JISR management and social sciences & economics
2025, VOL. 23, NO. 2, 46–66, e-ISSN: 1998-4162, p-ISSN: 2616-7476
https://doi.org/10.31384/jisrmsse/2025.23.2.3

The Digital Deception: Investigating the Impact of Misinformation on Children's Cognitive Development and Educational Outcomes

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ABSTRACT

In the age of digital world, children are constantly subjected to misinformation, which can profoundly influence cognitive development, education levels and experience. While misinformation has been well researched among adults, its effects on young and developing individuals remains underexplored particularly in underdeveloped contexts. This qualitative article investigating how misleading online content influences the beliefs, perceptions and behaviors of children aged between 7-13 years. Using in-depth semi-structured interviews of 30 children (15 males and 15 females), who are middle-class students of the schools in Garden west, Karachi, this study explores how children perceive false information and how it affects their critical thinking, cognitive abilities, learning performance and socialization. This investigative paper is constructivist in nature based on the theories of Piaget and Vygotsky, and analyzes data using six-step thematic analysis of Braun and Clarke. By employing this methodology, the results demonstrate that children have difficulties with differentiating the truth and fiction, experience academic and emotional confusion as a result of misinformation, and benefit significantly of early media-literacy instruction. The study delivers detailed and contextual information on how children view digital content and how these perceptions influence their views of the world and academic achievements.

Article Type: Original

OPEN ACCESS

Received:
30 April, 2025
Revised:
29 May, 2025
Accepted:
2 June, 2025
Published:
30 June, 2025

Keywords: *Misinformation, Digital Deception, Cognitive Development, Educational Outcomes*

JEL Classification: *D83, I21, J13*

How to cite this article (APA): Malik, A. N. (2025). The Digital Deception: Investigating the Impact of Misinformation on Children's Cognitive Development and Educational Outcomes . *JISR management and social sciences & economics*, *23*(2), 46–66.
https://doi.org/10.31384/jisrmsse/2025.23.2.3

INTRODUCTION

Children of the 21st century are growing in a world that starts with scrolling mobile phones and ends with posting pictures (Howard et al., 2021). They are living in a place where digital interaction is a norm, from doing homework to socialization, playing games to watching videos, digital media is tightly woven into their routines (Shutzman & Gershy, 2022). But amid this connection lies a danger: misinformation. Misinformation is defined as false or misleading information that spreads across online platform and as active digital users, misinformation is very much part of them (Shtulman, 2024). Misinformation can appear as text, images, audio and video, or a combination of all these, such as artificially generated by AI-enabled tools, which can fall into several categories (see Figure 1).

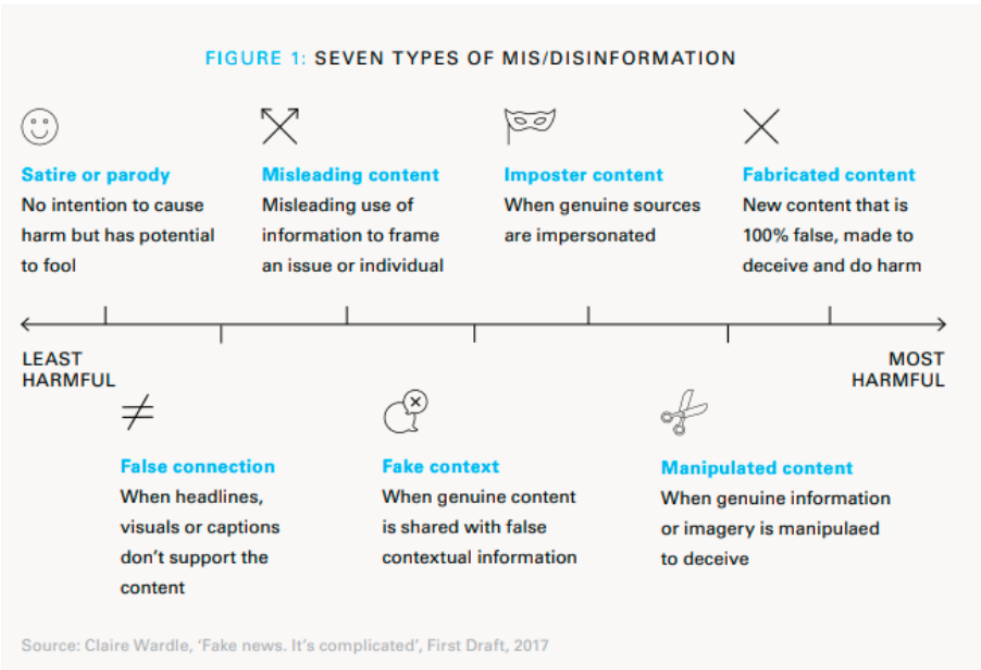

Figure 1: *Seven Types of Misinformation, Digital Misinformation and Children. (source: Howard et al. (2021))*

