

THE RELATIONSHIP BETWEEN CHILDREN, TECHNOLOGY AND PLAY: a survey of productions in the period 2020-2025

A RELAÇÃO ENTRE AS CRIANÇAS, A TECNOLOGIA E O BRINCAR: um levantamento das produções no período de 2020-2025

LA RELACIÓN ENTRE LOS NIÑOS, LA TECNOLOGÍA Y EL JUEGO: un estudio de las producciones de 2020 a 2025

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Abstract

This article addresses the current conceptual discussion of childhood, which embraces the idea of children as social beings who experience this phase as subjects of rights, protagonists, and active participants. Its main objective is to present research published in academic texts between 2020 and 2025 that has discussed play and the inclusion of digital technologies in early childhood education. Therefore, the object of study refers to the relationship between children, technology, and play. To this end, bibliographic research (Gil, 2008) was conducted, including a survey of scientific articles in Portuguese, available on Google Scholar and Scielo, published in the last five years. The study was based on interpretative analysis (Sarmiento, 2008). Based on the publications analyzed, we conclude that children are immersed in digital contexts, especially during and after the pandemic. Reflecting on this topic can provide opportunities to rethink pedagogical practices with children in early childhood education, incorporating free and spontaneous play, and contribute to the initial and ongoing training of preschool teachers.

Keywords: Childhood. Pedagogical practice. Digital resources. Play.

Resumo

Este artigo trata da discussão conceitual de infância na atualidade, que traz a ideia de criança como ser social que vive essa fase como sujeito de direitos, protagonista e ativo. Tem como objetivo central apresentar o que as pesquisas publicadas em textos acadêmicos,

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entre 2020 e 2025, que têm discutido acerca do brincar e da inserção das tecnologias digitais na etapa da educação infantil. Portanto, o objeto de estudo refere-se à relação entre as crianças, a tecnologia e o brincar. Para tal, realizou-se uma pesquisa de cunho bibliográfico (Gil, 2008), com levantamento de artigos científicos em língua portuguesa, disponíveis no *Google Acadêmico* e *Scielo*, publicados nos últimos cinco anos. O estudo teve como base a análise interpretativa (Sarmiento, 2008). Conclui-se, com base nas publicações analisadas, que as crianças encontram-se imersas em contextos digitais, sobretudo durante e após o período pandêmico e que, refletir acerca do objeto de estudo em questão, pode possibilitar o repensar as práticas pedagógicas com as crianças na etapa da educação infantil, com a inserção do brincar livre e espontâneo, bem como contribuir com reflexões para a formação inicial e continuada de professores(as) das infâncias.

Palavras-chave: Infância. Prática pedagógica. Recursos digitais. Brincar.

Resumen

Este artículo aborda el debate conceptual actual sobre la infancia, que abarca la idea de los niños como seres sociales que viven esta etapa como sujetos de derechos, protagonistas y participantes activos. Su objetivo principal es presentar investigaciones publicadas en textos académicos entre 2020 y 2025 que han abordado el juego y la inclusión de las tecnologías digitales en la educación infantil. Por lo tanto, el objeto de estudio se refiere a la relación entre los niños, la tecnología y el juego. Para ello, se realizó una investigación bibliográfica (Gil, 2008), que incluyó un análisis de artículos científicos en portugués, disponibles en Google Scholar y Scielo, publicados en los últimos cinco años. El estudio se basó en el análisis interpretativo (Sarmiento, 2008). A partir de las publicaciones analizadas, concluimos que los niños están inmersos en contextos digitales, especialmente durante y después de la pandemia. Reflexionar sobre este tema puede brindar oportunidades para repensar las prácticas pedagógicas con niños en educación infantil, incorporando el juego libre y espontáneo, y contribuir a la formación inicial y continua del profesorado de educación preescolar.

Palabras clave: Infancia. Práctica pedagógica. Recursos digitales. Juego.

