psychological health as well as behavioral adjustment.

Keywords: Frustration; Information and Communication Technologies; FPT (Rosenzweig Frustration Test); Adolescent addicted to ICTs.

الملخص:

تهدف هذه الدراسة إلى دراسة الإحباط عند مراهق مدمن على تكنولوجيات الإعلام و الاتصال (ICTs)، حيث أظهرت نتائج تطبيق اختبار الإحباط لـ Rosenzweig وجود مؤشر عالي نسبياً للإحباط و التي ظهرت من خلال اضطراب في السلوك على شكل انفعال و عدوانية موجه نحو الخارج حيث $E=15$ و هذا يدل على عدم التكيف مع الواقع و الذي قد يعزز الإدمان على مواقع التواصل الاجتماعي الذي يزيد من عزلة المراهق و يعزز تجربة الإحباط التي سيعيشها بصفة متكررة إذا لم يتلقى الإشباع و الرضا النفسي و التقدير الذي يتوقعه من المواقع الإلكترونية، بل عكس ذلك ستعمق إحساسه بعدم التقدير و بعدم الثقة مما قد يؤثر على صحته النفسية و العقلية و على التكيف السلوكي لديه

الكلمات المفتاحية: الإحباط؛ تكنولوجيات الإعلام و الاتصال ؛ اختبار FPT ، المراهق المدمن على (ICTs)

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Introduction

Over the past decades, the world has witnessed profound transformations in the field of information and communication technologies, as these technologies have become among the most prominent drivers of social, cultural, and economic change. Humanity has shifted from traditional modes of information exchange primarily based on direct communication and printed

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media to complex digital communication systems characterized by speed, interactivity, and the wide dissemination of information across digital space. This rapid development has contributed to reshaping the structure of human communication and has redefined the concepts of time and space within the communicative process.

The development of information and communication technologies is a direct result of scientific and technological progress, particularly in the fields of computing, wired and wireless communications, the Internet, and artificial intelligence. Media are no longer limited to the function of transmitting news or information; rather, they have become dynamic spaces for the production of meaning, the formation of public opinion, and the enhancement of social interaction. These technologies have also contributed to the emergence of new patterns of communication, such as digital media, social networking platforms, and online journalism, leading to profound transformations in the roles of communicative actors, whether individuals or institutions.

The study of the evolution of information and communication technologies is of great scientific significance, given their direct impact on various aspects of life, particularly in the fields of education, culture, politics, and economics, as well as in the development of defense systems and intelligent weaponry. These technologies have come to pose an imminent risk of a global conflict in light of the accelerating race to produce increasingly powerful autonomous weapons powered by artificial intelligence, which are characterized by extremely high precision, enabling them to strike targets remotely within seconds at the press of a single button. Consequently, these smart technologies raise numerous questions regarding the nature of these transformations and generate multiple challenges related to ethics of use, the digital divide, privacy protection, and the credibility of media content. This situation calls for multidisciplinary analytical approaches to understand their current dimensions and to anticipate their future trajectories. Also this rapid development of information and communication technologies (ICTs) has brought about profound transformations in the psychological and social structures of individuals, particularly during adolescence, which is considered one of the most sensitive developmental stages and highly susceptible to external influences. With the widespread proliferation of digital media, social networking platforms, and smartphones, ICTs are no longer merely tools for information transmission; rather, they have become active psycho-social environments that contribute to identity formation, emotional regulation, and the construction of self-related and social representations in adolescents.

The Statement

The widespread proliferation of social networking platforms has brought about profound changes in patterns of social interaction and psychological experience among adolescents. Adolescents now

live within a digital space characterized by information overload, continuous interaction, and repeated exposure to idealized models of success, beauty, and social acceptance. Within this environment, psychological pressures associated with unrealistic expectations, constant social comparisons, and immediate social evaluation intensify, potentially obstructing the satisfaction of fundamental psychological needs and leading to the emergence of feelings of frustration.

