

Experiencing the Digital Attention Crisis in Adolescence: A Descriptive Phenomenological Study of Teachers' and Parents' Perspectives in Karachi

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ABSTRACT

The explosion of digitally mediated spaces has dramatically transformed the attentional capabilities, learning methods, and emotional regulation of adolescents. An extensive array of studies has investigated the cognitive and behavioral impacts of digital media consumption; however, this literature has been predominately quantitative in nature, outcome-focused, and conducted in the Western context, with no insight into how the people closest to adolescents – teachers and parents – perceive, understand, and deal with attentional disruptions in everyday practice. The need for such knowledge is particularly pertinent in Karachi, Pakistan, where previous research on adolescent digital media consumption has been conducted using solely cross-sectional surveys considering attention as a constant background factor. This research adopted a descriptive phenomenology design based on the philosophy of Husserl (1931) and methodology of Giorgi (2009) to address this gap by interviewing six participants in Karachi, i.e., three matched pairs of parent-teachers, each set discussing one same adolescent (Student 1: mother and a male teacher; Student 2: father and a female teacher; Student 3: tech-savvy mother and a senior academic), using semi-structured in-depth interviews of 35 to 60 minutes. Data analysis was done using the Giorgi's six step descriptive phenomenological method (holistic reading, bracketing, identification of meaning units, eidetic transformation, thematic clustering and synthesis) using the lens of Attention Economy Theory, Cognitive Load Theory and Ecological Systems Theory. The analysis resulted in four main themes: attentional saturation and cognitive fatigue, attention devoted to entertainment and disengagement from classroom discussion, mediation challenges within the family and school systems and slow but steady changes in emotional and mental health. It conceptualizes adolescent digital attention disorder as a relational and culturally contingent phenomenon and not as a mere cognitive problem and that Karachi parents are not converging to one kind of mediation philosophy with the three families of this study having three different philosophies (restriction, coexistence and negotiated balance).

Keywords: digital attention crisis; descriptive phenomenology; adolescence; Karachi; teacher–parent perspectives; parental mediation; cognitive load theory; attention economy theory; ecological systems theory; mesosystem

INTRODUCTION

Background of the Study

Attention is essential to cognition, learning, and psychological development; it determines how we choose, sustain, and organize our engagement with our environment (James, 1890). Adolescence is a critical time for attention: while our socio-emotional and reward-sensitivity systems mature early in life, our prefrontal systems which enable focus and impulse control continue to develop well into adulthood (Casey, 2015). Now we are living in a time of unprecedented global media access. Digital media operate in what has been

called the attention economy, a scarce, valuable resource that platforms desire to capture and hold onto through algorithmic personalization, endless scroll, and persistent notifications (Davenport & Beck, 2001; González de la Torre et al., 2024). This affects our neural development as well as neurodevelopment because their heightened sense of reward and peer opinion is shaped by our digitally constructed social environments, placing an ongoing demand on attentional and emotional regulation systems still maturing (Crone & Konijn, 2018).

The consequences of this are well documented. Cognitive Load Theory explains that because the working memory has limited capacity and time, the extraneous cognitive load created is magnified as the digital stimuli continue to fill in the space that would otherwise be available to students' work (Sweller, 1988; Sweller et al., 2019). Ophir et al. (2009) found that habitual media multitasking did not generate efficient parallel processing but created a pattern of partial attention. Rosen et al. (2013) noted that students' attention on one task until an interruption takes place only lasts several minutes in the naturalistic classroom. Public health agencies have reframed digital use by adolescents as a developmental and public-health issue that requires adult intervention, and are now beginning to view adolescent's self-control as a matter that is still in development (American Psychological Association, 2023; World Health Organization Regional Office for Europe, 2024).

Problem Statement

This evidence base focuses heavily on Western contexts resulting in a limited understanding of South Asia due to Western dominant assumptions of the nuclear family, high digital literacy among parents, and stable governance around school level technology. These assumptions are not applicable to South Asia. Research on adolescent media use in the Global South is limited despite the high number of adolescents in the region (Ghai et al., 2022). Many adolescents in low and middle income countries access digital platforms without scaffolding of structured digital literacy (Magis-Weinberg et al., 2021). This is compounded within Pakistan and specifically within Karachi, by large multi-generational households, a highly gendered digital divide, and an academically stressful, exam-centric schooling system. Focused research on Karachi has shown that the excessive use of social media has been related to social anxiety among adolescents in Karachi, body dissatisfaction, and psychological distress and has shown adhd and behavioral difficulties documented in clinical settings within the community (Tajjamul & Aleem, 2022, Anjarwala et al., 2023). Yet each of these studies looks at attention as a fixed variable, as something that is not dynamic, that is in the background, that is measured in a cross-sectional way. Rather, attention is something that is relational and is measured in a dynamic way.

Purpose of the Study

A descriptive phenomenological study is proposed to explore, through this design, how teachers and parents in Karachi view, interpret, and negotiate adolescents' digital attention in their schools and homes. The study does not aim to measure the amount of screen time or academic outcomes, but to explore the meaning that this interruption holds for the adults who watch it daily and how they attempt to balance the conflict between the digital presence of the teens and their need for continuous attention.

Research Objectives

1. To gain insight into the experiences of teachers and parents regarding adolescents' media consumption and attention in the city of Karachi.
2. To explore the nature of the negotiation that occurs between teachers and parents as they try to balance attuning themselves to adolescents' use of digital devices and their control of attention.

3. To create context-specific, practice-relevant insight that could inform strategies for education and mediation practice in a context of Karachi and similar places in South Asia.

Research Questions

1. What do teachers and parents feel or know about adolescents' uses of their digital attention in the learning and home environment?
2. How is attentional disturbance viewed and understood by teachers and parents in these contexts and what is its importance for each?
3. How do teachers and parents balance out the tension between adolescent's digital participation and attentional regulation?

Significance of the Study

This study is significant for five reasons. First, this study focuses attention on two microsystems (school and home) and two adults (school and home adults), and these human adults and microsystems are missing in much of the current literature, which treats screen time and attention as adolescent variables and phenomena, respectively. Second, it does not rely on teachers' and parents' place within everyday knowledge as secondary research on teens' behaviors but also as primary data in its own. Third, it is locally embedded: for the dense multigenerational household that allow in Karachi, the resources in schools that vary and the distinct culture of initiatives and devices in the digital age are different from the Western settings in which the bulk of the research was carried out, and there might be differences in the types of mediation strategies that can be applied to these two contexts without alteration. Fourth, it also has direct practice relevance for the ways in which classroom policy and home-mediated use of digital technologies can be designed in ways that align with practices and problems as outlined by adults, and not to general guidelines on screens-time. Fifth, its matched teacher–parent design is methodologically unique in the literature in Pakistan exploring this topic, bringing the study a depth of meaning unavailable in the single-stakeholder design explored elsewhere in the literature: the mesosystem, the space between home and school identified by Bronfenbrenner's (1979) ecological systems theory where this disturbance is most conveniently addressed.

Scope of the Study

This research is located in the realm of educational developmental psychology emphasizing on the adolescent digital attention experienced by the adults that mediate these young people's experiences. The study samples three matched teacher–parent pairs that are related to the same adolescent (aged between 13 and 19), and one senior academic administrator, who provides an institutional perspective, from secondary schools and families in various parts of Karachi. The data were collected through semi-structured in-depth interviews over a specified period of time, which analyzed using three theoretical frameworks of Attention Economy Theory, Cognitive Load Theory and Ecological Systems Theory and interpreted. The focus of the study does not involve self-report by adolescents or inclusion in clinical diagnoses nor research into quantifiable measures of digital media consumption.

Delimitations of the Study

1. Participant scope: Instead of a larger number of pairs, or unmatched samples, the study is delimited to three matched teachers and parents' pairs which are tied to the same adolescent to allow for dyadic, comparative analysis across microsystems.

2. Adolescents became indirect recipients: As the present study focuses on the sense making of adults, rather than the self-report of adolescents, no questionnaires were administered to adolescents.
3. Geographic focus: The study examines teachers and parents in a specific setting in Karachi, due to its unique urban, educational and digital culture context.
4. Theoretical scope: Other applicable theories, such as self-determination theory and media effects theory, were not included in the study.
5. Methodological choice: This study only meets descriptive phenomenological (QM) design instead of the other quantitative information, including track the amount of time children spent on screens and standardized attention scales.
6. Definitional scope: Digital attention disturbance is not a clinical or diagnostic category (ADHD diagnosis/screening), but rather how it is perceived and described by teachers and parents.
7. Timeframe: Data collection only captures one moment in time and are not done to track changes in perceptions throughout an academic year or throughout the process of adolescent development.

Limitations of the Study

1. Small sample size: The study has three teachers and parent's pairs (six participants) giving it depth of experience rather than statistical generalizability. This is in keeping with the goals of descriptive phenomenology (which emphasizes rich and essential description over representativeness), but the themes discovered ought to be interpreted as illustrative and not exhaustive of all the parents' and teachers' experiences in Karachi.
2. Single-city focus: The interpretations provided are based on the particular socio-economic, educational and digital-cultural contexts in the city of Karachi and require further research in order to be generalized to other cities of Pakistan, villages and other countries.
3. Fussiness, lacking the voice of a teenager: The information the study gathers is the perceptions of attentional disturbance among adults, and not the experiences or perceptions of attention among adolescents. This is a conscious scope decision (see Section 1.7) and restricts the findings to the "interpretive" level of adult experience.
4. Trusting on self-reporting from the past: Interview accounts rely on participants' memory, interpretation and willingness to reveal information, and can be influenced by social desirability, for example mothers who want to look concerned or attentive, and teachers who want to look as if they are in control of the class.
5. Single-interview design: The interviews were limited to one interview per participant and thus it would not be possible to see the impact of the viewpoints that were built over time and with greater researcher-participant intimacy.
6. Possible researcher bias: While bracketing (epoché) was used in all stages of both collecting and analyzing the data, it is impossible to consider qualitative research to be genuinely objective. The prior theoretical background that the researcher has to the research topic might have slightly influenced the foregrounded meanings in the analysis of the data.