The children between ages 7-13 are particularly vulnerable due to their developmental stage. According to Piaget and Inhelder (1972) this age marked transition from concrete to more abstract thinking, in which children's critical reasoning is underdeveloped and they rely on the information provided to them or they focus on the visuals to identify the truth thus they become

increasingly dependent on peers and digital media for knowledge. The cognitive development of the child is extremely grounded in the sphere of social interaction and cultural means, as well as joint experience. Learning does not take place in isolation but, at the social level, i.e. through guidance, conversation and cooperation with more knowledgeable individuals, and then becomes internalized by the child. (Vygotsky, 1978). This view emphasizes that how children perceive digital content, misinformation, is determined by how they think as well as social and cultural contexts in which they are raised. Children aged 7–10 are particularly vulnerable to digital misinformation, as they usually lack critical thinking skills due to their developmental stage and tend to accept information from authority figures without question, found by Orticio et al. (2024). Access to misinformation at the very young age can distort their worldview, misguide their academic efforts and even strain friendships by affecting their emotions. Moreover, repetitive exposure to misinformation can impact their decision-making skills as they do not differentiate between reliable and unreliable source. (Dhiman, 2023). According to Fathaigh et al. (2021), as exposure to misinformation can entail negative outcomes, few experts believe that by teaching digital skills, children can not only protect themselves from these risks but also utilize the latest technology to make the most of it. While many research studies focus on its influence on adults, its effects on young developing minds particularly in underdeveloped countries in relatively underexplored. There is a limited data available to policymakers and research scholars that how prone children are to misinformation and the ways it affects their cognitive development and well-being (Howard et al., 2021). This study explores how young students in Garden West, Karachi respond to digital misinformation and whether digital literacy can act as a buffer.

Research objectives

- To explore how children, perceive and respond to digital misinformation
- To examine the impact of misinformation on their cognitive development and academic outcome

Research questions

- How do children encounter and process fabricated digital content?
- What emotional and cognitive effect does this misinformation have on them and on their educational performance?

Theoretical framework

This research study is grounded in developmental and media theories. Jean Piaget's theory of cognitive development describes that how concrete operational thinking (ages 7-11), where logic is applied to tangible thinking transition to formal operational thinking, where abstract reasoning becomes possible. During this transition, children begin to understand hypothetical situations and capable of metacognition- an essential tool for processing, questioning and verifying information (Piaget & Inhelder, 1972). Additionally, as per the theory of Piaget and Inhelder (1972) Piaget, moral development occurs in two phases: Heteronomous Morality and Autonomous Morality. In Heteronomous Morality (ages 5-10), authority figures are regarded as God whose rules are unchangeable and whatever they say is a right. Whereas in Autonomous Morality (10 and above), children begin to realize that people have different beliefs and, in this stage, children begin to form their own perspective. In today's technological world, children (aged 0-8) face more challenges due to the lack of refined intellectual capacity and emotional control (Orticio et al., 2024).

Lev Vygotsky's sociocultural theory suggests that knowledge can't be acquired in isolation, but through a shared experience and is deeply rooted in cultural tools, including digital platforms and social interactions (Vygotsky, 1978). His concept of the Zone of the Proximal

Development emphasizes the role of guided learning, in which learning is at its fullest when specific conditions are met, the critical thinking skills can be developed through learning by adults or by peers. These days they learn through browsing complicated online materials.

This model is supported by Media Literacy Theory (Levine, 2015), which implies that early teaching in media analysis and critical thinking may enable children to find their way to use digital tools responsibly. They develop the tendency to realize that whatever they have seen or heard can be fake, which results in better coping mechanisms at the time of subjection to contradictory information.

LITERATURE REVIEW

Children today are digital natives, often interacting with online content before they properly develop their cognitive and emotional capacity to discern its accuracy (Howard et al., 2021). As a result, they can not only harm by misinformation but also spread it to their peers. The research by Vosoughi et al. (2018) suggests that misinformation on social media tend to spread faster, deeper and farther among children and youth than the truthful

