Childhoods in Digital Culture:
Challenges for Early Childhood Education[1]

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ABSTRACT

In this article, we analyze how Digital Culture shapes childhood in contemporary times through children's oral narratives, based on their screen experiences and the impacts on Early Childhood Education. The methodology falls within the field of qualitative research with children, using participant observation and conversations with voice recording as a procedure during the daily routine of a preschool group (children aged five and six). The analysis shows that children experience various screen-related activities tied to entertainment outside of the school environment, which affects their childhood in terms of learning, interacting, and playing. This calls for rethinking pedagogical practices in Early Childhood Education to align with the new configurations of childhood.

KEYWORDS: Children and Childhood; Screens; Digital Culture; Early Childhood Education.

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Infâncias na Cultura Digital: desafios para a Educação Infantil

RESUMO

Neste artigo, analisa-se, por meio de narrativas orais infantis, como a Cultura Digital produz as infâncias na contemporaneidade a partir das experiências em telas e os reflexos para a Educação Infantil. A metodologia se insere no campo da pesquisa qualitativa com crianças, tendo como procedimento a observação participante e a conversação com uso de gravação de voz na rotina da pré-escola de um grupo de crianças (cinco e seis anos de idade). As análises demonstram que as crianças vivem diversas experiências por meio de telas atreladas ao entretenimento fora do âmbito escolar, que afetam suas infâncias nos modos de aprender, de interagir e de brincar demandando para o campo da Educação Infantil repensar as práticas pedagógicas se alinhando as novas configurações das infâncias.

PALAVRAS-CHAVE: Crianças e Infâncias; Telas; Cultura Digital; Educação Infantil.

Las infancias en la cultura digital: desafíos para la Educación Infantil

RESUMEN

En este artículo analizamos, a través de narrativas orales infantiles, cómo la Cultura digital produce infancias en la época contemporánea a partir de experiencias en las pantallas y sus consecuencias para la Educación Infantil. La metodología se encuadra en el campo de la investigación cualitativa con niños, utilizando como procedimiento la observación participante y la conversación, mediante grabación de voz, en la rutina preescolar de un grupo de niños (cinco y seis años). Los análisis demuestran que los niños viven diferentes experiencias a través de pantallas vinculadas al entretenimiento fuera del ambiente escolar, que inciden en su infancia en las formas de aprender, interactuar y jugar, exigiendo que el campo de la Educación Infantil repense las prácticas pedagógicas en línea con los nuevos escenarios infantiles.

PALABRAS CLAVE: Niños y Niñez; Pantallas; Cultura Digital; Educación Infantil.

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Introduction

We know that humans, as cultural subjects, are shaped within the symbolic webs of culture, which are geographically and historically contextualized. In the current scenario, we can say that we live in what has come to be known as Digital Culture. The contemporary forms of culture have transformed people's ways of life and, consequently, children's experiences, reconfiguring their childhoods.

At the core of the formation of Digital Culture is the development of communication and information technologies, particularly the advent of computers and the internet, which inaugurated the digital era through the universal language of bits (Lévy, 1999). Digital Culture is characterized by media convergence (Jenkins, 2008), the establishment of availability, choice, and individuality (Santaella, 2003), connectivity, interactivity, participation (Jenkins, 2008), mobility (Bortolazzo, 2023), and the intensive use of screen-based devices, especially mobile ones. These characteristics of Digital Culture intensify the already present logic of immediacy, ephemerality, and the breakdown of linearity. Additionally, it reinforces the centrality of images (Jameson, 2004) and consumption (Bauman, 2021) in 21st-century societies.

In this context, numerous studies, such as that of Madigan and colaborators (2023), have documented children's increasing access to and prolonged use of screens. Considering this aspect, we pose the following question: How does Digital Culture shape childhoods today through children's screen experiences, and how do these experiences reflect on Early Childhood Education? Our objectives are: to analyze a set of oral narratives created by young children in a school environment that address their screen experiences and to reflect on the demands that childhoods shaped by the networks of Digital Culture generate for Early Childhood Education.

Methodology

This article is based on research conducted by the authors. The empirical data come from the doctoral research of one of the authors, approved by the Research Ethics Committee of UFRN-CEP/HUOL under report number 6.211.050.

The research methodology follows a qualitative research approach with children (Corsaro, 2009; Muller & Carvalho, 2009; Marchi, 2018). The data collection method was a Field Study conducted in a Municipal Early Childhood Education Center (CMEI) in the city of Natal-RN during August and September 2023. The procedures included participant observation and audio-recorded conversations using a mobile phone.