Operational Definitions

1. Digital Attention Crisis: The chronic and persistent deficits in sustained attention of digitally saturated environments as experienced and reported by adults following observations with and about adolescents in instructional and household contexts.
2. Cognitive Overload: When the amount of information is presented too fast or too much for working memory (Sweller, 1988).
3. Qualitative research methodology called as Descriptive Phenomenology whereby one starts by describing how an experience is structured before giving an explanation or theory to that experience (Husserl, 1931; Giorgi, 2009).
4. Mesosystem: Bronfenbrenner's (1979) ecological view of adolescent development emphasizes the set of interactions and relationships that are most relevant to this study, namely the interactions and communication between the adolescent's immediate environments, in this instance, those of home and school.
5. Attentional Saturation: when the adolescent observes that an attentional capacity of adults is "saturated", as opposed to being in attentional "by choice".

LITERATURE REVIEW

Theory of Attention Loss

Adolescent attention loss is generally caused by multiple factors. However, three theoretical frameworks that were developed independently across several disciplines (economic, cognitive, and ecological) all focus on the same general issue but view it differently. Together, the three theoretical frameworks help describe the reasons adolescents have lost their ability to pay attention; however, they also provide insight into why many of the most influential people in an adolescent's life (parents and teachers) tend to be aware of this problem as soon as anyone else but are typically ill-equipped to solve this problem for them.

Attention Economy: The Structural Enabler

Herbert Simon's (1971) statement that in an era of ample information, it is not the abundance of information that limits our ability to process or consume it, but rather our limited capacity for attention, created the foundational concept of the "Attention Economy." The Attention Economy originally was based on an economic model however today it is now used as a design model. Today most social media platforms do not serve as neutral platforms of communication, they are commercially designed systems which capture and retain users' focus and then use this focus to create revenue (González de la Torre et al., 2024). Design elements like infinite scrolling, auto-play videos, and push notifications are designed to engage the dopamine driven reward cycle in a way that will cause users to continue to access and view their platform repeatedly (Myers, 2025; González de la Torre et al., 2024).

Adding this aspect to the understanding of attentional disturbance is important for the understanding of attentional disturbance. Instead of taking adolescent distraction as a personal failure of discipline, attention economy theory re-frames the problem and suggests that the culprit is not in fact adolescent distractibility, but rather the product of an industry whose survival depends on their disengagement from anything else (Davenport & Beck, 2001). This shift is more than semantic; it shifts the responsibility of distraction away

from the child and to the digital environment itself, something that will be explained later in this review, when parents' and teachers' explanations for adolescent distraction are examined.

The Internal Mechanism: Cognitive Load Theory

If the attention economy explains the external pressure, then Cognitive Load Theory (CLT) explains what happens when the pressure reaches the adolescent brain. According to Sweller (1988), working memory has extremely limited capacity and duration. Learning must take place with a material that can be processed efficiently so that it reaches long-term memory. CLT differentiates between intrinsic load (the difficulty of the material), extraneous load (inefficiencies introduced by the way information is presented), and germane load (the effort involved in learning itself) (Sweller et al., 2019).

Digital environments increase this load even further, since constant notifications and competing visual cues consume the working memory that should be used for preparing for the task in front of you. A 2025 review of smartphones and cognitive overload by Krumsvik (1925) shows a 2025 meta-analysis of randomized controlled experiments on distraction by mobile phones (Chen et al., as reported in Krumsvik, 2025) found that distracted students' recall of something happened moderately, and that they remember less of what they heard in lectures, and that female students were more affected than males. This news echoes the earlier report by Ophir et al. (2009) who first demonstrated that habitual media multitaskers perform worse at tasks requiring attention not because they are better at focusing, but because they have trained themselves to give partial attention.

In this light, this research contributes another layer to the attention economy, one that explains why these mechanisms of control over attention bring cognitive cost to those engaged in a classroom-based learning process. The findings from the research also suggest that teachers are aware of CLT before it is called for them. Teachers in a qualitative study of Pakistani university faculty thought they were experiencing this mechanism themselves, saying that smartphones helped or hindered their students' learning depending on how they were used in class (Rahman & Hameed, 2019). Thus, CLT is not just an academic construct imposed on the data, but a pattern that teachers sense before it becomes a term for them.

Ecological Systems Theory: The Environmental Anchor

In the third frame, our focus moves from the individual mind to the environment in which the adolescent moves. Bronfenbrenner (1979) ecological systems theory describes development as being shaped by multiple systems: microsystem (home and school), mesosystem (interactions between home and school), exosystem, macrosystem, and chronosystem. Of these, the mesosystem is most pertinent in this study as it is not defined as a place but rather as a relationship, the strength and coherence of communication between parents and teachers around their shared child.

Bronfenbrenner's model has been around since the smartphone era. Recent research has focused on updating it. In their "neo-ecological theory," Navarro and Tudge (2022), a paper that builds upon Bronfenbrenner's model, Navarro and Tudge write that "virtual microsystems, such as social media, gaming communities, and online learning spaces, are places where a young person lives alongside (and sometimes in conflict with) the physical microsystem of home and school. This is relevant for this study: the young person's attention is no longer split between two spaces (home and school), but instead spread across three, with the digital microsystem often invisible to the two adults who inhabit the other two.

Together, the three theories are in turn answering different questions: why is attention being challenged to adolescence; Cognitive Load Theory questions what that pressure does internally; Ecological Systems Theory questions where the consequences are and who can notice them. Our study is located at the

intersection the third theory identifies: the mesosystem; and how do two adults living in it make sense of a disturbance with the source partially hidden from either of their immediate sight.

Global Perspectives: Neurobiology, Distraction, and Public Health

Globally, adolescent digital attention has taken on a new significance. Instead of studying it as a habit, the literature is now looking at it as a developmental and public health issue. This shift comes from in-depth research into adolescent neurobiology. In his (2015) description of adolescent self-control, Casey wrote that adolescent self-control is characterized by a developmental asymmetry in which the social-emotional and reward-sensitivity mature sooner than the prefrontal cognitive-control systems that control attention and impulse control. A large, passively monitored cross-sectional study of adolescents in the US has documented this asymmetry in reality. Despite the demands of sustained attention in class, teens spend over an hour a day on their smartphones during school hours and report losing control over this time (Telzer et al., 2026).

Brain imaging studies add further layers. In a review of adolescent smartphone use for an uncharted audience (2024), Chun et al. describe findings showing that adolescent with excessive smartphone use has altered connectivity in the brain regions of reward and cognition, as well as difficulties regulating attention and emotion compared to adolescent who is not using a smartphone excessively. These findings are consistent with those from 104 studies on smartphone use and adolescent brain function in 2026 scoping review of 104 studies (Cosper et al., 2026).

The evidence from the classroom has also consistent. The observation, reported in Rosen et al. (2013), shows that students often have moments to stay focused on their phones before they experience a digital distraction, and studies of students with higher levels of habitual media multitasking report rising rather than just increasing problems with attention over time. Public health groups have begun to recognize this. The American Psychological Association's (2023) health advisory on social media use among adolescents points out that the genetic mismatch between maturity of the reward system and prefrontal control is a reason to encourage mediation by adults rather than adolescent self-regulation. But, there is nothing in the global literature about how that adult mediation should work or how the adults who are trying to assist themselves actually experience the disturbance they are trying to manage. This is where the gaps in the global literature begin to become more specific.

South Asian Context: The Digital Divide and the Paradox of Parenting

The majority of the neurobiological and cognitive literature highlighted above is from North America, Europe, and East Asia, in which nuclear families, parents with high digital literacy and school policies pertaining to information technology are assumptions embedded, often unseen, in the research design. South Asia complicates each of these assumptions.

The largest structural difference is access. In South Asia, children are 1.5 times more likely than girls to have a mobile phone, and nearly twice as likely to own a smartphone (UNICEF Regional Office for South Asia, 2025). Women are only about 31% less likely than men in South Asia to access mobile internet at all. And in Pakistan, boys are significantly more likely than girls to have internet access (UNICEF/ITU, 2022). This means that "adolescent digital attention" is not a gender-neutral phenomenon in this region; the disruption being studied is felt, observed, and mediated by different ways by each gender, and any account that treats "the South Asian adolescent" as a single category risks obscuring this difference.

Family structure further complicates matters. As the recent study in India of parental perceptions of screen-time indicates, there is still a lack of qualitative research on parental role in shaping their children's screen

use in South Asia since the early introduction of screens occurs in joint, multigenerational households where norms and family dynamics are considerably different from those in Western societies (Bhoi et al., 2025). This is no minor footnote, but it impacts how "parental mediation," a term developed in Western literature on media effects, can be even carried out in this context.

In Pakistan, a cross-sectional study in a teaching hospital in Karachi found that parents' reported screen time was positively associated with psychological distress scores of children, with risk factors for excessive screen time identified through structured parent self-reports (Ishtiaq et al., 2021). These and other studies in Pakistan which use structured questionnaires and parent self-reports are well suited to identify patterns of association but are not suited to capture the situational, lived difficulty of actually practicing digital mediation as a parent. This is precisely the gap a qualitative, experience-centered design can close: not what parents believe should work, but what actually happens when they try.