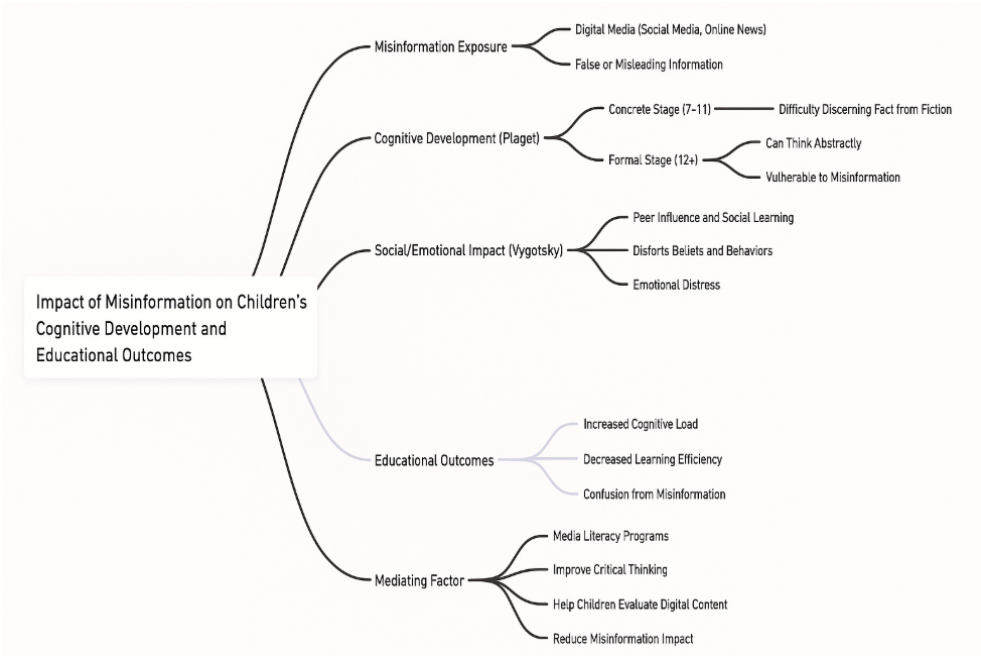

Figure 2: *(Source: Generated by Author)*

information. Similarly, as per the findings of Vartiainen et al. (2023) children often trust information endorsed by peers or popular figures.

According to Howard et al. (2021), the digital world nowadays is full of misinformation as children are exposed to unproven material on social networks, messengers, and peer networks most of the time. It also emphasizes on the fact that children are more likely to believe misleading claims is due to their natural curiosity, as well as the lack of experience when assessing the reliability of the online source. In addition, since numerous children spend time in the digital world learning, getting entertained and socializing, they may be exposed to false information and mislead their interpretation and may feel confused or anxious about significant social, health and instructional matters.

Misinformation pose significant problems to cognitive development and educational growth of children as their critical-evaluation abilities are yet to be formed (Howard et al., 2021). As noted by Howard et al. (2021) , recommendation algorithms in the social media platforms are more likely to boost emotional or sensational content, which exposes children to digital lies. These dangers are enduring especially since most of the children do not have familiarity or cognitive maturity to effectively filter the sources of information and therefore more inclined to accept false accounts. The report states that media and information

literacy (MIL) programs are worthwhile, yet they should not be limited to simple fact-checking activities; moreover, the programs should develop a deeper reasoning mechanism, as well as teach children to doubt the plausibility of the content and the credibility of its source (Howard et al., 2021).

According to the survey named Common Sense Rideout et al. (2022), teenagers on average spent 8.5 hours on digital media platforms whereas younger children allocate around 5 hours to screen-based activities. Based on the research of Ofcom (2023), minors consume their time on TikTok, Instagram and YouTube. Similarly, misinformation interferes with schema formation which is the internal structures that help children make sense of the new information Bartlett (1932). Kolotouchkina et al. (2023) stated that high digital engagement increases risk of vulnerability to harmful online content based on propaganda Similarly, Gibbs (2025), suggested that rise of digital communication has also led to deception in relationships, low levels of trust and self-esteem and emotional manipulation that results in anxiety and depression.

Lewandowsky et al. (2017) noted that false information creates confusion and increases cognitive load, resulting in decreased learning capacity. Cognitive dissonance caused by encountering conflicting information can lead to psychological stress, foggy mind and impede information retention. Moreover, exposure to continuous misinformation affects not only cognition but also emotional health. Pennycook and Rand (2019) found that children exposed to contradictory or controversial content frequently experienced confusion and anxiety. In school settings, this can lead to social tension and difficulty making friends, as some children may feel isolated or challenged for holding misinformed or different beliefs Tsfati et al. (2014).

Studies indicate that children are being fed with parallel information on internet sites and this might affect their development adversely. Especially, young children are at risk because of their developing cognitive skills and emotional control (Sharevski & Loop, 2024). Excessive media contact may result in lack of sleep, aggressive tendencies, neglect of social interaction and delays in developing social skills (Celada et al., 2025). Additionally, early years screen use relates to post-screening dysregulation and drops in academic performance in mathematics and literacy (Cerniglia et al., 2020).

In the UK, "Fake news and critical literacy: Final report" (2018), in Schools found out that only 2 per cent of children have critical skills to find out whether the content is reliable or unreliable. A majority of (60 per cent) of teachers surveyed believed that fake content is having a harmful effect on the well-being of children by increasing anxiety, damaging self-esteem and skewing their views of the world. Young people have a much more active psychological background, exposed to numerous coronavirus rumours and fake news (which

come through dedicated online sources and social media outlets). These trends potentially damage their behaviours, attitudes, beliefs, and decision-making processes (Dhiman, 2023). Addressing such problems, the professionals believe that the key issue is the development of critical thinking, media literacy, and ethical use of personal online presence. Also, parents and teachers are encouraged to keep check and control the media that children may be exposed to reduce its possible adverse effects on the children general well-being and academic achievements (Celada et al., 2025; Dhiman, 2023).