From a psychological perspective, adolescents are seen as individuals striving to satisfy fundamental psychological needs, such as social acceptance, self-esteem, autonomy, and identity development. However, ICTs, through their provision of continuous social comparisons and idealized yet unrealistic models of success, beauty, and lifestyle, may contribute to creating a gap between adolescents' aspirations and their actual capabilities. This gap constitutes a fertile ground for the emergence of frustration, particularly when adolescents are unable to achieve the goals or idealized images imposed by contemporary digital culture.

The frustration is considered of one of the central psychological phenomena during adolescence, as it is associated with the obstruction of goal attainment or need satisfaction and may manifest in multiple forms of emotional and behavioral responses, including aggressive behavior, withdrawal, or diminished self-esteem. Psychological literature indicates that frustration cannot be understood in isolation from the social and cultural context in which the individual develops, which makes the contemporary digital environment a fundamental factor in explaining this phenomenon (Dollard & al., 1939).

Frustration is defined by psychological standpoint, is considered an emotional response resulting from the repeated or persistent obstruction of need satisfaction or goal attainment, a process that may be further intensified within the contemporary digital context. The high level of exposure to media content and interaction based on immediate evaluation (such as likes, comments, and follower counts) reinforces reliance on external validation, thereby rendering adolescents' emotional equilibrium fragile and susceptible to disturbance in the absence of recognition or in the face of virtual neglect or rejection. Moreover, this mode of communication

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may hinder the development of realistic psychological coping skills and weaken the capacity to tolerate frustration and regulate emotions.

Accordingly, the study of the development of information and communication technologies in relation to frustration among adolescents acquires particular significance in contemporary psychology, as it raises critical issues related to mental health, emotional development, and identity construction in the digital age. It also opens avenues for investigating the underlying psychological mechanisms through which digital media influence adolescents' emotional experiences, as well as the coping and adaptation strategies they adopt within a rapidly evolving and fast-paced communicative environment. In this context, the data from the World Health Organization (WHO, 2024) regional office for Europe, finding from the Health Behaviors in School-aged Children (HBSC) study, indicates a rise level of social media use among adolescents from 7% in 2018 to 11% in 2022, and more than 12% are at risk of problematic gaming and the impact of digital technology on the mental health and well being in 2022. The report defines problematic social media use as a pattern of behavior characterized by addiction like symptoms: these include making control social media use, withdrawal experience when not using social media, and neglecting other important activities that lead to cope with a daily problems.

Adolescents addicted to information and communication technologies may expose them to a series of recurrent frustrations, such as failure to attain virtual social acceptance, negative comparison with others, or digital exclusion. These experiences may translate into cyber-aggressive behavior, self-directed aggression, or emotional disturbances. Accordingly, this theory helps explain certain behavioral and emotional responses resulting from frustration associated with the use of information and communication technologies.

Accordingly, this study raises a central research problem articulated as follows:

Do adolescent addicted to information and communication technologies (ICTs) experience high levels of frustration?

Hypothesis

Adolescent with addiction to information and communication technologies suffer from high levels of frustration.

The Theoretical Foundations of the Study

Frustration is a concept that refers to a psychological state arising when an individual's goal-directed behavior is blocked or interfered with, preventing the attainment of a desired objective . It occurs when a person encounters obstacles internal or external those hinder the satisfaction of

needs, motives, or expectations .There are numerous theories that have sought to explain this concept, among which are:

1- Frustration in psychoanalytic theory

Frustration is defined as a situation in which a subject is deprived of the satisfaction of an instinctual demand, either because the object necessary for satisfaction is absent or because access to it is prohibited. Frustration thus refers not only to an external obstacle but also to a subjective experience of lack that plays a significant role in the dynamics of psychic conflict and symptom formation (Laplanche, J., & Pontalis, J.B, 1992). Freud distinguished between two situations in which neurosis emerges. The first arises from a deficiency in reality, such as the loss of a love object, while the second occurs when the individual deprives himself of the satisfactions offered by material reality due to internal conflicts or fixation. Freud considered the concept of frustration capable of encompassing both situations, suggesting that predominant frustration does not originate from the external world but rather from internal frustration, wherein the individual prevents the actual satisfaction of desire.