Introduction

Addressing the relationships between children and technologies involves numerous challenges, whether for families or the school environment, from the early childhood education stage. For families, issues emerge such as: the fact that children remain online for hours at a time, the need for supervision and parental control of what they access, the health problems that this can cause, or even the new forms of socialization and construction of bonds and social skills.

In educational institutions, the challenges are the insertion (or not) of technologies in the pedagogical proposals and how to carry them out, contemplating, above all, space for socialization, games, diverse interactions, and the relationship with children's knowledge from their family and life contexts.

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Early childhood education, the first stage of basic education, offered to children in daycare centers and preschools, has the objective of the integral development of children, which is guaranteed as a right of children, whether part-time or full-time (Brasil, 1996). Children, as subjects of rights, active and protagonists of the learning process (Brasil, 2009), need to be met in their needs and stimulated in their potential, through interactions and games, with pedagogical proposals that can bring out their imagination, creativity, and broaden their view of the world and themselves.

In this sense, the present study problematizes the following: How are playing and interactions with digital technologies presented/articulated in scientific productions published in the period from 2020 to 2025? This concern was due to the fact that we lived through a pandemic for a good part of the indicated period that made us have digital resources as a means of interaction with children and their families, from early childhood education, in the case of educational institutions. So, for this study, our main objective is to present what research published in academic articles, in the period from 2020 to 2025, has discussed about play and the insertion of technologies in Early Childhood Education. And, as specific objectives: to contextualize the childhood school and the implications of the use of technologies in guaranteeing play; to analyze how research published in scientific articles has dealt with the relationship between the use of technologies and play in Early Childhood Education; and to present possibilities in understanding the relationship between the use of technologies and play in childhood school.

Based on the theoretical framework, especially the Sociology of Childhood (Qvortrup, 2010; Gouvea, 2008; Sarmiento, 2008; among others) the conceptions of child and childhood are presented. Also, studies on children's relationship with technology are taken as a basis (Haydt, 2024), and the discussion about spontaneous and free play as possibilities for children to interact with their peers, and learn, observe, solve problem-situations, and imagine (Eckschmidt, 2022; Santos, 2012).

Contemplating the survey of scientific articles published in *Google Scholar* and *Scielo*, in the last five years, we seek to bring the publications and carry out

reflections that can contribute to initial and continuing teacher training, with a view to pedagogical practice with children and their relationship with technology and play (Gil, 2008; Sarmiento, 2008).

This article is organized into three topics. In the first, the concepts related to children and childhood are discussed from a sociological perspective. In the second we present the understanding of the relationship between children, technology and play. Finally, in the third, the analyses from the selected studies are presented.

1 Children and childhoods: conceptions pertinent to the study

Children and the experience of their childhoods are a concern of legislation, theoretical discussions in various disciplinary fields (Anthropology, Sociology, History, Pedagogy and Education as a whole, among others), throughout the twentieth and twenty-first centuries. In the Brazilian context, the Federal Constitution of 1988, the Statute of the Child and Adolescent (1990), the Law of Guidelines and Bases of National Education (No. 9.394/1996) demarcate a territory for looking at children and the experience of their childhoods as subjects of rights, with guaranteed space in the family, in educational institutions and in society more broadly.

The child as a distinct social category and its specificities (whether of race, gender, place of life, relations with other generational categories) have been thought of, in theoretical terms and educational practices, in its heterogeneous aspect, which is why childhoods is approached in the plural, with the perspective that it is a period lived by real children (Freitas; Kuhlmann Jr., 2002).

Adults have a representation of what this period is lived by the child(ren), which changes according to historical time, the social and economic context, and the relationship of the subjects with each other and with the world.

On the other hand, childhood refers to a certain age class, referring to the concept of generation. The term acquires increasing visibility in research in the social sciences, as it indicates the importance of age belonging in the production of social identities (Gouvea, 2008, p. 97).