Additionally, some studies found out that misinformation detection developmental pathway goes on after childhood in adolescence where reasoning ability is more influential. Lemaire et al. (2025) established that media truth discernment (the difference between perceived accuracy of real and fake headlines) is increasing in a linear manner between 11 and 14, and is significantly related to cognitive reflection task performance. Their research also reported the illusory truth effect, whereby repeated exposure to identical headlines amplifies the perception of accuracy, both in adolescents and adults (Lemaire et al., 2025). These findings are complemented by a recent scoping review that synthesized 151 studies on the topic of young people (age 5-25) that found that, although they are highly self-confident, most of them have trouble detecting misinformation, and that their vulnerability is moderated by factors such as peer dynamics, cognitive biases, and media-literacy inequity. Such literature supports the idea that interventions should be focused not only on the way of detecting misinformation, but also on the reasons of some pieces of content being perceived as credible, the connection between cognitively based, on the one hand, and socially and education based, on the other hand.

In the face of the danger of misinformation, Levine (2015) advocates for teaching media literacy at an early age to combat digital deception. He believes that it is a need of an hour to empower children with digital literacy skills so that they can critically deal with the content available online. Bulger and Davison (2018) found that even basic lessons in media literacy significantly improved students' abilities to evaluate digital content effectively. Mihailidis (2014) suggests integrating media literacy with core subjects to reinforce critical thinking as a lifelong habit. Even though research studies portray the disadvantages of digital media, huge research supports the integration of technology in education and advocates its benefits in development of advanced skills. As per the research study by (Adeyemi, 2025), digital technology enhanced the thinking capabilities of children.

While much research exists on misinformation's impact on adults and adolescence, there is limited focus on younger children, particularly in developing countries like Pakistan. This study aims to fill that gap by exploring the cognitive,

emotional and educational effects of misinformation on children ages 7 to 13 in urban Karachi.

METHODOLOGY

Design of the Research

This qualitative study is based on a semi-structured interview with the focus on lived experience which is called phenomenology and interpretation of digital content by the children. A constructivist paradigm guides the study, which means that the subjective construction of knowledge through interaction with social and environmental beings is important. This theory is consistent with development theory presented by Jean Piaget, who posited that one develops cognitively through active learning and through development phases, and Lev Vygotsky who posited that cognitive development goes through language, cultural and peer interaction. Both theorists embrace the view that children are not sponge-like beings; they construct knowledge by means of the active dialectics with their world. With this lens, the research aims to learn the way in which misinformation, upon experiencing it online, is received, interpreted, and fused into cognitive and emotional developmental processes of children and its effects on their academic performance.

Study participants and Sampling

The sample for this research study was 30 children, 15 of them boys and 15 girls, aged between 7 and 13 years. A sample of the participants has been chosen using purposive sampling and comprised three schools in Karachi Shining Star, Little Angels, and Bright Space (pseudonyms) of which are privately owned. These were schools selected based on their socio-economic mix with a wide representation of children whose family income was at lower middle, middle and upper middle classes. Within this spectrum, the study was able to measure the extent to which the extent of digital exposure and parental monitoring can affect children exposure to information and understandings accessed online. Such approach was vital to determine how the knowledge of digital literacy can be determined not only according to curriculum but also environment at home, peer groups and the financial welfare.

Collection of Data

The data collection was done through in-depth, semi-structured interviews in safe, familiar, and child-friendly places within the schools. Ethical approval was obtained from school boards and parents. Children's consent was verbally

taken and their identities were anonymized. Initially the principals or school administrators were given the consent form. The protocols of interviews were developed with age-sensitive speech, visual aids (flashcards of fake and real headlines), and online scenario discussions to encourage communication and learning. The interviews took 15 to 25 minutes, which provided adequate time for children to be able to communicate their minds freely without much awareness. Children were requested to consider their daily digital habits, the way they recognize and respond to online materials, any guidance given to them by their parents, siblings or teachers in handling digital information, as well as the consequences of online materials on their studies, friendships and their emotions. Permission to audio-record all interviews was obtained, and, subsequently, they were transcribed verbatim and anonymized using pseudonyms to preserve the anonymity of the participants.

DATA ANALYSIS

The thematic analysis, a six-step methodology of Braun and Clarke (2006) was used: familiarization, generating initial codes, searching themes, reviewing themes, defining and naming themes, and writing up to interpret the interview data. Once the transcription was done, each transcript has been read several times to be immersed in the data. Meaningful phrases and expressions were then assigned codes, and they were organized into more general categories of themes. Among the brightest themes that were identified, the following were: Difficulty Discriminating Truth and Fiction, Effect on their Academic Performance, Social and Emotional Consequence, and Role of Digital Literacy.