The participants were seventeen children (five and six years old), eight girls and nine boys, who attended a Preschool class. The children were consulted about their willingness to participate in the research and were informed about its objectives and procedures. Children's assent was understood as situational (Ferreira, 2010), meaning that, throughout the research, we remained attentive to any expressions of refusal or acceptance of the researcher's presence in their lived experiences. Parents or guardians provided consent, as did the teacher, allowing the research to take place. To ensure anonymity, we chose not to disclose the name of the educational institution and used fictitious names freely chosen by the children themselves to protect their identities.

The analysis was developed based on the transcriptions of the recorded conversations and the construction of analytical categories in relation to the theoretical framework. The audio transcriptions were conducted verbatim to respect the children's voices while also highlighting the characteristics of oral language, which differs from written language.

Being a child and experiencing childhood in the Digital Culture

Children who grow up in the Digital Culture consider the screen-based world their natural habitat. It is within this environment that many of them spend hours of their day engaging in various activities related to entertainment, education, communication, and problem-solving in daily life. As a result, from an early age, they develop familiarity with different screen interfaces and various media formats. In Scenario 1, we identify some of the activities that the children in our study engaged in through screens at home:

Scenario 1 – Megan's Dance

The Flash — Look what I can do! (jumps, lifting his legs up)

Girassol — That's part of Megan's dance!

Researcher — Who is Megan?

The Flash — Megan is from, is from, is from, is to destroy [...]

Researcher — And where can you watch Megan?

Barbie — It's in the **game, on TV, and in cartoons.**

Superman — Actually, it's a **serie**s that became a **movie** that is now a movie again to turn back into a series. [...]

Researcher — Girassol, have you watched it?

Girassol — Yes, on my phone! Every day I **listen to music** on my phone! [...] Yeah, **I play, watch,** I like the Pop It game [...]

(Audio transcription, 2023, emphasis added).

In this excerpt, it is possible to identify that games, music, movies, series, and cartoons are activities that children frequently access through screens. Another point is that, when discussing their screen experiences, they reveal the flow of content across different media— *"Actually, it's a series that became a movie"* and *"It's in the game, on TV, and in cartoons"*— indicating the interaction between these media, a characteristic of media convergence (Jenkins, 2008).

The flow of content across media constitutes a cultural practice as it induces a continuous migration between different platforms to follow specific content. This, in turn, encourages children to adopt a behavior of constant transition rather than permanence. In the context of Early Childhood Education, this behavior may lead to difficulties in maintaining focus on a single activity for an extended period—something observed in our research, as it was common to hear children asking what they would do next, demonstrating a certain level of anxiety in transitioning between activities.

The profusion and active participation of children in Digital Culture through screen activities, as demonstrated in Scenario 1, produce the phenomenon qualified by Dornelles (2005) as cyber-childhood. The author defines cyber-childhood as the "[...] childhood of those who are connected to the digital sphere, to computers, the internet, games, the mouse, self-service, remote controls, joysticks, and zapping" (Dornelles, 2005, p. 80). A childhood that is not only connected but lived through screens.

Individuality (Santaella, 2000), availability (Bauman, 2021; Harvey, 2008), mobility (Bortolazzo, 2023), and continuous access to mobile screen devices represent a profound transformation compared to the analog media that had a mass audience, with set times, dates, and places to happen. Through instantaneity, continuous availability, connectivity, and interactivity (Jenkins, 2008), these devices gain a relevant space in children's lives. Thus, they capture their attention through entertainment, charm, and pleasure (Couto, 2013), penetrating their lives and constantly addressing them through images and practices, configuring many aspects of childhood today and creating challenges and demands for institutional education for these children.

"The computer ended up giving me a lot of intelligence": other ways of learning

Television, together with cinema, initiated the spread of moral, ethical, aesthetic values, norms, and cultural standards on screen, especially regarding consumption, possibly differing from local traditions, in a language fully accessible to children—the image. This opened up a range of possibilities for information and identification that escaped the control of traditional education and local cultures (Postman, 1999). Mobile screen devices in some ways enhance this phenomenon, although their emergence takes place in a more globalized sociocultural context, distinct from the one in which television first emerged.