The author Gouvea (2008) calls our attention to the idea that, even if there

is a conception of childhood circumscribed in the biological field, there is still a social and historical construction of this concept. Therefore, having a periodization of time, chronological, that refers us to the childhood period, does not mean that we forget the other areas or spaces of belonging of children, in which they build their identities as social subjects.

In relation to childhood as a structural category, Qvortrup (2010) carries out this discussion based on the constitution of studies linked to the field of Sociology that give visibility and voice to children, therefore to what they are in the present moment, not only to a being under construction for a future.

Qvortrup (2010) points out that childhood can be understood as a variable period for each person, and as a period there is a beginning and an end. In structural terms, childhood has another understanding, as it is not thought of in terms of periodicity:

Thinking in structural terms breaks with personal life plans; It makes us think not in terms of the development of the child, but particularly in the development of childhood.

In structural terms, childhood does not have a temporal beginning and end, and therefore cannot be understood periodically. It is understood, more appropriately, as a permanent category of any generational structure. The two notions of childhood – as a period and as a permanent category – do not contradict each other (Qvortrup, 2010, p. 635).

Considering Qvortrup's (2010) explanation, in Brazil we have the Statute of the Child and Adolescent - ECA (1990) which provides for a periodization in terms of age for the stage of childhood, being up to twelve years old, and adolescence up to eighteen years old. However, it is necessary to consider that for each subject these stages occur differently. When social subjects leave this phase, it will not cease to exist as a structural category, as the author explains:

[...] Childhood is both constantly changing and a permanent structural category that all children go through. Childhood exists as a social space to receive any child born and to include him – for whatever comes and goes – throughout the period of his childhood. When that child grows up and becomes an adult, his childhood will have come to an end, but as a category childhood does not disappear, on the contrary, it continues to exist to receive new generations of children (Qvortrup, 2010, p. 637).

There is the idea that, like any phase of human life, childhood is a period that is constantly transformed, and as a structural category it has a permanence, as it is not something transitory. There are, then, changes, continuities, and characteristics that are common and others that are particular, whether in childhood as a period or as a structural category of society (Qvortrup, 2010).

Sarmiento (2008) contextualizes that childhood has not been, over the decades, a central concern of Sociology. Children have been treated by other areas with greater focus, such as Psychology, Medicine, Education, as examples. In the social sphere, Sarmiento (2008) explains that the reason is due to the fact that the child was considered as a miniature adult, someone who receives from someone else - the adults, and is not in the present. "But it is, in fact, in the condition of student or in the position of deviance or anomie that the child is traditionally studied by Sociology - rarely from the consideration of his social and generational condition" (Sarmiento, 2008, p. 20).

Sarmiento (2008) points out that there is a revision of the conceptualization of socialization in the field of Sociology, in critical terms, with a view to childhood, "[...] children being analyzed as actors in the socialization process and not as passive recipients of adult socialization, placing under scrutiny the complex relations of interaction in the communication of knowledge and social values [...]" (Sarmiento, 2008, p. 20-21).

Still, we can highlight that there are approaches to be considered when approaching childhood studies, understanding the child as a social being who participates in the process and, in this sense, depending on how they are approached, certain forms of materialization are configured. Structural studies emphasize how childhood is structured in the social sphere and how, based on these conditions, its actions are established.

The structural perspectives place the emphasis on childhood as a generational category and seek, from a predominantly macrostructural perspective, to understand how childhood relates, diachronically and synchronically, with other generational categories, considering predominantly demographic, economic and social indicators, and how these relationships affect social structures, globally considered (Sarmiento, 2008, p. 31).

These structural studies have as their central focus demographic aspects and statistical analysis, as well as documentary studies. In structural terms, children and their concrete social practices are not the keynote in these studies (Sarmiento, 2013).

Interpretative studies, on the other hand, focus on children as members of a social category, childhood and, in turn, do not ignore [...] the structural dimension of childhood, emphasizes the process of social construction and the role of the child as an active subject in this construction" (Sarmiento, 2013, p. 26). Children, in their particular worlds and ways of life, create meanings, interact with other children and adults, and recreate situations/representations with their peers.