Findings

The thematic analysis, the six-step analysis process, which is described by Braun and Clarke (2006) was used: familiarization, the generation of initial codes, the searching of themes, reviewing. writing up the results, defining and naming themes, and themes. After transcription, each interview transcript was read repeatedly to make sure that it was immersed in the data. The manual and inductive coding were conducted. Significant statements, phrases and patterns that were applicable to the children in digital lives were identified and designated initial open codes. These codes recorded the expressions of children of confusion, emotional responses, behaviors, and attitudes toward fake news. The coded units were then compared across transcripts to provide consistency, and comparable codes were clustered into broader, conceptual categories. These categories were coded by means of the axial coding, and they were associated with more significant trends in the data, resulting in the

emergence of the general themes. The coding process was repeated; codes were returned, combined, or changed and grouped into themes.

The final themes are listed and explained below:

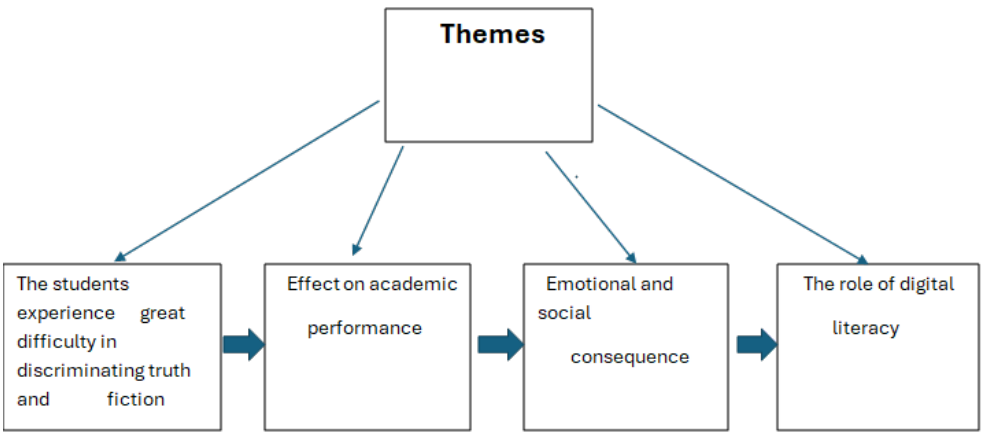

Figure 3: *(Source: Generated by Author)*

The Students Experience Great Difficulty in Discriminating Truth and Fiction

Majority of the students expressed extreme confusion between real and fake content.

Respondent 1: "I asked my mother to buy a unicorn, but she said it does not exist, but I know that she shoes not want me to buy this that is why saying in that way. Otherwise, I have seen beautiful unicorns in several videos. When I grow, I will pet a unicorn."

The respondent is unable to differentiate fiction from fact. Similarly, most of the students face problems in separating fiction and truth, deception from fact.

This observation is in line with the studies on cognitive biases in children by Vartiainen et al. (2023). In addition, younger children (7-10) are more prone to digital misinformation as they lack the critical lens and blindly believe in the authority figures which is consistent with the recent findings of Orticio et al. (2024).

Effect on Academic Performance

The students do not trust their teachers and do not actively participate in class which results in decline in their educational outcomes.

R3: "Everything is available online. The homework is done within minutes so why wasting time listening to teacher. Also, she does not know anything and says things contradictory to ChatGPT. I do not trust her. My mom says my grades decline in this year as she receives complaints from my school."

This response is given by 12 years old boy who seems to mistrust his teacher.

R10: "ChatGPT has eaten my brain. I am unable to listen and comprehend. I am addicted to it and can't survive without it."

This girl looked so frustrated yet dependent on it. Majority of the students reported decline in their academic performance due to over-reliance on ChatGPT, whereas, few students mentioned its effectiveness in studies by saying:

R2: These websites are very easy to access and use. I learn a lot from them. My grades and knowledge have improved significantly.

Exposure to constant misinformation make children's performance decline by making it difficult to believe in anything, decrease their academic focus and the decreased capacity to critically approach academic material. The false information results in confusion and lack of understanding, which consequently causes high mental burden, which affects the efficiency of learning. This aligns with the studies that indicate that misinformation causes cognitive dissonance that interferes with learning (Lewandowsky et al., 2017).

Emotional and Social Consequences

Constant exposure to digital misinformation leads to stress and emotional strains among children. It also steers them towards social isolation.

R5: "I had a fight with my friends last week because they said that Rabeeca (TikTok star) says rubbish and Jannat Mirza is credible. I hate her and her followers."

He was furious when his friends challenged his pre-existing thought pattern.