2- The Frustration—Aggression Theory

The Frustration—Aggression Theory is among the earliest theoretical frameworks that sought to explain the relationship between psychological obstacles and aggressive behavior. Dollard and his colleagues (1939) postulated that frustration, resulting from the obstruction of goal-directed behavior, necessarily leads to aggression, and that every act of aggression presupposes the existence of prior frustration. This deterministic proposition, however, was subject to considerable criticism. Subsequently, Berkowitz (1989) revised the theory, emphasizing that frustration generates an emotional readiness or predisposition toward aggression, which may manifest in direct or indirect forms depending on the context and the presence of mediating factors. This revised conceptualization was later elaborated and illustrated through a model proposed by Berkowitz (Breuer. J., Elson. M, 2017):

Frustration - aggression theory (Breuer. J., Elson. M, 2017, p 7)

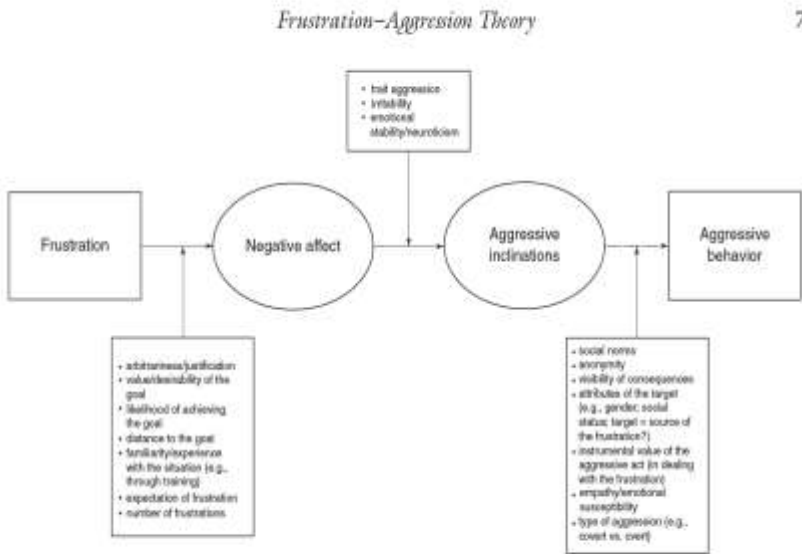


Figure 40.1 The frustration-aggression hypothesis according to Berkowitz (1989) as a multistage moderated mediation model with moderators for the various paths as suggested by the literature. Source: Reproduced with permission from Breuer & Elson (2016).

3. Identity Theory of Erikson

Identity theory, particularly as developed in Erikson’s work (1968), is considered one of the fundamental frameworks for understanding psychological development during adolescence. Erikson argued that the central conflict at this stage is the crisis of identity versus role confusion. Failure to construct a coherent and stable identity leads to a state of confusion, anxiety, and frustration

In the context of information and communication technologies, the process of identity construction is no longer limited to real-life interactions; it also takes place within the digital space through the creation of virtual identities that are subject to continuous social evaluation. The discrepancy between real identity and digital identity may give rise to internal conflicts and feelings of frustration, particularly when the adolescent is unable to reconcile their authentic self-image with the idealized image imposed by digital environments.

4- Frustration theory of Saul Rosenzweig

According to Rosenzweig, S (Pichot. P., Danjon. B, 1966) frustration represents an attempt to provide a material, organic expression within a psychobiological context. It offers a renewed formulation of psychoanalytic concepts while taking into account experimental possibilities.