In this sense, Steinberg (1997, p. 123-124) points out that "Once parents no longer have control over their children's cultural experiences, they have lost the role they once played in shaping their values and worldviews." This fact is related to Dornelles' (2005) consideration that the media has produced a dangerous childhood. Because children shaped by experiences on screens escape, to some extent, from the systems of knowledge, discipline, governance, and control of adults and families.

In this direction, they become more challenging and disregard authority figures (Postman, 1999). Therefore, they don't need permission to act (Steinberg, 1997), due to their understanding of themselves as capable and independent. Furthermore, they discuss, give opinions, and deliberate on issues related to their lives, such as consumption, leisure, clothing styles, footwear, and interests (Couto, 2013).

In these circumstances, it becomes evident that other modes of learning mediated by screens are being shaped through multiple practices, addressing different contents, values, and precepts, which often oppose those found in local, family, and school cultures. One does not need to be particularly attentive to children to notice that many of them have a broad mastery of skills and knowledge about various topics never studied at school or learned from their families.

The easy and widespread access to mobile screen devices accentuates these situational changes, in addition to transforming the human relationship with media devices, which become a kind of extension of the body and of unlimited, continuous, and perpetual access to the world and information. Digital media change the type of relationship children have with screens, moving from a moderately passive posture in front of analog TV (Lévy, 1999) to an active posture in relation to the possibilities of choice (Santaella, 2003), participation, and interactivity (Jenkins, 2008) that these media provide. It is possible to capture the movement of participation in Digital Culture in the dialogue that occurred between these children in Scenario 2:

> Scenario 2: **TikTok and YouTube**
>
> Jacks — **On my YouTube, I'm going to do, I'm going to do challenges, like food challenges, watching videos, teaching how to do things, games**. Just like Jonh Martinez's channel, he teaches how to do a lot of cool stuff. [...] I watch YouTube only on the TV. [...]
>
> Cupcake — **I watch** TikTok and, and, and YouTube [...] **I post videos singing** [...]
>
> Coração — I have Disney on TV, I watch movies [...] I watch a lot of movies [...] (Audio transcription, 2003, emphasis added)

It is important to clarify that, even when sitting still in front of the TV, children are not fully passive, as meanings are not embedded in the message, even when it comes to the image, but are constructed by the children, requiring some level of mental activity (Buckingham, 2006). Another point is that when children declare they will make a video, they are pointing to their subjective intentions formed from their screen experiences and to the possibilities of participation in this culture (Jenkins, 2008; Lévy, 1999), as producers, but it does not necessarily mean that they are doing or will do it.

In this sense, digital media continuously call on and reinforce children to act at some level in these environments, so that they alternate

between being viewers and producers (Couto, 2013; Jenkins, 2008; Lévy, 1999). In Scenario 3, we also identify the children's intentions as producers in these media.

> Scenario 3: **Many videos to post on YouTube**
>
> Jacks — **I'm going to make a video on YouTube** (speaking simultaneously with Superman)
> Superman — **I'm going to record a video on YouTube too!** [...]
> Hulk — **I've already made a lot of videos to post on YouTube!** [...]
> Jacks — **I'm going to post it on TV, on the tablet, on the phone, on TikTok.**
> Superman — **I'm only going to post it on the computer, phone, tablet, and TV.**
> Cupcake — **I have a channel on YouTube!** [...] It's (says the channel name) **I post videos singing** [...]. (Audio transcription, 2023, emphasis added).

According to Couto (2013, p. 905), one of the main differences between TV and new digital technologies is that the latter "[...] ceases to be an influencer and trend setter, and instead calls for, exalts, and celebrates participation and collaboration, thus establishing a gift economy among internet users [...]". In the excerpts — I'm going to make a video on YouTube — I'm going to record a video on YouTube too — I have a channel on YouTube — we can identify how children are affected by the media's call for participation; they don't just want to watch, they want to be part of it, to be on the screens.

Thus, children are involved in the media's appeal to make them participants and collaborators, not just an audience. In this process, they face a vast set of learnings related to how to operate these media, ways of being and acting in these environments, the languages used, types of discourses,

among other necessary mechanisms and arrangements. In this regard, "Children are seen as a competent and sophisticated audience, rather than simply passive victims of media manipulation" (Buckingham, 2006, p. 76). In this way, children are, to some extent, cognitively active in their use and interpretations of the media, as, by occupying these spaces, they reinvent them through their participation, languages, and cultures.