The study revealed that misleading digital information can often result in emotional distress among children including stress, frustration and anxiety, particularly when their pre-existing beliefs were challenged. Moreover, the classroom dynamics were influenced by believing the misinformation. There were children who reported that they feel isolated in the course of interacting with children, highlighting the social implications of digital misinformation in

general. (Pennycook & Rand, 2019)

The Role of Digital Literacy

The majority of the respondents were not aware that there are harmful and fabricated material available on the internet and they trusted in it without question. **R6: I know that whatever is showed on videos is always right .**

Yet few students had an idea about digital literacy.

R18: "My amma (Mother) told me that there is a lot of contradictory information on internet and I must ask my teacher for the authentic websites, when I asked her help in my homework."

The most important conclusion of the given research is the discovery of a crucial intervention which is media literacy to prevent adverse effects of misinformation. The already trained children were found to be able to process digital content better and participated in discussions in more informed and constructive way because they judge digital materials. Such results align with the works by Levine (2015) and Vartiainen et al. (2023) stating that media literacy education is a crucial component of critical thinking in the age of digital media in which responsibility is an essential attribute of proper interaction with the digital world.

DISCUSSION

Cognitive Challenges

Many children struggled to differentiate between real and fabricated content, confirming findings by Vartiainen et al. (2023) and Dumitru (2020) that children were unable to differentiate a hoax website displaying their vulnerability to digital deception. These findings also align with the research of Xu et al. (2022) which discovered that it is comparatively difficult for young children to differentiate between actual and fabricated content than adults, due to their limited cognitive reflection. Younger participants aged 7-10 especially relied on peer confirmation, authority figures or visual appeal rather than logic or fact-checking. This finding reflects the underdevelopment of abstract reasoning skills suggested by Piaget (1978). A Howard et al. (2021) survey conducted in 10 countries further endorsed these findings that younger children are in ongoing jeopardy of falling prey to digital misinformation (see Figure 2).

The weaknesses of children in detecting online deception are also explained through the empirical evidence. In a recent article, Shtulman (2024) identified

children (4-12 years old) on the task of differentiating between real and fake news stories. Nevertheless, a brief instructional intervention, either one addressing the plausibility of the content or the credibility of the source, did not have a significant positive effect on their accuracy; on the contrary, it caused them to trust all news, true or fake, less (Shtulman, 2024). Similarly, the study by O'Connor et al., (2023) suggests critical insight into how very young children perceive and engage with platforms like YouTube and YouTube Kids, revealing a tension between digital opportunity and potential harm. Their findings suggest that children's understanding of platform content is deeply shaped by adult mediation as well as the design of the platform itself: children are not passive consumers, but frequently interpret and react to what they see, yet lack the capacity to fully grasp algorithms, monetization, and the distinction between entertainment and commercial content. These results are consistent with the findings of this research study.

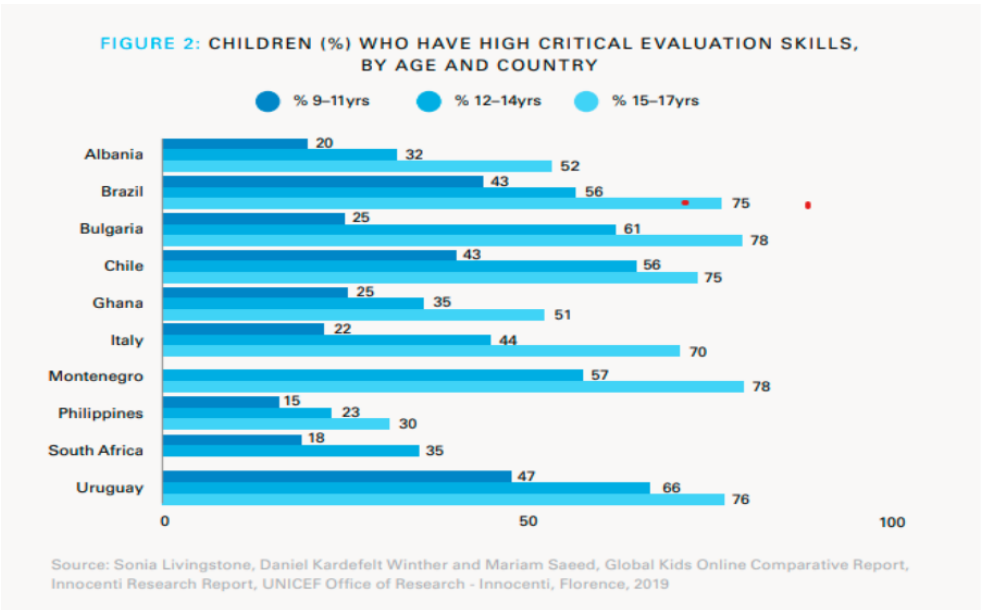

Figure 4: *UNICEF Office of Research, Innocenti, Florence, 2019*

Academic Disruption

Participants reported difficulty in concentrating and completing their assignments or projects when encountered contradictory online information. They also mentioned that they found it difficult to believe their teachers when they

shared different information from the one that is available online which led to questioning the credibility of teachers and they believed that teachers do not know which is consistent with the findings of Zaborova (2021). This belief system led to confusion and inattentive behaviour in classroom which resulted in visible decline in academic performance. The study conducted by Homaid (2022) align with this finding that fabricated content led to exhaustion and technostress which in turn decline the academic performance. These findings echo Lewandowsky et al. (2017) and indicate that misinformation can undermine trust in educators.