In terms of typologies of studies, there are those of an ethnographic nature, case studies, in a qualitative approach, so that, in them "[...] Corsaro's (1997) concept of "interpretative reproduction": children's ability to interpret and transform the cultural heritage transmitted by adults" (Sarmiento, 2008, p. 31) is central.

Still, in studies on childhood from a sociological perspective, we have intervention studies, in which childhood constitutes an oppressed social group that, due to its conditions of exclusion, there are a need for a critical paradigm, in order to contribute to the social emancipation of childhoods, so forms of intervention or participatory investigations are foreseen (Sarmiento, 2008). When addressing the critical orientation in terms of studies on childhood, Sarmiento (2013, p. 27) comments that:

In addition, in this orientation, there is an intention to transform the social reality that often mobilizes methodologies such as action research or participatory methodologies with children, especially in schools, shelters or urban spaces. [...] Although the currents are well defined, there are sometimes more common themes in one of them that are researched from the theoretical and methodological assumptions of another.

We observed that each current has a focus in terms of studies and views on childhood, whether in its structural, social or critical perspective, with a view to interpretation and/or intervention in the context of children, in their reality. However, the interpretative approach is the one that seems best to our study, because it is close to our analyses of the relationship between children, technology and play, considering the statement of Nascimento (2011, p. 44, author's emphasis):

The interpretative approach seems to be the one that best presents elements to understand the games and interactions between children, because, according to Sarmiento (2008, p. 31), it privileges studies on children's social action (*agency*) and on intra- and intergenerational interactions; on childhood cultures; on children within institutions; on children in urban space; on children and the media; and on play, leisure and playful culture.

In the interpretative approach, the social context is not ignored and the child is seen as part of this constitutive process of society, so that, in addition to Sociology, Nascimento (2011) highlights the role of Anthropology as an interdisciplinary area in childhood studies, also highlighting the child as a social being. "Life is social, a collective process of discovering how to live" (Friedmann, 2022, p. 26).

With regard to the Anthropology of Childhood, this area of knowledge is committed to making the voices of children echo, to getting to know them and, therefore, when talking about practices and research, we can show that observations and dialogues with children, attentive and close listening, are possibilities for the teacher and/or researcher to delve deeper into their universes, and thus, bring out children's cultures, through openness, listening to the other, because:

It is about opening up new possibilities for thinking about experience. And it is here that the educator-anthropologist also becomes a *poet and artist*, since his sensitive observations, the sharing of his perceptions and feelings, his way of communicating and telling the world about children, can inspire so many others. And, in this sense, among the main "gifts" of those who observe and listen to children to know their lives, there is the gift of "waiting" and "silence". Silence to feel and welcome each child in their unique way of being, in their unique time of living. (Friedmann, 2022, p. 28-29, author's emphasis).

With the support of Friedmann (2022) and contemplating the exposition of the authors' ideas carried out in this item, we can say that, in the field of studies on childhood and children, there are many theoretical strands, methodologies, and paths for educational work with them, however these are means, and not an end in themselves.

In this sense, the discussion brought by Friedmann (2022) in relation to respect for children and their childhoods, serves as a motto for reflection to think about their experiences, what they need at each stage and how technological

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resources can support pedagogical processes, leaving space for playing, interactions, storytelling, dialogues in conversation circles, spontaneous play, the exploration of the environment, as well as their relationships with technology, an emerging aspect for discussion today.

2 The relationship between children, technology and play

The discussion about the relationship between children and technologies has been a recurring theme in the educational context and in society as a whole, given the growing insertion, increasingly early, of children into screen use, especially with mobile devices, which came more strongly from the pandemic scenario experienced, having the technological resources as mediators between children, their families and educational institutions.