Pakistani Landscape: Digital Ruptures in Karachi Households and Classrooms

In Pakistan, and especially in dense urban areas like Karachi, the immediate effects of digital attentional disturbances are often better described as academic decline, anxiety, and interruptions in family communication than through the voices of those with these disorders.

There is a real split in the views among school faculty from the perspective of smartphones use in the classroom. They viewed smartphones as a way to learn and distract, depending on how they were incorporated into the lessons (Rahman & Hameed, 2019). A qualitative study of 22 university faculty in developing-country universities indicated that while smartphones are a viable form of learning and communication on the off-campus campus, they also raise concerns about their disruptive and distracted effects on student learning (Iqbal & Bhatti, 2020).

Across the house and at school for adolescents, research in Karachi has found a similar picture of adolescents dealing with academic, family, and digital pressures all at once with limited support from either institutions or families. In a qualitative study of adolescent health conducted among residents in Karachi's peri-urban squatter settlements, focus group discussions with adolescents and parents revealed that the gap in communication between adolescents and parents about social media use is also gendered, with families giving different roles, responsibilities, and oversight to girls and boys (Rizvi et al., 2024). As in the regional literature on digital divide discussed above, gendered differences at the household level are evident in families' mediation practices.

A different study conducted in Karachi on barriers to adolescent mental health care access and findings from interviews with parents and mental health providers revealed that both groups noted similar barriers to care, but differed in their explanations for adolescent distress (Mubeen et al., 2024). Although this study is not specific to digital attention, the fact that it compares the accounts of two adult stakeholder groups of the same adolescent population provides a direct precedent for this thesis's matched-dyad approach.

There is a lack of a study in Karachi where the parent and teacher of a student who is experiencing the same attention issue are interviewed side by side. The available research has interviewed parents in one manner, teachers in another, or the students themselves, but never did they interview all three within one case. This is the exact gap that the present study is designed to fill.

Critical Synthesis and Gaps in the Literature

It is clear that while all of the above literature supports an underlying generalization that adolescent attentional disorder is real, quantifiable, and affected by platform design, brain functioning, and environments, there are three distinct but interrelated gaps that I address directly in this thesis.

First, the over-reliance on quantitative and survey measures, particularly in Pakistan. The three studies of Pakistani context cited above are predominantly cross-sectional and questionnaire-based (e.g., Ishtiaq et al., 2021). Such designs may be useful in finding associations, but they do not address the lived difficulty of actually practicing digital mediation as a parent or being distracted as a teacher. Descriptive phenomenology, employing experience itself as the unit of analysis, may recover what these designs have not.

Second, there is an insistence on the use of approaches specific to a different family and institution. Cognitive Load Theory and much of the neurobiological literature reviewed in Section 2.2 originate from Western families that emphasize nuclear family structures and strict rules regarding technology at the school level. The South Asian literature reviewed in Section 2.3 suggests that these assumptions do not translate well: multigenerational families distribute monitoring differently, and gendered access to devices contributes to the disturbance itself (UNICEF Regional Office for South Asia, 2025; Bhoi et al., 2025). This study has been centered on the conditions of Karachi rather than looking to other countries.

Third and most significant to this study's design is the isolation of these stakeholders. What is known in Pakistan about students' distraction, the practices of teachers, or the concerns of parents are often studied separately, rarely in relation to one another, and almost never with the same adolescent. Even the most methodologically similar Karachi study in this review, Mubeen et al. (2024), compares parents with professionals, rather than the teacher who is specifically watching their child. Bronfenbrenner's (1979) mesosystem and its digital-age extension by Navarro and Tudge (2022), predict that the most accurate insight into a mesosystem disturbance can be gained by finding the interactions between the two systems. This study's three pairs of teacher and parent research, each of whom was studying the same adolescent, has responded to that prediction, and highlights a gap present in every level of literature in this chapter, from the global neurobiological evidence to the most recent qualitative research conducted in Karachi.

METHODOLOGY

Introduction

The methodological pathway, which was adopted for the investigation of understanding, interpretation, and negotiation of adolescents' digital attention by parents and teachers in their educational and domestic contexts, is presented in this chapter. It explains how it is used and the justification for the choice of descriptive phenomenological design as applied to the particular research questions, outlines the methods used for selection of participants, data collection, analysis, and data validation, and describes the methods used.

Research Paradigm

The qualitative interpretative paradigm used in this study is based on the phenomenological interpretivist paradigm which conceptualizes reality as socially constructed and meaning as created by the interaction between humans and their environment (Creswell & Poth, 2018). This within-the-paradigm is characterized by the understanding that children and young people's digital attention is not a cognitive "natural ability" or "other-action" that is measured, but an active process of interpretation and response being enacted by

those who engage them in it, whether it be teachers within the classroom or parents at home. This perspective is an explicit precondition for the study's three research questions, which all concern the teachers' lived experience, lived understanding, and lived negotiation regarding ways of attentional disturbance, questions which assume meanings exist only while they are being lived rather than existing in their own right.

Justification for a Descriptive Phenomenological Design

Fit Between Design and Research Questions

The first three research questions of the study address how teachers and parents perceive and make sense of the digital attention of adolescents, the meaning they ascribe to attention disruption, and how they manage the conflict of digital involvement vs. attention disruption. The wording of the research questions centers on the lived experience and the making of meaning; it does not consider behavioral frequency, correlation, or causative connections. Descriptive phenomenology is the qualitative approach designed to answer the question: what is the meaning of the phenomenon as experienced by individuals, and how is that phenomenon encountered by individuals? Descriptive phenomenology does this in the absence of causative or explanatory theorization (Husserl, 1931; Giorgi, 2009). A quantitative approach to research would allow for the conclusion that there is a connection between screen time and attention/academic disruption. However, it would not allow for the answer to the question of how a mother experiences a situation in which her son becomes irritable when she asks him to put away his phone. Additionally, it would not allow for the answer to the question of how a teacher interprets the loss of student attention when a lecture that used to engage students for twenty minutes, now results in total classroom disengagement in eight minutes. These are the types of perceptions this study seeks to explore, and these are the types of questions that necessitate a focus on the first-person experience.

Why Descriptive Phenomenology

Descriptive (Husserlian) phenomenology is separate from interpretive or hermeneutic phenomenology by an important distinction in qualitative research. The former describes a phenomenon as experienced and brackets the assumptions of the researcher while the latter describes a phenomenon by incorporating the researcher's interpretation (van Manen, 2014). The aim of this study makes it important to adopt the descriptive approach. Given the researcher's theoretical commitments (Attention Economy Theory, Cognitive Load Theory, and Ecological Systems Theory), the way the disturbance is expected to manifest is already bound by these commitments. Therefore, those theories would simply place a strong limit on what participants would be allowed to say. The discipline of epoché within descriptive phenomenology makes it possible to place the theoretical framework when interpreting (Chapter 5). Before that, the essential structures of participants' experiences are first allowed to appear from the data (Giorgi, 2009) without any limits.

Research Setting

Pakistan's largest city, Karachi, where advanced levels of digital connectivity are prevalent among school age children, an exam-centric and competitive schooling system exists, coupled with traditional and hybrid family systems, was chosen for the study. A context-specific description was required for the research, and the questions focused on Karachi, its education and family system, so a generalized description would not suffice. For this reason, the setting was chosen as it directly responds to the questions the research posed.

Participants and Sampling

Sampling Strategy and Inclusion Criteria

The aim of the research was to create a small sample of rich data using purposive sampling as seen in descriptive phenomenology. Recruitment for descriptive phenomenology is based on the long, direct and specific experience of the people involved, and not on any particular objective to fulfill a sample. Therefore, the requirement for the parent participants was that they must have long, almost daily contact to the age range 13 to 19 of children in Karachi, and must have been their primary or secondary caregiver. As for the teacher participants, the requirement was that they had to have taught children in the secondary school age range of 13 to 19 for the last one year in Karachi. Also, to ensure the required depth of observation for phenomenological description, participants had to have continuous contact to the specific children in the study of at least the last six months.

Recruitment

The researchers recruited participants through their professional and educational connections in Karachi, using the snowball recruitment method. This method is often used for small sample sizes of qualitative research studies, as it helps to build trust between the researcher and the participants (Patton, 2015). The researchers recruited three matched pairs of parents and teachers of the same teenager and one extra individual with a high academic standing within the school.

Number of Schools and Families

Each of the three teachers selected for the study was paired with their corresponding parent from a different household and school. These schools were located within Karachi, Pakistan. By selecting participants from different households and schools, researchers aimed to minimize the impact of any single educational institution on the study. Also, by also including the senior academic who was from a school outside of both of the schools attended by the teachers, the research attempted to include the perspectives of at least three different educational institutions within the study.

Sample Composition, Demographics, and Interview Duration

The sample comprises of three females and three males, thus ensuring even gender distribution among all stakeholders, and covers the age group of 25-48 years, where the parents belong to the age group of 40-48 years and the teachers belong to the age group of 25-38 years. The interviews lasted between 35 to 60 minutes ($\approx$ M 45 minutes), where the senior academic interview (T3) took the longest time because of its wide perspective on various classrooms as compared to teaching one classroom only.