Scenario 4 brings an excerpt from the researcher's interaction with a child participant in the research, during which the child asks the researcher to show on the phone (which is being used to record the conversation) the game they were talking about.

Scenario 4: **Downloading the game Blox Fruits**

[...]

Researcher — How do we download it?

Hulk — You go to the Play Store, **(he runs his finger on the phone screen, which is in my hand, looking for the app)** here, you're going to type Roblox, then (points to the place to type).

Researcher — What are the letters?

Hulk — The letters? Let me say something here that will make it faster **(takes the phone and activates the voice command)** [...]

Researcher — It's downloaded!

Hulk — You, **you have to put in a password**, let me see here, you have to remove [...] Wait! Not there, **you're going to press here to type Blox Fruits.** [...] Enter the game, **I'm going to show you how to play** [...]

Researcher — I want to take a screenshot, it's not working.

Hulk — **Not there, you're going to have to touch the screen, I'll teach you**, you have to press [...] (Audio transcription, 2023, emphasis added).

It is possible to identify in the numerous highlighted passages the child's mastery of all the actions required to download, register, and operate the game, as well as other phone functions, such as taking a screenshot. This mastery is related to the fact that digital media are interactive and individualized (Jenkins, 2008; Santalela, 2003a), requiring users to learn how to operate these technologies, as observed in the dialogue above.

Moreover, when faced with the potential problem of not knowing the letters that make up the name of the game, the child quickly used the voice command, demonstrating proficiency with the functionalities of this technology, while the researcher struggled. The fact that the child has more control over the functionalities of this technology than the researcher, and is thus capable of teaching her, somewhat reverses the roles of teacher and learner. The mediator of the learning process remains the one with more experience (Vygotsky, 2008), but in this context, it is the child, which gives her the authority associated with the position of the one who knows and teaches.

It is important to emphasize that we do not mean to suggest that children have an innate potential for mastering digital screen devices or that they possess full knowledge of these resources. Rather, it is that, living in a world where much of life happens through screens and handling them frequently, they learn and develop certain skills to operate them from a very young age. In this way, they are constantly learning through the countless experiences they have in these environments and the content they access.

Hulk's performance in the discrimination of numerals, presented in scenario 5, is an example of learning related to content that previously belonged almost exclusively to the domain of schooling. While the researcher was downloading the game the child wanted to show, Hulk correctly named the numerals that appeared on the screen, indicating the loading percentage of the game. The child started counting from numeral 29 and continued up to 100.

Scenario 5: **The computer gave me intelligence**

[...]

Hulk — Yeah, this one takes a while because it has several games inside it, it's heavy, but it's going fast, look, 29, 30, 33, 34, 35 [...] 44, 45 [...] 50 [...] 95, 96, 97, 98, 99, 100, done!

Researcher — Do you know all these numbers? How did you learn them?

Hulk — On the computer, it ended up giving me a lot of intelligence. [...] (Audio transcription, 2023).

It is interesting to highlight that on other occasions, this and other children referred to, identified, and wrote numerals in the thousands, contrasting with the number line displayed in the reference room of the class, which only had numerals from 1 to 30. This suggests, in a way, that these children have knowledge related to the field of mathematics that goes far beyond what is typically thought of and planned for the curriculum in that class's Early Childhood Education, creating a mismatch between the children's real and potential development levels and the educational proposals developed at the school (Vygotsky, 2008).

In Scenario 6, we observe how children interact with numerals in activities such as digital entertainment games:

Scenario 6: **It's level 525!**

Hulk — I'm on Sky Island!

Researcher — Which game?

Hulk — Blox Fruits, especially since I'm at **level 502.** I keep, keep killing the little guys!

Bowser — And you also find fruits in the game. I have two leopards.

Hulk — He got two permanent leopards, plus **3,000 Robux**. To get her permanently it's 3,000 Robux [...] If Bowser is at the second stage of Blox Fruits, **then he's already at level 700**. Later I'll go to the island **that's level 600**. You have to kill the little guys to

get to level **700 to go to the second stage** [...] **The prison
island is level 190**, the war island is level **250**, the volcano island
is level **300**, the strange world, the strange world **is 375**, almost
400 [...], yeah, it's level **525 or 550, or 575** [...] (Audio
transcription, 2023, emphasis added).