Emotional Strain and Social Dynamics

Children mentioned feelings of anxiety, guilt and shame when peers or teachers challenged their online beliefs, which arose conflicts among young children and emotions of anger, sadness and rejection heightened. Stress and isolation in young children stem from these negative emotions. This strengthens the social and emotional strain described by Pennycook and Rand (2019) and confirms a statement made by Vygotsky that learning is inherently social. Tahir (2023) surveyed about in the framework of a study in Pakistan. The 400 active users and discovered the fake news on WhatsApp and Facebook exacerbated user fear and anxiety. Women were especially more terrified as compared to men.

Digital Literacy Effect

The children who had been trained in assessing online content (through schools or parental guidance) in a basic manner showed better confidence in discerning online material. They also better dealt their emotions when exposed to contradictory information. This validates the arguments made by Levine (2015) and Bulger and Davison (2018) rega**r**ding the effica**c**y of early digital literacy education.

The results related to this paper are consistent with the evidence provided worldwide, which points to the multidimensional nature of the connection between the online activity and exposure of children to misinformation. UNICEF (2021) points out that misinformation, or the spread of false information, is incredibly fast in the online environment, and it may have a considerable impact on children in their comprehension of social, health, and educational challenges. Children are very susceptible due to their inexperience in assessing online content and the exaggeration of sensational information by algorithms. To add to this view, UNICEF Innocenti (2019) mention that even though access to digital tools can be an invaluable experience of learning and participation, it also presents children with risks, particularly to those who use digital means more

actively. The Global Kids Online report also indicates that the more children have access to digital tools, the more they are at risk of exposure to misleading or false information, which also shows the contradictory nature of the fact that the opportunities and vulnerabilities of children online tend to grow together. It is the combination of these insights that produces a sense of urgency of interventions that would make a difference and safely allow children to explore online space and to make judgments with the help of information that they encounter.

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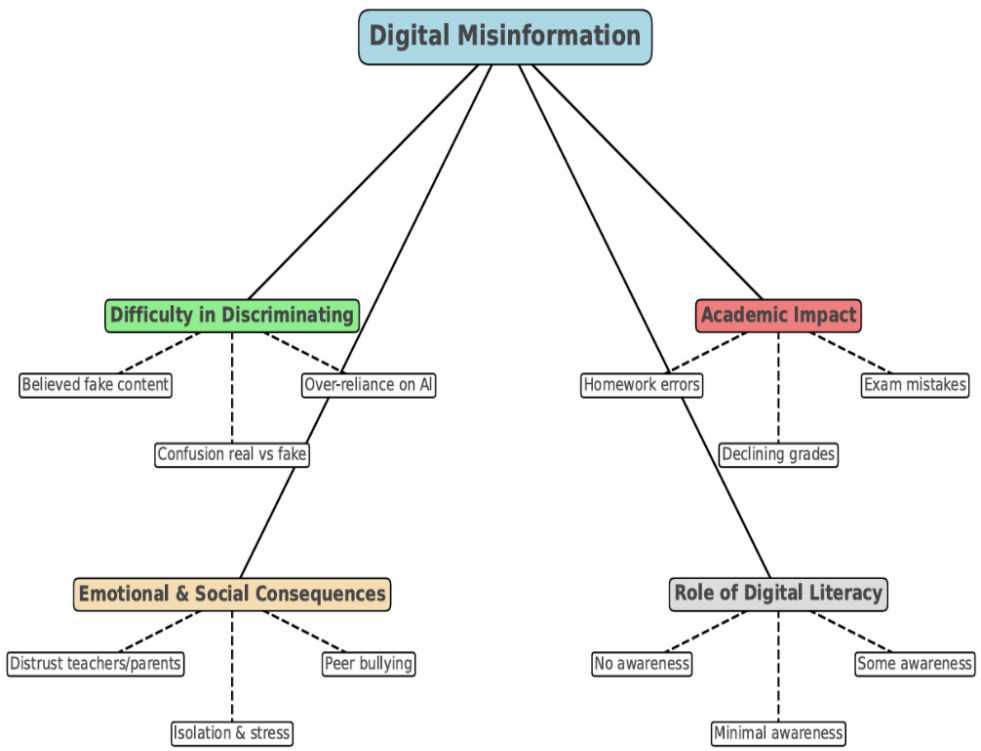

Figure 5: *(Source: Generated by Author)*

LIMITATIONS

- The study was conducted with 30 participants from urban schools in Karachi. It limits the generalization. Additionally, the results cannot apply on rural and out of school children.