The defense against frustration through biological mechanisms in the organism occurs at three levels:

1. Cellular and immune level

This level relies on phagocytic cells, antibodies, and the skin, primarily serving as a defense against inflammatory agents.

2. Autonomous or emergency level

According to Cannon's concepts, this level represents the organism's defense against external threats to physical integrity. It is associated with psychological factors such as fear, pain, and anger, and leads to biological changes related to stress, as described by Hans Selye.

3. The third level represents the ego defense.

Which is the highest level because it is linked to the cerebral cortex? It reflects the ego's defense against psychological attacks to protect the individual's psychic integrity. This level constitutes the core of frustration theory, which, in fact, encompasses all three levels that integrate and interact to defend against frustration, ultimately producing responses of aggression and distress.

From the above, frustration can be explained as occurring when the organism encounters an obstacle or barrier that is difficult to endure or overcome, preventing the fulfillment of a vital need for the individual. In this context, the obstacle itself constitutes the primary source of frustration.

Types of responses to frustration

Responses to frustration are classified according to three levels:

1. Response based on the economic factor of the frustrated needs which is governed by two principles:

The first is related to an urgent response to a partially frustrated need. This response is limited in comparison with the ego defense response; it aims to satisfy specific, frustrated needs in one way or another, and its nature, from the analytic perspective, corresponds with the mechanisms of sublimation and hysterical transference.

The second type is an ego-defensive response; this type targets the fate of the personality as a whole and emerges only in situations where the ego is threatened; it corresponds to active tension. Both types share the common condition of frustration.

Rosenzweig, S., relied on the second principle related to ego-defensive responses when developing *the Picture Frustration Study* (PFT) in 1934 as a tool for assessing frustration. He therefore proposed three groups of ego-defensive responses and linked them to psychoanalytic concepts.

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1. Extra-punitive responses

In this type of response, the individual aggressively attributes the causes of their frustration to external persons or objects. It is accompanied by emotions such as anger and tension. In some cases, overt aggression is inhibited and instead expressed indirectly through the mechanism of projection, which corresponds to a paranoid mode of functioning.

2. Intro-punitive responses

In this type of response, the individual aggressively attributes the causes of their frustration to themselves. It is accompanied by emotions related to feelings of guilt and remorse, and is associated with the defense mechanisms of displacement and isolation. This represents the pathological manifestation of intro-punitive responses and corresponds to a state of psychological exhaustion, particularly within an obsessional mode of functioning.

3. Impunitive responses

In this type of response, aggression does not appear as the driving force of the situation. Instead, both self-blame and blaming others are avoided, with an attempt to find a conciliatory solution to the frustration. This response corresponds to the defense mechanism of repression, and its pathological manifestation is associated with the presence of hysterical symptomatology.

Frustration tolerance

Frustration tolerance is defined as an individual's ability to endure frustration without losing their capacity for psycho-biological adjustment, that is, without resorting to maladaptive coping strategies. Frustration tolerance is closely related to two concepts in psychoanalytic theory: the pleasure principle and the reality principle. In early childhood, the pleasure principle predominates; gradually, the child begins to engage with reality and relinquish the immediate gratification of desires that may have negative consequences. The fundamental concept underlying the ability to delay the gratification of desire thus falls within what is known as the capacity for frustration tolerance.

2. Psychological hereditary factors:

Although these factors are not precisely specified, their impact is evident. When the capacity to tolerate frustration is absent from early childhood, the child finds his self unable to respond to frustration in an adaptive manner. This constitutes a serious risk factor, as the child's lack of psychological maturity compels them to resort to maladaptive ego-defense responses, which in turn hinders the child's psychological development.

As for adolescents, the situation is more complex, as this developmental stage is characterized by changes occurring at multiple levels, beginning with physical and hormonal transformations

associated with puberty, which position the adolescent as a “young adult.” During this period, the adolescent is confronted with multiple choices: the construction of sexual identity, the selection of a sexual partner, and decision-making regarding education and future career.