We observed that the formatting of the digital entertainment game
allows children to access and interact with numerals on a scale that normally
did not belong to the everyday lives of children in this same age group just a
few years ago. The manipulation of numerals was generally related to their
age, house number, number of siblings, times, days, shoe size, money, product
prices, or quantities of objects—numbers that represented much smaller
quantities. This is an example of a change in the configuration of children's
learning processes today, which no longer strictly depend on their experiences
in school and family environments.

We infer that this participatory, collaborative, autonomous child, who
learns in various ways and through many media they access, challenges
school spaces that are still configured as environments of passivity,
obedience, and audience. This is because they do not fit into these formats,
thereby destabilizing them. In a way, this reality demands a reformulation of
practices and curricula in educational institutions, or at least a rethinking of
their concepts of children and learning.

Opening another analytical perspective, we explore how common actions
in screen experiences teach certain mental functioning modes. According to
Jenkins (2008) and Sarlo (1997), the increase in the number of TV channels and
the use of the remote control led to the behavior known as channel surfing. That
is, the behavior of switching channels rapidly, which has been intensified in digital
media due to the vast range of activities a simple cell phone can support. The
channel-surfing behavior can be observed in Scenario 7.

Scenario 7: **Channel surfing on the phone**

> [...]
>
> Coração — I play on my mom's phone, sometimes on my dad's.
>
> Researcher — And what do you play?
>
> Coração — I play on Roblox, the house-building one, then I play...
> I forgot, then I leave the game to go to YouTube to watch cartoons,
> then I watch Lucas Neto [...]. (Audio transcription, 2023).

In the child's account of their experience, it becomes clear that when in possession of a cellphone, they choose what type of activity to do. They start a game, but then switch to YouTube, where they watch cartoon channels, likely scrolling through several options before selecting one, and later access other types of videos, like those from the mentioned YouTuber. In this fragment, we can identify not only the successive and scattered change of activities within the range of options available on the phone screen (Sarlo, 1997; Santaella, 2003), but also the lack of permanence in the chosen activities, driven by the diversity of accessible media. This characteristic defines much of the children's experiences in the Digital Culture.

The experiences lived by the children, involving constant changes, scattered, non-linear choices, and fragmentation, when internalized as higher functions through learning processes, start to constitute the children's mental functioning. This is because all mental activity is first a social experience (Vygotsky, 2008). Thus, it can be inferred that the children's mental functioning may be formatted for non-linearity, randomness, and dispersion.

In the school setting, this means that children may have more difficulty following a linear sequence of actions and maintaining focus until completing an activity. This is because school tasks generally require concentration and linearity of actions over time (performing a series of sequential actions). Our concentration capacity and linear mental functioning have been altered by the predominance of instantaneity (Harvey, 2008; Bauman, 2021) and

zapping (Dornelles, 2005; Jenkins, 2008; Sarlo, 1997), which are characteristics of screen-mediated activities.

The active role of children in digital media (Couto, 2013) enhances these environments as spaces that allow for specific learning, as well as learning processes where children are more autonomous. We identified that even children aged five to six are capable of researching, using voice command functions, topics of interest in video channels, watching, and learning about specific content. In other words, these are different learning processes with other languages, where children are more autonomous.

On the other hand, we cannot overlook recent studies that warn about the correlation between excessive screen use by children and its negative effects on their development in areas such as language, cognition, motor skills, behavior, and social and emotional relationships. According to Arantes and Morais (2022, p. 2):

> [...] cognitive delays, language delays, social delays, emotional dysregulation, as well as aggressive, anxious behaviors, and sleep disturbances are harms associated with excessive screen exposure in early childhood. These harms are consequences of inadequate exposure to inappropriate content and the early and excessive use of media devices.

In these circumstances, excessive screen use by children can affect the development of oral language and learning, as it reduces social interaction and face-to-face dialogue with others. It also harms the development of motor skills due to the amount of time children spend sitting and using screens, preventing them from moving around, playing, running, jumping, climbing, biking, strolling, and practicing sports.

It is important to highlight that children's easy access to media devices and deliberate exposure to content such as violence and pornography (which had long been almost exclusively in the domain of adults) causes societal

concern due to the inability to regulate these media (Bauman, 2012), unlike television, where control was more feasible (Buckinghan, 2006). Violence, both suffered and provoked by children in cyberspace (cyberbullying), has led to an array of problems for children, young people, and families, and is becoming a topic of social discussions and concerns. These situations demand that educational institutions become more committed to educating children on the conscious use of screens and media.