- The study relied on self-reported information from children regarding their online activities, media usage and perceptions of misinformation. Such data may be influenced by social desirability bias, potentially affecting the accuracy and reliability of the findings.
- The study did not include objective measures and tools of children's media literacy, critical thinking, or cognitive skills, instead relied on self-reports and observational data, which in turns limits the ability to precisely quantify the impact of misinformation exposure on cognitive development.

RECOMMENDATIONS

- Future research should include a diverse and larger sample to enhance the generalizability of the research.
- The research studies in the future should be done on the mixed methods to increase the reliability.
- Future studies should aim to include the rural and non-going school children to better understand the applicability of the results.
- Incorporate digital literacy in the school curriculum and train teachers to lead the students towards quality and credible sources of information on the Internet.
- Educate teachers that work in trains on how to detect and respond to the misinformation that happens in their classroom and teach them to think critically by engaging with the media use of the students.
- Facilitate cooperation between educators, IT specialists, psychologists, and policymakers in coming up with holistic plans of safe and responsible interactions in the digital realm.
- Provide parental education and awareness of the usefulness and harm of AI tools, screen-time, and digital applications and promote parental engagement.
- Make socialization skills, teamwork, and the capacity to deal with conflicting ideas in a constructive manner more part of daily lesson plans through the use of physical, group, and role-play activities.
- Send policy frames of child-safe online spaces, employ school counselors to mitigate the impacts of digital addiction and screen-related anxiety, and encourage future studies of the risks emerging online.

CONCLUSION & IMPLICATIONS

This study provides valuable insights that how children aged 7-13 perceive and interpret digital content, the area that has immense learning potential and also poses serious threats. The results shows that children are exposed to a significant portion of misinformation via the digital platform and that many of the participants were not able to recognize or critically assess the misinformation. Such a challenge in differentiating between persuasive and deceptive material can be seen to have a direct effect on their cognitive growth, academic habits and social relationships. Misinformation was found to cause confusion, anxiety and cognitive overload hence children were found to have difficulty in trusting teachers or authoritative channels.

As a result, these effects not only hinder the academic learning process and classroom interaction but also peer relationships and the social development of children, which is why the impact of digital material is so broadly spread across the life of a child. Theoretically, the research is based on the developmental approaches of Piaget, Vygotsky, and Levine. According to Piaget, the cognitive development stages indicate that children within the age group under study are in a period of moving away to abstract thinking, but they still need to be scaffolded to appraise complex information. The sociocultural theory was developed by Vygotsky and emphasize the importance of guided learning and collaborative experiences, which implies that critical evaluation of the digital content by the children can be developed by using adult mediation, peer discourse, and educational tasks. The media literacy theory by Levine emphasizes that if we train children about the digital navigation and its' safety measures, they will be better able to deal with the threat of misinformation effectively.

In the real-life context, the study indicates the significance of the necessity to establish digital literacy and critical thinking at an early age. The children will be through these abilities, become capable of making responsible digital practices since they are able to analyze the information that they encounter on the Internet, identify authoritative sources, and arrive at the conclusions. Digital literacy can also as an element that can facilitate the achievement of academic performance by enhance comprehension, listening and problem-solving skills as well as develop social-emotional development, as children become more self-assured in assessing information, resisting misleading information, and communicating effectively with others.

The implication to the stakeholders is gigantic. Caregivers and parents should do more active engagements in the online lives of the children by taking care of the online actions and providing suggestions on the safe and responsible use of

the data and also talking about the credibility of the information that transpires along the way. The educators should incorporate the digital literacy modules in the curriculum, which will involve the application of such activities as source evaluation, questioning, information on-line, and the reflections on critical thinking. To develop this further, digital literacy can be combined with physical and social activities in schools that reduce the anxiety which comes with screens. The need of an hour is to the policy makers and educational authorities to offer systems that ensure child-safe internet environments, teacher development and provide resources that facilitate the navigating of parents around the digital space with their children. More than that, the cross-sector collaboration of educators, psychologists, IT professionals, and policymakers is essential. Social support, which gives the children the capacity to think critically and creatively, and experience the digital guided environment can enable them to seek responsible means of communicating with the technological world that is increasingly getting major source of information, and becomes a norm of social and personal lives on a daily basis. The implications of this study are wide spread. Parents, teachers and policy-makers should establish digital literacy as one of the priorities of early education. Schools should incorporate age-related lessons to educate the children on source evaluation, doubt what they read, and critically reflect on what they read. Additionally, it is vital to have collaboration between teachers and parents to direct children over the internet has classroom experiences and extracurricular experiences.

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