At the same time, the adolescent is required to assert their existence and seek independence from adults (family and social environment). This process necessarily involves facing repeated challenges and frustrating situations. Any difficulty or failure encountered may generate feelings of helplessness and frustration.

In order to avoid such frustrating situations, and given the sensitivity of this developmental stage, as well as the context of globalization that has transformed the world into a “global village” accessible at the click of a button through the rapid development of information and communication technologies, the adolescent finds a refuge in escaping from material and frustrating reality into digital reality. This digital space has become a container that absorbs various forms of frustration, alleviates feelings of inferiority and helplessness, and serves as a site for the projection of negative emotions that the adolescent is unable to express within the material reality.

However, these digital media and social networking sites have only increased adolescents’ isolation and intensified their difficulties in resolving relational and everyday problems. They have reinforced maladaptive behaviors while simultaneously giving rise to indicators associated with addictive disorders, due to excessive investment in the digital world for prolonged daily periods and the avoidance of real-life experiences. This withdrawal from lived reality further amplifies adolescents’ inability to confront the real world through avoidance, which in turn deepens feelings of frustration and reinforces a diminished capacity to tolerate even minimal levels of frustration.

Methodology of the study

In this study, we adopted the clinical approach through a case study, which requires an in-depth exploration of psychological functioning by understanding the individual’s behavior in terms of thought processes, emotions, underlying affective dynamics, the nature of interpersonal relationships, as well as patterns of response and adaptation within their environment.

This study was conducted on a single case of an adolescent enrolled in middle school. The participant was selected after identifying a high level of indicators of addiction to social networking sites and online video games.

Study instrument

In this study, we relied on two tools:

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1. The Clinical Interview

The clinical interview is considered one of the most effective and appropriate methods for conducting a clinical investigation. The data obtained will be subject to detailed analysis and processing in order to verify the validity of the hypothesis of this study.

2- Frustration picture test (FPT) of Rosenzweig Saul (1934)

The test consists of 24 drawings that are uniform; each one represents two people placed in a common type of frustrating situation. The person on the left utters statements that describe either the frustration of the other person in the right or their own frustration. The presented situations are divided into two groups; Ego-obstacle situations, and Super-ego obstacle situations

The scoring of responses must follow the following sequence: **O-D / E-D / N-P.**

- 1. The dominance of the obstacle (O-D)
- 2. The ego defense (E-D)
- 3. The persistence of the need (N-P)

And The symbols **E, I, and M** indicate the direction of aggression, the prime symbol (**'**) indicates an obstacle, and the symbols **e, i , and m** indicate need-persistence

The following table outlines the various indicators applied in the scoring of the FPT of Rosenzweig.S

Table1: scoring indicators for the PFT

Sym	Indicators
E	Extrapunitive
I	Intrapunitive
M	Impunitive
O.D	Obstacle dominance
E.D	Ego-defense
N.P	Need persistence
E'	Insistent frustrating obstacle
I'	Non frustrating obstacle
M'	Minimized frustrating obstacle
E	Extrapunitive hostility- blame
<u>E</u>	Agressive denial of responsibility
I	Intropunitive blame and remorse
<u>I</u>	Partially admits guilt
M	Guilt from avoided frustration

e	Expected solution with persistence of the other
i	Solutions are presented with guilt
m	The individual hopes that the problem will be resolved with time : patient-submission

Case presentation

Amine is 16-year-old adolescent boy. He is the eldest of three siblings (one male and two females), born to parents who both work in the field of education. He is enrolled in the second year of secondary school, and his academic performance is barely average.

During the interview concerning his use of information and communication technologies, it emerged that he spends long hours playing video games, sometimes throughout the entire night. He plays online with other players, and this often leads to noise late at night, ending in conflicts with his parents. Amine reports that even at school he does not stop playing on his smartphone, while simultaneously browsing his online accounts such as Facebook, Instagram, and other platforms.