Participant	Role	Gender	Age Range	Interview Duration	Linked to
P1	Parent	Female	45 years	40 minutes	Student 01
P2	Parent	Male	48 years	50 minutes	Student 02
P3	Parent (Tech-savvy)	Female	40 years	45 minutes	Student 03
T1	Teacher	Male	25 years	35 minutes	Student 01

T2	Teacher	Female	30 years	40 minutes	Student 02
T3	Senior Academic Teacher	Male	38 years	60 minutes	Student 03

(Table 1: Distribution of sample)

Sample Size and How Sufficiency Was Judged

Six participants are within the established guidelines for conducting phenomenological studies, which suggest the use of small samples that are rich in the phenomenon being studied (Giorgi, 2009; Englander, 2012). The sufficiency of the data was evaluated using the criteria of structural adequacy as described by Giorgi (2009), although there were three specific indicators used in the analysis of these interviews to show structural adequacy.

1. Convergence of meaning units across participants. By the third and fourth transcripts analyzed, newly identified meaning units increasingly restated, rather than introduced, structures already present in earlier transcripts, such as references to short attention windows before disengagement, appearing independently across multiple teacher accounts of classroom behavior.
2. Without redundancy, the samples were constructed so that each teacher had a parent from the same adolescent's family. So, instead of counting how often a teacher or parent mentioned something about an adolescent, it was possible to confirm whether both the teacher and the parent discussed some common issue relating to the adolescent.
3. The absence of contradictory structures in the transcript. The sixth interview with the senior academic was analyzed specifically to see if it would reveal any new themes within the institution; however, its analysis revealed only the same themes as the previous interviews, showing that the sample had reached structural adequacy for the purposes of this study.

This is a judgment that is appropriate for a small, matched sample from a specific phenomenology study.

Research Tool

Data were collected using a semi-structured interview guide, developed to obtain rich, first person descriptions of participants' experience, including observed changes in adolescents' attention and learning behavior, experiences with digital media use across school and home, perceived emotional and cognitive consequences, mediation strategies, and challenges faced. The semi-structured format allowed for a consistent core of questions across interviews but also provided the flexibility to follow emergent themes specific to each participant's circumstances, consistent with phenomenological interviewing practice (Giorgi, 2009).

Procedure for Data Collection

Interviews were conducted at a time convenient to participants and took approximately 40-60 minutes (exact durations once completed can be found in Table 3.1). All interviews were recorded with the participants' informed consent and transcribed verbatim. Pseudonyms were used during transcription to protect confidentiality. The verbatim transcript retained hesitations, code-switching between English and Urdu, and idiomatic expressions, details that were of interpretive significance in descriptive

phenomenological analysis. During the process of data collection, the researcher kept a reflective field journal to note assumptions that emerged as well as to help with ongoing bracketing.

Data Analysis Procedure

Data were analyzed using Giorgi's (2009) descriptive phenomenological method, which has six steps:

1. Holistic reading for comprehension—each transcript was read in full several times to develop a global sense of the participant's experience prior to the commencement of segmentation.
2. Bracketing (epoché) — The researcher purposefully put aside previous assumptions related to digital media, attention problems and educational decline, as noted in the reflective journal, so as to read each transcript openly to the framing of each participant.
3. Identification of meaning units – transcripts were segmented into discrete units of text expressing a distinct experiential insight relevant to digital attention.
4. Eidetic transformation – meaning units were reworded in psychologically and educationally sensitive language, but still reflecting the original intention of the participant.
5. Thematic clustering—related transformed meaning units were grouped into themes representing structures of experience shared among participants.
6. Synthesis of key themes – Key themes were synthesized into a structural description that captured the essence of the adolescent digital attention experience as described by teachers and parents.

The analysis was conducted manually rather than using qualitative data analysis software, consistent with the requirements of descriptive phenomenology to be engaged closely and for a sustained period of time with the participants' own language and narrative structure (Giorgi, 2009; van Manen, 2014).

Data Validation and Credibility

This study followed the guidelines of the four criteria of qualitative rigor put forward by Lincoln and Guba (1985), which were achieved through various techniques that included the following:

- i. Credibility: Verbatim transcription, multiple readings, direct usage of participant's language in results and peer debriefing with the research supervisor to establish the data driven nature of the themes rather than being researcher driven.
- ii. Dependability: Step-wise explanation of the process of analysis consisting of six stages (section 3.8) and a tracing of each meaning unit from data to themes.
- iii. Confirmability: Bracketing was done continually by means of a reflective field journal, while transformed meaning units were checked for accuracy with the primary transcripts.
- iv. Transferability: Detailed contextual description of the setting, participants and meaning units (Chapter 4).

Ethical Considerations

Informed consent was obtained from all the participants, and they were informed about their right to withdraw at any moment, without consequence. Confidentiality was maintained using pseudonymization, plus secure data storage arrangements. Since the study was closely tied to sensitive family situations and classroom dynamics, no adolescents were interviewed directly. Instead participants had the option to step back or decline to talk about any incident they felt was too sensitive to share.

ANALYSIS AND DISCUSSION

Introduction

This chapter provides the results of the study conducted on the basis of the interviews with three matched pairs of parents-teachers, who talked about the same adolescent (see Table 3.1). This research focuses on adolescents' digital attention (13–19 years old) through its description, perception and mediation by people who surround them at home and at school.

Methodological Note on Presentation: As the interviews were based on concrete adolescents, direct quotations provided below have been analyzed and changed, where necessary, in order not to include any child-identifying information while keeping the original meanings expressed by the participants in their own words, which was done in accordance with Section 3.10.

In keeping with the phenomenological perspective of the study, the purpose of the analysis is not to quantify the incidence or extent of difficulty with attention. The purpose is to understand the fundamental structures that constitute how attention difficulties with digital technology are lived and experienced by teachers and parents. Themes emerged inductively based on participants' own words using the six steps outlined by Giorgi (2009) (see Section 3.8) and are presented here along with many quotes verbatim, so that the process of analysis may be critically examined.

Key Emergent Themes



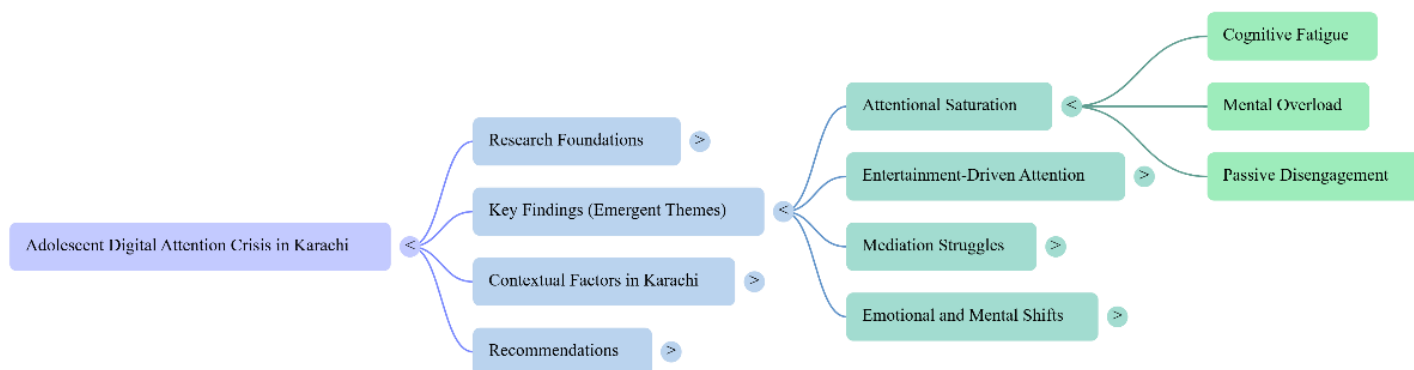
Key emergent themes included the following:

- i. Attentional Saturation and Cognitive Exhaustion
- ii. Entertainment-Oriented Attention and Disengagement in Classrooms

- iii. Difficulties of Mediation within Family and School Systems
- iv. Incremental Change in Psychological Wellbeing

All of these themes can be viewed as components of digital attention disturbance as a relational and systemic construct.

Theme 1: Attentional Saturation and Cognitive Fatigue



In all three dyads, youth were described not as inattentive by their choice, but as suffering from attention overload. It was precisely the difference between lack of attention and attention saturation that was revealed to be the structure of the theme.

The first dyad (P1, mother, 45; T1, male teacher, 25) is a good illustration of this pattern:

"I call this the 'three second video attention span'. The marketers have to capture the customer in 3 seconds or else forget about it. It is happening to children and students – their attention span has shrunk to 3–5 seconds." (T1)

P1 mentioned the following related, but highly emotional case of attention depletion in her child:

"It differs. The youngest one becomes very desperate to get access to it. All he needs to do with his phone is to kill the time." (P1)

The Dyad 2 (P2, father, 48; T2, female teacher, 30) displays the same structure at an alternative pace. T2 stated:

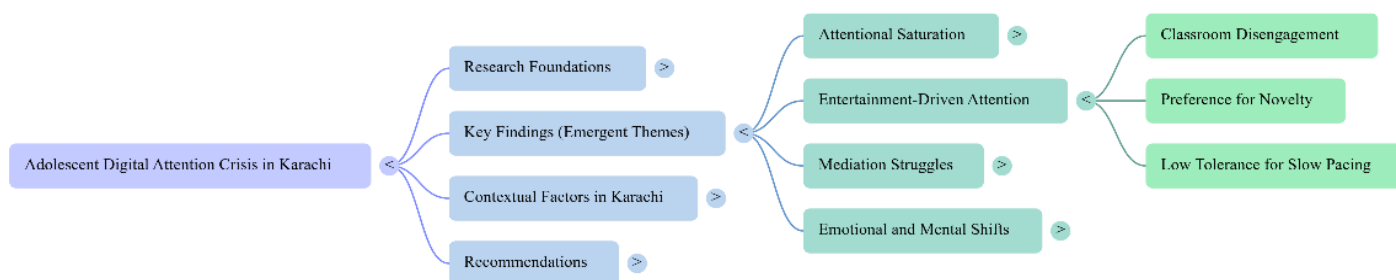
"Whenever there's an explanation that needs some serious thinking or more time spent on it, students tend to lose concentration very quickly – normally after about 8 to 10 minutes. From there on I can see blank faces, talking to each other, and even some people quietly using their phones." (T2)

This is confirmed by the independent evidence of Dyad 3 (P3, tech-savvy mother, 40; T3, senior academic, 38), displayed in Table 4.1 above, with T3's institutional figure of 10–15 minutes and P3's household version of quick disengagement when "books or long tasks" appear.