In this regard, the Brazilian Society of Pediatrics (SBP) has provided guidance to adults on regulating screen use by children, indicating that children under two years old should not use screens. For children aged two to five, the maximum screen time should be one hour per day with adult supervision. For children aged six to ten, screen exposure should be limited to a maximum of two hours per day (SBP, 2019).

We can conclude that children growing up in the Digital Culture have access to numerous practices and a wealth of information through screens, in an accessible language, supporting new learning processes, behaviors, content, and values. However, unregulated access affects children's development, exposes them to inappropriate topics, and makes them susceptible to health and violence problems.

"We're going to play robot Megan": other ways to interact and play

Another important aspect that screen experiences in Digital Culture have raised is the ways in which children interact in cyberspace. According to Santaella (2003), digital media are configured as social environments. Consequently, digital games, social networks, and messaging apps have become a new social space that allows for meeting, interacting, and forming relationships of friendship and enmity. In Scenario 8, the child reports their encounter with other peers in the virtual environment to play.

Scenario 8 **Free Fire, Roblox, and Stumble Guys**

Researcher — Tell me, I heard you talking about a game, do you play?

Neimazinho — Yes, I play Free Fire, Roblox, and Stumble Guys, [...] Super Sorf [...].

Researcher — And what do you do in these games?

Neimazinho — **Well, I play! With my friends.**

Researcher — Do you have friends in the game? (Nods head signaling yes) Do you know them?

Neimazinho — **I know one, some I don't. Only my brother, L. F., F. doesn't study here, and R. is my friend, he lives in Jiqui and I always go there.** [...].

Researcher — How do you meet to play?

Neimazinho — **Well, by making the name, he sends me an invitation, then we just play Free Fire.** [...] (Audio transcription, 2023, emphasis ours)

These virtual interactions may involve family members, schoolmates, but also, and largely, strangers. This access is made possible by the annihilation of space and time (Harvey, 2008) that the screen and the internet produce, enabling the breaking of spatial boundaries through the virtual environment. In the case of children, online games have become spaces for creating a community of children who meet to play, have fun, talk, and form emotional bonds (Jenkins, 2008). But interactions on social networks through likes, comments, and shares also emerge as important and different modes of interaction for children in Digital Culture.

We know that experiences on screens, games, cartoons, movies, and TV shows transcend the screen space (Lévy, 1999), manifesting as references in other everyday life environments. In the case of children, these references appear in their narratives, games, and childhood cultures, which become revealing of the influences of Digital Culture's contents and practices in shaping their childhoods.

Among the children in the research group, we identified games that used movies like *Megan* and *The Addams Family*, games like *Sonic* and *Garten of Banban*, and the series *Dragons: Race to the Edge* as references for imaginary scenarios. In the excerpts below, we can observe some of these games.

Scenario 9: **Sonic**

Researcher — I saw you playing Sonic!

The Flash — Uh-huh, it's like this, first you have to run really fast like this [...].

Boiadeira — I've only seen Sonic in cartoons! [...].

(The Flash runs by us as fast as he can) [...].

Batman — I watched it too, and also he (incomprehensible speech) he flies (The Flash approaches tired).

The Flash — I already ran! [...] I watched Sonic defeating Robotnik.

Batman — Me too! [...] (Audio transcription, 2023).

Scenario 10: **Horror Game**

Researcher — What were you playing?

Jacks — Garten of Banban, it's a horror game, with monsters, the monsters have different powers! There's Bambalina, there are even monsters from chapters 2, 3, 4, 5, 6. The monsters try to catch the humans, but you can't play with anyone [...] (Audio transcription, 2023).

Scenario 11: **Robot Megan**

Jacks — We're going to play, play as Robot Megan, she's an evil doll, Girassol likes to play with her. Robot Megan has to catch humans, but she's playing with her, then Superman and Bowser and, and Boiadeira will play, and then she catches them and turns

them into a Megan or a Megan.

Researcher — But Robot Megan is from that, that movie?

Girassol — It's a series [...] (Audio transcription, 2023).

The examples in scenarios 9, 10, and 11 highlight how children appropriate content circulating in media accessed via screens, as well as how they creatively give meaning to these contents through their play and childhood cultures (Corsaro, 2009). On the other hand, these dialogues show how Digital Culture (Santaella, 2003) is shaping current childhoods, affecting and transforming their play — "We're going to play, play as Robot Megan" — the content of these games — "The monsters try to catch the humans" — and the imaginary scenarios, which become the main references for the creation of children's play and cultures.