Since 2005, the Regional Center for Studies on the Development of the Information Society (CETIC.Br) has the purpose of monitoring the adoption of technologies in the Brazilian territory, and one of its most recent documents published on ICTs and children aged 0-8 years in 2025 brings data that can present a little of the scenario of children's insertion in the digital universe.

It is presented, through the aforementioned document, that the use of the internet has grown in the last ten years, with the first access occurring before the children reach six years old. The target population of the research presented by the CETIC.Br was composed of permanent Brazilian private households, and people aged ten years or older. Through the data, it is expressed that there was an increase in the possession of cell phone use by children:

In 2020, the ICT Domiciles methodology was adapted due to social isolation and the impossibility of applying face-to-face interviews. As a result, data on the residents' staff were not collected. However, it is possible to identify from the time series how the levels of children between 3 and 9 years old who had their own cell phone remained stable between 2015 and 2019, increased in 2021 and stabilized again at a higher level until 2024 (Graph 6). In 2015, 3% of children aged 0 to 2 years, 6% of those aged 3 to 5 and 18% of those aged 6 to 8 years had their own mobile phone. In 2024, these indicators reached 5%, 20%, and 36%, respectively (Cetic, 2025, p. 14).

We can observe, then, that the indicators reveal an increase in the use of cell

phones by children who are in the early childhood education age group (0-5), which is disturbing, given that, in many cases, children are possibly accessing content that is not appropriate for their age group, and without adult supervision.

To deepen our reflections, we will analyze some aspects of Jonathan Haidt's *Anxious Generation* (2024) which, although it presents the context of American society, brings evidence and helps to think about the relationship between children, technology, and play.

Haidt (2024) situates his reflections on the relationship of children and adolescents with technology in Generation Z (born after 1995):

Some claim that children born after 2010 are already part of the alpha generation, but I do not believe that we can establish the end of generation Z - the anxious generation - before changing the conditions that have been making young people anxious in this way (Haidt, 2024, p. 14).

The great issue that the author presents is that this generation was the first to go through puberty with the possibility of navigating a different world, which excited (excites) and addicted (addicts) them, which brought problems related to the scope of mental health. That is, being connected to be socially accepted, led (and leads) children and adolescents to losses and instabilities, as he contextualizes:

Generation Z teenagers were forced to spend many hours of their days browsing through the happy and shiny publications of friends, acquaintances and strangers. They watched an increasing number of videos created by users and streaming entertainment companies, offered to them by autoplay and by algorithms designed to keep them connected as much as possible. Gen Z teens spent much less time playing, talking, having contact with their friends and relatives, or even making eye contact with them, which reduced their embodied social interactions that are essential for good human development (Haidt, 2024, p. 15).

The author draws attention to this generation, as the one that grew up with new configurations in society, especially digital technologies, which configure relationships with other people and the world, and calls this phenomenon the Great Reconfiguration of Childhood, that is, a childhood that was based on play and that, little by little, becomes a childhood based on the cell phone.

In this aspect, we can point out the role of children in the digital universe: are they protagonists and assets as expected in current discussions about the

conception of children as social subjects and rights? (Sarmiento, 2008; 2013). What we can highlight, through Haidt's (2024) considerations, is that the virtual universe, while expanding possibilities for children and adolescents, also leads them to a scenario of restrictions and lack of contact with people and environments that can expand their abilities, as is the case of free play.

Childhood based on play has relationships in the real world, which according to Haidt (2024) are embodied relationships, that is, each person uses their body for communication and is synchronous, occurring in real time; so, in the virtual world, there are disembodied relationships, bodies are not necessary, the language of the internet is enough, just as relationships occur asynchronously, involving many people, publications speak for them. In the virtual world there is free access to enter and exit groups, people are blocked, they are included, without any cost or motivation to relate and build more solid relationships.