That the three independent estimations converge – from three seconds to fifteen minutes depending on task type, but always depicting the same clear structure of a rapid, predictable drop instead of a constant base

level of inattention – is significant in itself: three teachers, from different schools and different ages taught, explain the same basic pattern, although measured in different terms. Most importantly, in all cases the participants resisted the lazy, defiant framing of this behavior and referred to students as "overloaded" or "drained", not unmotivated.

Theme 2: Entertainment-Based Attention and Detachment in Classrooms



Theme 2 highlights an increasing detachment in the type of engagement that keeps adolescents engaged, towards fast, novel and rewarding content and away from efforts and reflection.

T2 (Dyad 2) highlighted this change in the currency of academic writing:

"Today's students are impatient; they want things quick and short. When I give long writing assignments, many request for conversion of their grades in points or a shorter task. They expect an immediate result; just as when searching on Google." (T2)

T3 (Dyad 3) also supported this change through the institutions level where it applies to a larger sample size compared to just one class:

"Today's students lack the ability to deal with long, complex writing tasks; they expect quick answers; they are satisfied with bullet points and direct summarization..." (T3)

The dyad 1 (T1) found the same type of pattern within the particular failure of slow, narrative classroom activities:

"In a storytelling class, I realized that despite its being face-to-face interaction, children tend to be very distracted. They behave actively at the beginning, but storytelling is a slow and time-consuming activity, and hence, the pace of the class becomes broken as soon as it reaches the slow pace." (T1)

Teachers pointed out the adaptive burden the shift puts on them. For instance, T2 admitted that she had to adapt herself to this change of students' behavior:

"I frequently find the necessity to make my lessons engaging with stories, examples, visuals and discussion. The traditional way of the lesson delivery in a classroom became boring for many of my students... Though I always try to combine engagement with right education." (T2)

T3 expressed the same conflict and took a clear institutional stand against accommodation of the conflict in its entirety:

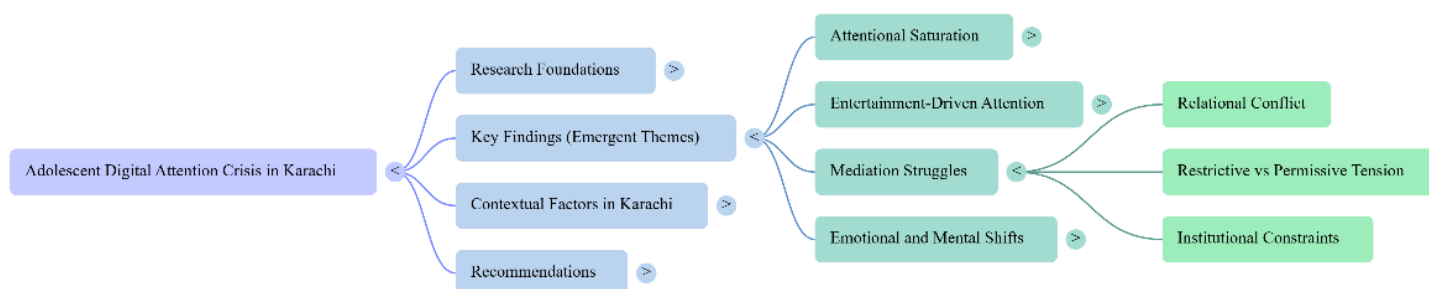
"A lecture-oriented classroom without sound has proven ineffective for a number of students today. But it is equally necessary to understand that education cannot be entertainment in its totality. We are not competing with the internet; we are creating discipline and order." (T3)

P3 supported the above point from the family context by explaining how her son's homework became subject to digital reward.

"Children find it hard to concentrate on their homework unless there are breaks with digital rewards." (P3)

Both the accounts above reflect a single structure through different points of view: the teenagers' pace of engagement has been taken over by digital media, and any academic activity seems comparatively unexciting to the teenager and observable to the adult observer in comparison to it.

Theme 3: The Challenges of Mediation Within Family and School Contexts



This theme highlights the way parents and teachers navigate the management of this problem, not merely as behavioral correction, but as a complex process of negotiation, showing a fundamentally different philosophy in all three independent families included in this study.

P1 (Dyad 1), when talking about what was not working in his relationship with his children, preferred stricter regulation:

"It would be having more control over the issue and making its usage restricted. They should not have 24/7 access and should learn to control their media usage." (P1)

On the contrary, P2 (Dyad 2) approached the process of mediation as one of preserving quality time rather than limiting access:

"It is the story of every household these days that no matter what it is dinner table or anything else, they have a cell phone or any smart device at hand...you can use it but you have to make the most of your quality family time." (P2)

P3 (dyad 3) described a third negotiated stance, along with an explanation of how it was the nature of a boundary, rather than its mere presence, which influenced her son's response:

"Strictness alone can't help in such cases. Because of strictness, kids will try to cover up or avoid following the rules.... I think the solution lies in achieving a balance. Rules are needed, but there should be trust and open communication." (P3)

"Suddenly asking him to put it aside when he is playing games or talking to his friends makes him annoyed.... But if I inform him that we will put it aside after some time, say, in 10 minutes, he behaves more calmly." (P3)

The spectrum of responses ranging from restricting first (P1), maintaining a balance between coexistence and boundaries (P2), to negotiating balance (P3) indicates three diverse parental philosophies among three different families. It seems that Karachi parents do not converge on one cultural script of digital mediation but instead resolve their conflict independently.

Teachers explained a battle that was playing out on the plane of institutional collaboration rather than individual discipline. T2 pointed out a consistent gap between school expectations and home actions:

"There is a gap that exists between school expectations and home discipline... the best answer to it would be collaboration. Parents and teachers should coordinate in order to have unified rules." (T2)

T3, having an institutional perspective across multiple classes, said almost the same thing, reaching the same conclusion independently:

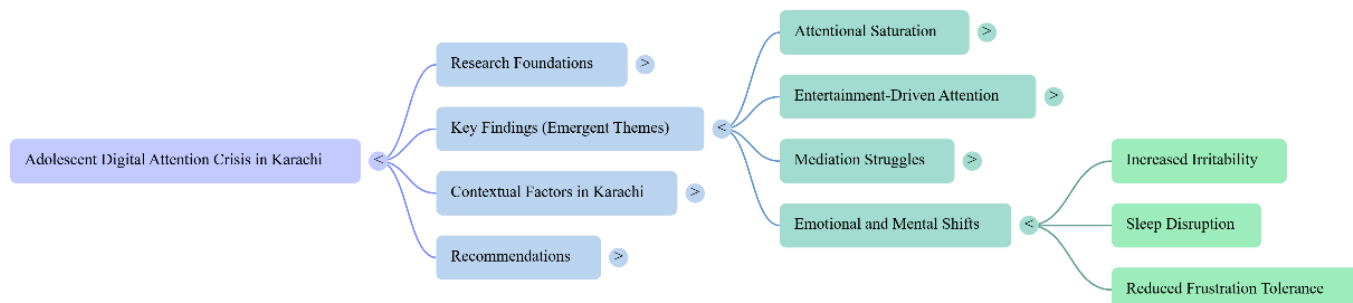
"Schools can't regulate attention, discipline, and use of devices by themselves... The best answer would be coordination – school policy about the use of devices, awareness campaigns for parents, consistency in family... There should be no contradiction between school and home because it creates inconsistency in children." (T3)

T2 also pointed out that conflict among peers which wasn't resolved earlier, now moved to the digital space:

"Students are becoming less comfortable with resolving conflicts in face-to-face contact. They continue their conflict on digital platforms through messaging and social networks." (T2)

Together, all of these stories paint mediation not as an individual job to be done by one or the other, but rather as a fragmented process that takes place across settings; a process where parents approach it differently in their own philosophies within this tiny sample set, and teachers find it undermined by a lack of coordination from home. This is the clearest example of Bronfenbrenner's (1979) mesosystem found in this study's data.

Theme 4: Gradual Accumulation of Emotional and Psychological Changes



Lastly, the theme covers emotional and psychological changes that participants talked about in terms of their gradualness and easy normalization before beginning to interfere with their functioning.

Sleep disturbance has become the most tangible and frequent example of such changes. The most thorough example was provided by P3 (Dyad 3):

"My teenager often spends night hours with his phone—he surfs social media, watches videos, or even talks with friends... It is hard for him to wake up in the morning. He sometimes seems tired, sleepy, and not entirely awake for classes. Sometimes he also becomes irritable due to lack of sleep." (P3)

P2 (Dyad 2) described this disturbance through a wider context of routine erosion:

"Due to phones, our routines are disturbed. We, even being older people, have such an addiction to smartphones that we may not go to sleep without them." (P2)

Both T2 and T3 have independently identified a similar change – in this case, a deterioration in retention which both teachers referred to as "digital amnesia." According to T2:

"Students tend to forget things quickly if they are not reviewed. Not because they don't understand, but because they do not retain and instead use online resources a lot." (T2)

This was supported by T3, who provided an institutional-level example of the consequence of this phenomenon:

"It has definitely resulted in a lack of retention of basic concepts. Students always depend on rechecking information instead of remembering them... teachers need to review these concepts more often now." (T3)

In particular, none of the participants in any pair referred to the above factors using clinical language; instead, irritability, lack of patience, and disturbed sleep were referred to in terms of gradual shifts in behavior, not psychological disorders, which distinction was deliberately maintained during eidetic transformation in accordance with the phenomenological nature of the research project (Section 1.6, Delimitation 6).