He can't stay without using the Internet for entertainment and passing time, and that he does not use it for other purposes such as studying or academic activities. He also reports that his father sometimes punishes him by confiscating his smartphone, but is unaware that he always hides a backup phone. When he is prevented from playing online video games with his friends, he reacts by destroying objects in his room.

This behavior indicates that Amine is addicted to communication technologies. He exhibits emotional symptoms, anxiety, and social withdrawal, and is in constant conflict with his parents, in addition to his poor academic performance. This case represents a model of addiction to social networking sites.

Results of FPT

Table 2: Responses and/or Survey Instruments of the FPT

1	Don't worry	13	You ought to have told me
2	I am really sorry I didn't do it on purpose	14	Call her maybe she won't come
3	I will ask if she can take off her hat	15	Yeah, you suck in this game
4	I'm unlucky	16	The road doesn't belong to you
5	It's strange!	17	Stop, you're making me stressed

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6	Okay, I'm going to take only two books	18	What a pity :
7	No! you're the one who's not being serious	19	I'm sorry sir, I was in a hurry and didn't notice
8	Yes, that's true	20	I told you she hates us
9	You can't give it to me now, it's raining	21	I didn't ask you
10	Me a liar! Are you crazy or something?	22	No
11	You're an idiot, you and the receptionist	23	Seriously! we don't have time for the queen
12	Can you call him or do something	24	You keep it, I don't need it

Table 3: Data analysis sheet

Nº	O-D	E-D	N-P	GCR
1		M m		1
2		I i		1
3			e i	
4		I M	m	
5		E	i	
6			m	
7		E E		1
8			m	
9	E'	E E		0.5
10	E'	E E		0.5
11		E E		1
12			e	
13	E'	E E		1
14		M	I	
15		E		
16		E E, i		0.5
17		E E		1
18	E'			
19		I i		1

20	I'			
21	I'	E		
22	I' m			
23		E E		1
24	M'	M		
G. C.R				Total: 9.5
46%				Note T: 50

The results of the analysis of the Rosenzweig Frustration Test (P–F Study) protocol indicate the presence of a high level of frustration, with a predominance of the extrapunitive orientation, as reflected by a total score of $E = 15$ compared to the average of 7.57, reinforced by the score of $E' = 4$ (the overage 1.98) that indicates insistent frustrating obstacle, and the score of $\underline{E} = 3$ (the overage 1.44) that the case denies aggressively the responsibility for these errors (Pichot. P., Danjon. B, 1966). This suggests a low sense of guilt and a lack of acknowledgment of personal responsibility, as the individual attributes all the causes of the problems he experiences to external situations, whether involving people or objects.

In addition, a high number of responses related to obstacle-focused reactions (E' , I' , M') was observed, indicating feelings of frustration and helplessness in problem-solving, along with an inability to adapt to various situations. This, in turn, intensifies and reinforces the experience of frustration. In order to avoid this state, the individual invests most of his energy in excessive use of information and communication technologies, as a means of escaping from the frustrating reality in which he lives.

Conclusion

Addiction to information and communication technologies has become one of the challenges that increasingly threaten the mental and psychological health of adolescents, who have developed screen- and smartphone-dependent behaviors at the expense of a decline in real-life social interactions. This has created a significant gap between the real world and the digital virtual world.

Applications such as Face book, TikTok, and others have become a refuge for adolescents to avoid frustrating life situations, whether within the family or at school. This, in turn, deepens problems related to emotional and mood regulation, which become primarily driven by sensory–perceptual stimulation through sound and images, at the expense of psychological and cognitive activity. Consequently, adolescent isolation is intensified, along with a deepening sense of

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loneliness and frustration especially when these social media platforms fail to provide the recognition and approval the adolescent expects through online interactions.

Such dynamics may contribute to the development of profound psychological disorders that may require therapeutic intervention, in order to help the adolescent break free from repetitive and frustrating experiences and learn to confront life as it exists in reality, rather than in a virtual world.

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