In scenario 12, we observe the make-believe play of a group of children, where the researcher participates, assuming the role of daughter. We identify elements of Digital Culture in the storyline, such as the character *Power Rangers* and the power of ice.

Scenario 12: **Power Rangers Dad**

[...] Barbie/mother — Daughter, your sister Girassol is making food and mommy is going to the market, okay? Keep an eye on the gate so no thieves get in!

Researcher/daughter — Thieves?

Barbie/mother — Yes! There are thieves outside!

Researcher/daughter — Look, a thief, mom, close the door!

Barbie/mother — It's your dad, girl! He's a policeman!

Batman — **I'm the dad! I'm Power Rangers' dad!**

Wonder Woman/sister — **I have the power of ice**, look! (makes hand gestures) [...] (Audio transcription, 2023, emphasis added).

In the make-believe game, we observe that the plot revolves around a family (mother, father, daughter, sister) with everyday activities, such as

cooking and going to the market. It also addresses social issues such as the presence of a thief and the police. However, in the middle of the plot, aspects of the children's experiences through screens appear randomly, like the Power Rangers dad and the ice power. The presence of these elements in the children's make-believe points to Lévy's (1999) findings that cyberculture does not remain confined to cyberspace but flows into human life in general, crossing other spaces, practices, and experiences.

It is important to note that languages not only represent the world but also forge the world (Bujes, 2005). Thus, as children express their experiences through screens via multiple languages, such as play, they reinforce these experiences as integral parts of their identities and subjectivities. Moreover, as they make meaning of their screen experiences through play, children gain more clarity about these experiences and can develop knowledge about themselves and the world in this relationship.

Turning to the scope of Early Childhood Education, we highlight that Early Childhood Education curricula should stem from the knowledge and experiences children demonstrate through their multiple languages (Brazil, 2010), including play. Thus, we infer the need for attentive and sensitive listening to the languages and play of children who express their screen experiences as a way to better understand children of this present time, whose childhoods are largely experienced through screens. On the other hand, projects and dialogues with children about the risks of excessive screen use emerge as another demand for children's education, aiming to contribute to the development of a critical awareness among children about their screen use and its impacts on their development.

Conclusion

To conclude, we revisit our initial question: How does Digital Culture shape childhoods today through children's screen experiences, and how do these experiences reflect on Early Childhood Education? Our analysis demonstrated that Digital Culture, through screen experiences, has caused

changes in how children live their childhoods, specifically in the ways they play, interact, and learn, with impacts on their development, health, and social and emotional relationships.

Regarding learning, we observed that children learn, through interactivity and participation in digital media, knowledge, values, skills, and mental functioning patterns that come to constitute their behaviors. They are more autonomous in these experiences and capable of teaching adults how to operate digital media, altering the roles of who teaches and who learns in this context.

We also interpret that Digital Culture, through screen experiences, affects the ways children interact and play. Digital entertainment games, prevalent in children's daily lives, represent a different form of play and interaction accessed by children through screens.

However, these experiences are not limited to screens because they transcend them, materializing in children's narratives and play, affecting their behaviors and identities with numerous repercussions, some of which can be considered positive in some aspects and negative in others. In this regard, it is worth noting that the nicknames chosen by children predominantly refer to media characters. According to Kramer (2002), the choice of names by children is related to value and social prestige. Therefore, the predominance of names referring to media characters points to the influence of these characters in children's identification processes, as well as the prominent role these media play in their lives.

Moreover, we observe the constant presence of English words in children's vocabulary, appropriated from the media they access, which are shaping a particular type of language and, therefore, affecting how children speak and think. Another aspect is the need for social belonging and the pursuit of asserting their dominance in the media, whether through creating a channel or through knowledge and skills about certain platforms, highlighting how these media influence children's experiences and identities.

In this sense, we understand that Digital Culture offers new ways for children to live, with screen experiences becoming increasingly central. The excessive use of screens by children is a condition that needs to be questioned and problematized, given the consequences for children's development, social and emotional relationships, and health. This reality presents significant challenges for institutions dedicated to children's education, requiring them to reinvent themselves to operate productively in the current sociocultural context.

Finally, we must emphasize the need for continuous teacher training related to Digital Culture. Beyond the instrumental use of digital technologies in the school environment, it is urgent to expand our understanding of how the world is forged in the webs of Digital Culture through screens, platforms, and algorithms, and how this has systematically shaped the world, people, and, therefore, children.

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