Summary of Data Analysis:

In all four of the themes that I have discussed above, there is an underlying theme that emerges from the three matching dyads, which includes that adolescents' digital attention disturbance in Karachi is felt not as absence but saturation, not simply as distraction but as a move towards a faster pace of entertainment, not as a coherent philosophy of mediation in home and schools, but as a fragmented philosophical mediation, and not as a sudden crisis but as a gradual emotional price paid. At the same time, what is evident in the data is the variation in these themes, especially in Theme 3, where three independent families reveal three very different mediation philosophies, meaning that there seems to be no cultural script yet that directs Karachi parents to deal with this conflict. It is the similarity in the first two themes that emerge from independently interviewed subjects, pertaining to three different adolescents from two different schools that provide the required phenomenological account for the current study.

DISCUSSIONS, FINDINGS AND CONCLUSION

Introduction

This chapter discusses four themes from Chapter 4 regarding attentional saturation, disengagement from entertainment, mediation struggles, and cumulative emotional changes, in light of the theory of Attention Economy, Cognitive Load, and Ecological Systems Theory. It then investigates possible explanations for these observations, reviews some of the literature reviewed in Chapter 2, and provides recommendations for teachers, parents, and schools. It concludes with a discussion of future research and a summary of what the study can offer.

Discussion of Findings in Relation to the Theoretical Framework

Theme 1 (Attentional Saturation) Through Cognitive Load Theory

This sudden convergent attention decline between three seconds (T1) and fifteen minutes (T3) in all three of these teachers is consistent with Cognitive Load Theory's model of extraneous load (Sweller, 1988; Sweller et al., 2019). What teachers and parents are calling "overloaded" or "drained" teenagers instead of simply unmotivated, mirrors CLT's distinction between a learner lacking the ability to learn or one whose working memory capacity has already been depleted by competing stimuli before learning material is presented. This distinction is critical for if the disturbance is a lack of motivation, then discipline (warnings, punishment) would likely be the corrective response; if it is a capacity issue as is in this study, perhaps the solution is to reduce extraneous cognitive load before instruction begins through short transition or grounding activities (see Section 5.5).

Theme 2 (Entertainment-Focused Disengagement) Through Attention Economy Theory

The shift toward short-reward engagement, as described by teachers, of students "requesting bullet points ... expecting instant completion, similar to searching something on Google" (T2), may be the subsequent cognitive signature of a platform designed to snag attention through immediate reward (Davenport & Beck, 2001; González de la Torre et al., 2024). What is interesting about this study's data is that teachers do not describe this shift as students becoming less intelligent, T3 specifically disapproved, but rather, students' expectation of expressing their interest have been altered by an external commercial system before they ever entered the classroom. This provides support for this study's claim (Section 1.1) that attentional disturbance is not just personal, and reframes the teacher's position of negotiation with an economically optimal system rather than against individual student traits.

Theme 3 (Mediation Struggles) Through Ecological Systems Theory

Theme 3 is the clearest example of Bronfenbrenner's (1979) mesosystem that is evident in this study. While T2 and T3 saw the same problem of misalignment between home and school giving the adolescent (T3) mixed signals, no matter what the functions of either set in isolation. This study is further illustrated by a Bronfenbrenner neo-ecological model. Consider this study's data that reflect a mesosystem complicated by a third, often invisible, adolescent's own virtual microsystem which neither parents nor teachers can observe or coordinate around. The variability in parental mediation philosophy noted in this study (P1's restriction, P2's coexistence, P3's negotiated balance) is significant in this ecological context because even when a teacher expects consistency at the mesosystem level (i.e.g., as T2 and T3 conferencing call for "coordination" and "alignment"), there are three distinct practices within three families.

Theme 4 (Emotional and Cognitive Change) Across All Three Theories

Theme 4 is most easily described as the consequence of the mechanisms outlined in Themes 1–3 functioning at a mesosystem-wide scale. The "digital amnesia" described by T2 and T3, student "depend on re-checking information instead of internalizing it" (T3), is consistent with Cognitive Load Theory, which states that information doesn't transfer to long-term memory when extraneous load is chronically high (Sweller et al., 2019). The sleep disruption and irritability described by P2 and P3 reflect the neurodevelopmental model of how the teenage brain was disproportionately sensitive to reward sensitivity to control (Crone & Konijn, 2018), and is also an attention-economy environment designed to extend this into late nighttime. The suddenness of these responses rather than sudden is significant, suggesting that these changes had a slow accumulation, not a one-day event that can determine when intervention should take place (Section 5.5).

Addressing Alternative Interpretations

A careful discussion must be conducted about whether the finding, specifically of digital media, could not be explained by other factors present in the same learning setting. Four explanations may be available.

- Teaching quality and pedagogical style:

T2 and T3 both acknowledged without prompting that traditional lecture instruction was “less effective for many students today” (T3), so they had altered their own teaching. Another possibility: some of the disengagement observed may reflect a mismatch between instructional style and student expectations, even if not digital media use itself. The data in this study are not able to distinguish between these two, as no participant taught in a non-adaptive, traditional style to test student attention. This was not intended as a fact of the design (see Section 1.9), but could be a limitation of the design (see Section 1.9) and should be explored through classroom observation of different styles.

- Exam pressure and academic workload:

The paper that informed the present study (Section 2.4) describes Pakistan's schooling system as academically competitive and exam-oriented. Perhaps some of the fatigue and irritability parents and teachers attribute to digital media reflects, in whole or part, overall academic stress, rather than digital media specifically. But, this explanation cannot explain two of the results of this study, namely that T1's attention-decline estimate (3-5 seconds) was based on comparison with commercial media time, not exam workload; and secondly, P3 reported her son's fatigue as related to late-night device use, a temporal specific pattern compared to generalized exam stress. Exam pressure is merely a plausible compounding factor rather than a full alternative explanation for this study.

- Class size and institutional resourcing:

Class sizes may not only reduce individual attentional engagement, but also may increase the perception of disengagement on the part of the teacher, regardless of the role of digital media. But, because class sizes were not collected systematically across the three teachers participating in the present study, this is not possible to completely rule this out, and is something that future research should examine (Section 5.6) and not something that this study can address.

- Socioeconomic and household variation:

The three families in this study differed in their views of mediation, but were not sampled or compared by socio-economic status. It is possible that household resources affect access to digital media and available time for mediation by parents. Given the design of the study and the small sample size, this variable was not part of this study, but it has the potential to have an impact.

All of these possible explanations did not invalidate the findings of the study, as all three teachers and two of three parents independently and explicitly attributed the reported changes to digital media use, rather than to these other factors, but did validate the strong language used for causation in this chapter and lead the way for future research into untangling these variables (Section 5.6).

Discussion in Relation to Existing Literature

As in chapter 2, this study's findings complement rather than duplicate the findings of the studies that preceded it. While Rosen et al. (2013) demonstrated sustained attention windows of less than a few minutes

from an observational classroom research study, the teachers in this study reported a similar amount of sustained attention during T2 (8–10 minutes) and T3 (10–15 minutes), suggesting that what Rosen et al. observed for a different country is evident for Karachi teachers in their classrooms. Just as Ghai et al. (2022) and Magis-Weinberg et al. (2021) argued that South Asian family structures and digital literacy differ substantially from Western settings where most of the research was conducted, this study's finding that there are three parental mediation styles in a small sample shows that even within one city, parents do not have a common style of mediation that can be reconciled with models which assume a seemingly uniform "Western nuclear family" mediation pattern of media use. Finally, while the quantitative research in Karachi (Anjarwala et al., 2023; Tajjamul & Aleem, 2022; Hasham, 2022) has documented a relationship between digital media use and behavioral outcomes, our qualitative findings provide the missing piecememorbidance of the occurrence: how that disturbance is noticed, perceived, and (unevenly) managed by the adults in the lives of the adolescent—which bridges the gap identified in Section 2.5.

Implications for Practice

As per this research objective (Objective 4 in Section 1.4), which aims to produce insights relevant to specific practice conditions, the following practice recommendations are based on findings obtained from data analysis.

For Teachers

- i. Incorporate transition buffers before demanding tasks: As it was found out that the decline in attention happens quite quickly (in 3-15 min depending on the task), a short (2-3 min) non-demanding activity may help decrease the cognitive load competing with teaching content, which is the problem addressed by Theme 1.
- ii. Offer structured and staged formats for extended writing assignments rather than abandoning the type of assignment (as suggested by both T2 and T3) or assigning long assignments without modification. For example, dividing an essay assignment into a stage of creating a bulleted outline and a stage of expanding each point into a paragraph is one of the ways to do so as per Theme.
- iii. Raise dated specific issues, not generic digital wellbeing warnings, with parents. Considering the results showing that parental mediation philosophy differs significantly (Theme 3), one can argue that sending a generic note from a school will do nothing to change anything in the household with a completely different philosophy; therefore, raising a specific issue through a personalized dialogue seems more feasible.