For Haidt (2024), hyperconnectivity seems to be linked to anxiety disorders, fear, and depression, which end up undermining people's social lives, especially young people. Living with this feeling of fear and anguish all the time generates issues related to an internal alarm, which refers to the feeling of survival of the species, which is causing wear and tear in people, whether physical, mental or emotional. "Among a variety of mental health diagnoses, anxiety diagnoses grew the most, followed by depression [...]" (Haidt, 2024, p. 38).

In childhood, as a period or time destined to the exploration of the world, there are several possibilities to stimulate the brain to learn new skills and make connections and synapses, which extends into puberty and adolescence. This means that:

Evolution has not only prolonged childhood to make learning *possible*, but has instituted three strong motivations for acting in ways that make learning *easy* and *probable*: free play, attunement, and social learning. In play-based childhood, the reigning norm was: after school, children played together, unsupervised, in a way that allowed these motivations to be satisfied. In the transition to mobile-based childhood, developers of smartphones, gaming systems, social networks, and other addictive technologies lured children into the virtual world, where they did not reap the full benefits of acting on behalf of these three motivations (Haidt, 2024, p. 66, author's emphasis).

For the author, children who do not experience play, in its different forms,

will have losses in their development, since this is their work, especially in their childhood period. In play, children develop social skills for living in society, "[...] including being in control of themselves, making decisions collectively, and accepting results even when they are unfavorable to them" (Haidt, 2024, p. 67). For the author, free play that is directed by those who participate in the game and does not aim to achieve something, is something healthy for the development of children, especially if it is carried out outdoors, in a natural context, and with children at different ages.

If we think about the context of early childhood education, play and interactions are included in official documents (Brasil, 2009; Brazil, 2017) as the axes of pedagogical practices and children's rights, without reducing the act of playing to tools and strategies to teach something (Eckschmidt, 2022). Playing freely requires spaces and the care of the educator in providing moments that are truly free, that children interact and learn with their peers, given that in these spaces children's cultures emerge:

When the child has the opportunity to play freely at school, that is, when the desire, the impulse, the creation of what will happen - which can be a delicate cake in the sand or a daring pirate ship - arises, we observe that the movement happens from the inside out.

To perceive and understand this characteristic of play is to get closer to the essence of the meaning of play for childhood: the child activates himself by himself (Eckschmidt, 2022, p. 236-237).

In free play is the power of children, the experience of experiences that are organized by themselves, in a context that allows them to challenge their own bodies and get to know the environment. And, regarding spontaneous play, Santos (2012) conceptualizes it as a space that provides freedom, experimentation and the learning of various forms of knowledge, in which they can deal with emotions, expectations, thoughts, whether their own or those of others. "First of all, it is necessary that considerable periods of time are provided for free play in the school routine, thus allowing children to interact with each other and with objects spontaneously" (Santos, 2012, p. 97).

Regarding games, Haidt (2024) stresses that they need to have some degree of physical risk, so that children learn to take care of themselves and others, which does not occur when the adult intervenes and wants to dominate the situation. What

happens is that, in many cases, adults want to protect children in the real world, so as not to hurt themselves, and end up not being able to protect them in the virtual world, in which they are exposed, and without being able to read situations that involve risks on their own.

The author states that in unsupervised play, children will learn to deal with overcoming problems, working with their emotions and those of others. This is Haidt's (2024) thesis to define that a childhood that plays in the real world is capable of having more repertoire to overcome its difficulties in the later stages of life. However, Haidt (2024) does not exclude the idea that smartphones open up a world of possibilities, and that digital games are also a form of play and fun for children, but explains that even these possibilities exclude real experiences, with learning that does not take place in the digital world.

Children need to live with other people, whether with children or adults of other ages, so that they can develop and connect, tuning and synchronizing their movements and the part of emotions in these relationships. Smartphones and other technological devices distract people in their interactions, parents cannot stay focused on their children, there is no understanding by looking, by reading facial and gestural expressions, which prevents attunement. "Attunement is as important for social development as movement and exercise are for physical development" (Haidt, 2024, p. 71).