For Parents

- i. Opt for advance warnings instead of sudden cutoffs: One of the observations by P3 that a ten-minute warning works much better than a sudden request is a low-budget action-oriented strategy which could be implemented by other parents in comparable circumstances without changing any policies at all.
- ii. Negotiate mediation practices rather than apply restrictions: In light of the results indicating the costs associated with either restrictive (P1) or accommodating approaches (P2), P3's mediated approach, combining boundaries and trust, becomes a replicable practice specifically designed based on this research's data.

- iii. Consider the night-time use of devices as an actionable objective due to its concrete relationship with the resulting irritability and tiredness mentioned by P2 and P3, rather than as just one problem among others; a nighttime-based limitation is more actionable and sustainable than a general limit to screen time.

For Schools and Policymakers

- i. Create organized coordination between parents and teachers on the topic of digital mediation, as both T2 and T3 independently recommended, rather than relying on ad-hoc, informal collaboration. An organized, subject-specific meeting (as opposed to the general parent-teacher meeting) on the topic of device management and alignment would specifically address the mesosystem gap mentioned in Theme 3.
- ii. Do not pursue the same standardized digital-use policy approach in the absence of common cultural base on the matter in this study's findings; instead, provide parents with a choice of digital mediation strategies based on what was found to work in Karachi families.

Recommendations for Future Research

Following up directly on the alternative explanations mentioned in Section 5.3, future research should:

- 1. Combine classroom observation with interviews in order to separate the effect of pedagogy from digital media use;
- 2. Obtain systematic data on class size and institutional resourcing from a greater number of teachers;
- 3. Include parents from a greater socio-economic spectrum in order to see whether the mediation philosophy differentiation observed here (Theme 3) is related to household resources;
- 4. Replicate the matched pair design of this study for a greater number of families in order to see whether the three types of mediation philosophy noted here (restriction, coexistence, balanced negotiation) are general or specific to this sample.

CONCLUSION

The present research sought to understand the experience of adolescent digital attention disturbance by teachers and parents of Karachi within the mesosystem of home and school, a topic which existing Pakistani literature on digital distraction has yet to answer, being overwhelmingly quantitative and focused on adolescent outcomes (section 2.5). Employing descriptive phenomenology on the experience of three matched parent-teacher dyads, the present study reveals that adolescent digital attention disturbance is not a matter of simple distraction or inattention, but attentional saturation, that it is tied into a wider trend towards entertaining pace of engagement, that it involves inconsistent, divided management practices stemming from divergent parental philosophies and partial response on part of schools, and that the cost of it accumulates progressively rather than manifesting itself suddenly and dramatically. In the light of the theories of the Attention Economy, Cognitive Load, and Ecological Systems, these conclusions point to a structural-relational understanding of adolescent digital attention disturbance as opposed to an individual-clinical one. In providing Karachi's teachers, parents and schools with the theory of digital attention disturbance, which is specific to their context, this study offers them an articulation of what they have sensed for themselves already.

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Annexure:

Literature Extraction

Author(s)	Year	Type / Design	Study Objective / Purpose	Methodology / Approach	Key Findings / Contribution	Limitations	
American Psychological Association	2023	Policy/Health Advisory	Combine psychological findings on social media use by adolescents and give advice on how to implement the findings into practice.	Panel experts' synthesis of scientific literature (advice that does not rely on empirical work).	Adolescence is a vulnerable age group considering the difference between the premature development of the reward system and the subsequent prefrontal cortex maturation; advises active parental mediation.	The document itself is an advice, not an empirical work; the advice is non-context specific to South Asia and Pakistan.	
Anjarwala, Beg, Ali, Karmani, Ali, & Kanwal	2023	Empirical (cross-sectional survey)	Investigate the relationship between the use of electronic media and behavior among adolescents in Karachi.	Survey study using quantitative methods conducted in community clinics in Karachi.	A significant relationship was established between high use of electronic media and behavioral problems (irritability, distractibility, and social withdrawal).	Cross-sectional design makes causal inference impossible; self-report used; parent and teacher perspective not captured.	
Bhoi, Vijin, & Venkatesh	2025	Empirical (cross-sectional survey)	Review the factors of parental screen time, parental perception, and	Cross sectional survey among parents, India.	The screen time of parents is significantly predictive of children's screen time; highlights a qualitative research gap	It was conducted among young children and not adolescents; uses	

				technological parenting in the context of children's screen time.		on South Asian parental mediation.	correlational methodology.	
Bronfenbrenner		1979	Theoretical/Foundation al	Suggest a theory of human development based on a system of nested environments.	Theoretical/conceptual approach (not empirical).	Uses micro-, meso-, exo-, macro-, and chronosystems; the concept of mesosystems is the cornerstone of this research.	Preceded technology completely; needs adaptation (refer to Navarro & Tudge, 2022) to today's digital age.	digital
Casey		2015	Review (neuroscience)	Synthesis of circuit-based neuroscientific theories on self-control in adolescents	Narrative synthesis of literature from neuroscience of development.	Development of socio-emotional and reward sensitivity systems is ahead of prefrontal control system, thus increasing the period of risk for distractibility	Not region-specific to South Asia; not media-specific to digital media.	
Chun, Choi, Hu, & Kim		2024	Review (science communication)	Write about the effects of smartphones on adolescent brain development.	Neuroimaging study findings narrative review.	Smartphone overuse linked to changes in reward and cognitive control connectivity and impaired attention and emotion regulation.	Targeted at lay/youth readership; original studies behind findings are mostly correlative in nature.	
Cosper et al.		2026	Empirical (scoping review)	Map current research on the influence of smartphones on the brain	Scoping review that reviews 104 studies.	The most commonly found outcomes include mental disorder, sleep disorder, and problems	Scoping review rather than systematic review; primary study quality is heterogeneous;	

				functioning of adolescents.		with executive functioning.	evidence from the international level, not from Pakistan.
Creswell & Poth	2018	Methodological text	Offer comparative advice through five types of qualitative research designs, which include phenomenology.	Methodology/pedagogy book.	Develops the qualitative interpretivism paradigm and design selection criteria used in this study's Chapter 3.	General methodology guide; not specific to digital attention or Karachi context.	
Crone & Konijn	2018	Review (neurodevelopmental)	Examine the interplay between media usage and the maturing teenage brain.	Review of the literature on neurodevelopment and media usage.	The increased sensitivity to social rewards and peer evaluations among teens is specifically elicited from digitized social settings	Based on Western evidence; no mention of South Asian family/cultural setting.	
Davenport & Beck	2001	Theoretical/Foundation al (business)	Attention should be considered as an economic resource, which is rare and has value.	Theoretical/conceptual business approach	Creates the concept of the 'attention economy,' which is essential for the theoretical model of this research (section 2.1.1)	Premises predate the age of smartphones and social media; more than a business	
Englander	2012	Methodological text	Give instructions regarding techniques that should be used	Methodological text.	Influences this study's methodology of using semi-structured	Guidelines for methodology only; no empirical results presented.	

				for conducting an interview for descriptive phenomenological study..		interviews (Section 3.5.5, 3.6).		
Ghai, Magis-Weinberg, Stoilova, Livingstone, & Orben	2022	Empirical (review/synthesis)	Evaluate how representative the adolescent-media wellbeing literature is from the Global South.	Evaluation/Synthesis of Literature Published.	Research from the Global South is a small minority in terms of published literature; models from the West cannot reflect multigenerational family structure	Review-based research; no production of primary data about Karachi.		
Giorgi	2009	Methodological/Theoretical text	Transform Husserlian phenomenology into a rigorous methodology for psychology.	Methodological/Philosophical Text.	Used for developing this study's fundamental six-step descriptive phenomenological analysis (Section 3.8).	Text on methodology; its validity depends on the researcher's ability to bracket (epoché).		
González de la Torre, Pérez-Verdugo, & Barandiaran	2024	Theoretical (cognitive science)	Investigate the cognitive-scientific and political-economic processes involved in the process of attention capture by	Analysis, conceptual and theoretical (preprint).	Analysis, conceptual and theoretical (preprint).	Preprint and non-peer reviewed at time of citation; scope beyond specific use by adolescents.		

				humans and AIs.				
Hasham		2022	Empirical (qualitative, Master's thesis)	Investigate the influence of social media on body image in Karachi teens ages 13-15.	Qualitative research; semi-structured interview data and thematic analysis	Connection between overuse of social media and body dissatisfaction, social anxiety, and obsession with peer digital metrics.	Bodies only, not attention in general; one city and unpublished Master's thesis.	
Husserl		1931	Theoretical/Philosophical foundational text	Define the philosophical bases of phenomenology as a descriptive approach to consciousness and experience.	Philosophic treatise.	The origin of descriptive phenomenology and epoché.	Philosophic but not empirical work, very abstract, and must be methodologically translated into social science (by Giorgi).	
Iqbal Bhatti	&	2020	Empirical (qualitative)	Investigate attitudes among teachers regarding the use of smartphones in higher education institutions in developing countries.	Conducted in-depth qualitative interviews with 22 university professors.	The attitudes among teachers are varied as smartphones help in learning outside the classroom but create classroom management problems.	Not related to secondary education and not limited to Pakistan only.	

Ishtiaq, Ashraf, Iftikhar, & Baig-Ansari	2021	Empirical (cross-sectional)	Consider parental view of screen time and psychological distress amongst children in Karachi.	A cross-sectional study carried out at a teaching hospital in Karachi.	Relationship between parent-reported screen time and psychological distress scores amongst children.	Involves children, teenagers; correlational; clinical center.	young not single
James	1890	Theoretical/Foundation al (psychology)	A basic exposition of the concept of attention as a psychological function.	Theoretical text from classical psychology.	Lays down the concept of attention as an active, selective process fundamental to the concept of digital attention in this paper	Presupposes no digital technology; basic rather than current in relevance.	
Krumsvik	2025	Empirical/Review	Assess the influence of smartphone use and media multitasking on cognitive load.	A narrative review that integrates meta-analysis of randomized controlled trials on mobile phone distraction.	Medium impact of mobile phone distraction on immediate memory recall; higher impact on memory recall from lectures, especially women students	Based largely on the literature of Western laboratory experiments rather than classroom setting.	
Lincoln & Guba	1985	Methodological text	Define trustworthiness (credibility, dependability, confirmability, transferability) standards in naturalistic investigation.	Methodological/foundational paper	Serves as a guide to the trustworthiness standards of the current study in Section 3.9.	General guide to conducting qualitative research; not specific to phenomenology or the subject matter.	

Magis-Weinberg, Suleiman, & Dahl	2021	Empirical/Review	Explore the intersection of development and context with the use of digital media by adolescents in LIMCs.	Review paper and theoretical analysis.	LMIC adolescents usually receive smartphones without any kind of digital literacy instruction and parental monitoring.	At a review level, not primary sources; general LMIC discussion, not limited to Pakistan.
Mubeen, Fatmi, Hameed, & Asim	2024	Empirical (qualitative)	Investigate barriers and facilitators to adolescent mental health services access in Karachi through parent and professional perspectives.	Qualitative interviews with parents and mental health professionals.	Parents and professionals agree on structural barriers to access but differ in their explanations of adolescent suffering	Mental health service access investigation instead of digital attention; parent-professional, not parent-teacher.
Myers	2025	Theoretical (book chapter)	Attention economy theory should be explained within the context of a larger media ecology theory.	Book chapter of conceptual/theoretical nature.	Restates modern attention-economy principles that are at the heart of this study's Chapter 2 framework.	Theoretical chapter, not empirical and not adolescent-specific.
Navarro & Tudge	2022	Theoretical	Bronfenbrenne r's ecological systems theory should be expanded to	Theoretical/conceptual paper.	Formulates 'neo-ecological theory' and notion of virtual microsystem, directly	Theoretical elaboration, empirical not study;

				incorporate digital/virtual contexts.		informing Sections 2.1.3 and 5.2.3 of this study.	general theory, not Karachi-specific.
Ophir, Nass, & Wagner	2009	Empirical (experimental)	Determine the cognitive control differences between heavy media multitaskers and light media multitaskers through experimental cognitive tasks.	The experiment was conducted at Stanford University with a selected sample group.	Heavy media multitaskers score poorly on attentional filtering tests; thus, multitasking reduces cognitive control.	Americans from US universities; lab experiment not classroom/home environment; no age specification.	
Patton	2015	Methodological text	Develop complete guidelines for qualitative research, including design, sampling, and assessment.	Guidelines manual.	Covers the purposive sampling design and snowball sampling technique used in the study (Chapter 3.5).	Guideline book, not topic-based.	
Rahman & Hameed	2019	Empirical (qualitative)	Investigate faculty perceptions on the use of smartphones for teaching and learning at	Qualitative exploratory interviews of faculty from Pakistani private universities.	Faculty have different opinions on smartphone use, with some of them linking classroom distraction with their own teaching style.	Higher education setting instead of secondary education setting; small and regional sample only.	

				Pakistani universities.				
Rizvi, Saleem, Ahmed, Reza, Jabeen, & Jessani	2024	Empirical (qualitative)	Investigate health and social challenges of adolescents living in Karachi peri-urban settlements.	Qualitative focus groups with adolescents and parents.	Communication barrier between adolescents and parents about use of social media, mediated by gender roles.	Peri-urban/squatter settlements setting that might be different from whole Karachi population; broad topic of adolescent health, not attention-specific.		
Rosen, Carrier, & Cheever	2013	Empirical (observational)	Explore media-induced task-switching during studying.	Naturalistic observational research of students studying.	Maintenance of attention before digital interruption lasts only a few minutes; task-switching affects memory.	Students from the US; naturalistic observational research design prevents making causal conclusions; old technology.		
Simon	1971	Theoretical/Foundation al	Tackle the issues of organizational design within an information-saturated environment.	Theoretical/conceptual essay.	Creates the 'attention economy' concept – information saturation leads to attention scarcity – foundation of Section 2.1.1.	Organizational design setting; pre-dates contemporary consumer-facing digital platforms by decades.		
Sweller	1988	Empirical/Theoretical (foundational)	Investigate the effects of problem-solving approaches on cognitive loads	Experimental investigations in instructional design.	Creates the Cognitive Load Theory; working memory has limited capacity, and instructional design	Created specifically for structured instructional/mathem atics problems and not unstructured digital media settings		

			and learning outcomes.		impacts extraneous and germane loads.	(extended in Sweller et al., 2019).
Sweller, van Merriënboer, & Paas	2019	Theoretical/Review	Summarize the progress of Cognitive Load Theory in its first 20 years.	Narrative review and theoretical update.	Clarifies and extends the theory's intrinsic/extraneous/germane cognitive load distinctions; broadens CLT to apply to multiple instructional scenarios.	Specifically designed for instructional design settings; application to digital-media-induced attention disturbances is an extension developed in this thesis.
Tajjamul & Aleem	2022	Empirical (exploratory survey)	Investigate the impact of social media usage on the mental health of youths in Karachi.	Quantitative exploratory survey research.	The link between social media use and psychological distress amongst youths in Karachi has been identified.	Correlational and survey research; no consideration of experience of parents and teachers.
Telzer et al.	2026	Empirical (cross-sectional, passively monitored)	Investigate smartphone use during school time and its link to cognitive control amongst youths.	Passively recorded smartphone use data, cross-sectional analysis, American teenagers aged 11-18.	Significant use of smartphone during school hours linked to lower cognitive control.	American participants; passively recorded usage data captures behavior but not experience.
UNICEF Regional	2025	Report/Policy	Describe the digital divide between genders and its	Regional data synthesis and report.	Significantly higher rate of ownership of smartphones and access to mobile internet by	Regional aggregated data; no specifics for Karachi.

Office for South Asia			consequences for health and nutrition of adolescent girls in South Asia.		teenage boys than by teenage girls in South Asia.		
UNICEF/ITU	2022	Report/Policy	Investigate the digital gender gap in Asia.	Regional statistical report.	As far as Pakistan is concerned, boys have more access to the Internet than girls.	Descriptive statistical report; qualitative and attention-specific data are not provided.	
van Manen	2014	Methodological/Theoretical text	Explain interpretive (hermeneutic) phenomenological approach and style of writing.	Methodological/philosophical text.	Distinguishes descriptive from interpretive phenomenology and explains why this particular study adopted its approach (see Section 3.3.2).	Mainly deals with hermeneutic phenomenology which is discussed in contrast to other methodologies used in this study.	
World Health Organization Regional Office for Europe	2024	Report/Policy	Provide a regional public-health alert regarding mental problems caused by screen use among adolescents.	Public-health advisory based on the regional evidence.	Compulsive screen use is associated with sleep deprivation, anxiety, and isolation.	Region - Europe; advisory, not research paper; not Pakistan-specific.	

Literature Matrix

Source (Author, Year)	Attention Economy Theory	Cognitive Load Theory	Ecological Systems Theory	Neuro-development	South Asia / Global South	Pakistan / Karachi	Qualitative Method	Parent Perspective	Teacher Perspective	Gender / Digital Divide	Mental Health / Emotional	Total
American Psychological Association (2023)				1				1			1	
Anjarwala et al. (2023)						1					1	
Bhoi, Vijin, & Venkatesh (2025)					1			1				
Bronfenbrenner (1979)			1					1	1			
Casey (2015)				1								
Chun, Choi, Hu, & Kim (2024)				1							1	
Cosper et al. (2026)				1							1	

Creswell & Poth (2018)						1				
Crone & Konijn (2018)			1							
Davenport & Beck (2001)	1									
Englander (2012)						1				
Ghai, Magis-Weinberg, Stoilova, Livingstone, & Orben (2022)				1					1	
Giorgi (2009)						1				
González de la Torre, Pérez-Verdugo, & Barandiaran (2024)	1									
Hasham (2022)					1	1				1
Husserl (1931)						1				
Iqbal & Bhatti (2020)				1		1		1		
Ishtiaq, Ashraf, Iftikhar, & Baig-Ansari (2021)					1		1			1

James (1890)											
Krumsvik (2025)		1							1		
Lincoln & Guba (1985)							1				
Magis-Weinberg, Suleiman, & Dahl (2021)				1	1						
Mubeen, Fatmi, Hameed, & Asim (2024)						1	1	1			1
Myers (2025)	1										
Navarro & Tudge (2022)			1								
Ophir, Nass, & Wagner (2009)		1									
Patton (2015)							1				
Rahman & Hameed (2019)					1	1	1		1		
Rizvi, Saleem, Ahmed, Reza, Jabeen, & Jessani (2024)						1	1	1		1	1

Rosen, Carrier, & Cheever (2013)		1							1			
Simon (1971)	1											
Sweller (1988)		1										
Sweller, van Merriënboer, & Paas (2019)		1										
Tajjamul & Aleem (2022)						1					1	
Telzer et al. (2026)		1		1					1			
UNICEF Regional Office for South Asia (2025)					1					1		
UNICEF/ITU (2022)					1	1				1		
van Manen (2014)							1					
World Health Organization Regional Office for Europe (2024)											1	
TOTAL SOURCES	4	6	2	7	7	8	12	6	6	4	10	72

Publication Trend