In addition to attunement, there is also the limitation of social learning, which ceases to be in the real world, and ends up acquiring rules, languages, ways of relating to others that are typical of the virtual world. Children and adolescents have adopted behaviors and followed influencers that sometimes do not match what they should be learning and experiencing in their learning stage.

When we talk about real life, there are interactions that are built, dialogues that we need to carry out with the other, understand what the other is like. On the other hand, on the networks, profiles have followers, and children start even before adolescence to have a profile on social networks, and thus end up also having comments, likes, which can generate comparisons, anxiety about getting more virtual friends, as well as accessing content inappropriate to their age and understanding.

Valid behaviors in the virtual world may not work for children and adolescents in other environments in the real world - whether in the family environment, school, in other spaces of coexistence with people of their age group, for example, that is, in the virtual world influencers act for a vast group of people, and this excludes the protagonism and uniqueness of each person in their life context. "Social networks are therefore *the most effective compliance machine ever invented*" (Haidt, 2024, p. 75).

Regarding the breadth of relationships in childhood and the varied learning, Friedmann (2022) emphasizes that, whether in research, or also in the pedagogical practices in the early childhood education stage, the observation of their relationships, listening and dialogue with them give us countless possibilities to expand their repertoire, as well as to provide moments in which they can speak, tell about themselves and what they have learned, and ask about what they would like to learn. This path mediated by teachers, who are also researchers, reveals strategies for mediation in the real world, which serve as a repertoire for children and adolescents when relating to each other in the virtual world.

3 Children, the relationship with technologies and play: what the publications say

In this item, we will address the analysis of research published in scientific articles that have dealt with the relationship between the use of technologies and play in Early Childhood Education. The study, therefore, is characterized as a bibliographic and exploratory study (Gil, 2008).

Exploratory research, for Gil (2008), is carried out in order to bring a more general view of the theme, delimiting it, and therefore requires a bibliographic and documentary survey, as well as other research instruments, according to its design.

We conducted a survey of scientific articles on two platforms - the Scielo and the Google Academic, during the months of July-August 2025, in order to seek to respond to the problematization of the study materialized in this article: How are playing and interactions with digital technologies presented/articulated in scientific

productions published in the period from 2020 to 2025? In this way, we will present the results of this research and the works that had some approximation and/or answered the questioning scored.

SciELO (Scientific Electronic Library Online) It is a portal that allows open access to scientific publications, and in this we conducted a survey of scientific articles with the following keywords: Pedagogical practice. Childhood. Technology. Play. And together, we have not achieved any results. In this sense, we continue with the possibility of reducing one of the keywords: Pedagogical practice. Childhood. Technology; And we also did not get results.

Continuing, we applied the following keywords: "Pedagogical practice. Childhood. Play." Obtaining 0 result, which led us to make a new attempt, with the following keywords and the Boolean terms and/or: Pedagogical Practice and Childhood and Play or Technology; and, applying the 2020-2024 filters, articles in Portuguese, area of Human Sciences. From these, we obtained two (2) results, but only one (1) of the articles came close to the theme and problem of the study.

Also, we searched with the same filters for the following keywords and the term Boolean and: Pedagogical Practice and Childhood and Technology; as well as Pedagogical Practice and Childhood and Play. In both searches, we obtained 0 results.

The selected article by Ostetto (2024) is entitled "Art in early childhood education: propositions, conceptions, reflections in teacher narratives". The study aims to map formative paths and the experience of educators who work with art, with children, with an emphasis on aesthetic education, early childhood education, and autobiographical narratives, with three (3) Portuguese educators. The research focuses on research with educators and not on them, so attentive listening is a principle for dialogue with the research subjects.

As a guiding element for conversation, in the interviews with the educators, photographs (and other materials considered important for working with Art) and audio-recording were used. In the speeches of the teachers who participated in the research, we noticed the enchantment with art, experienced by cultural manifestations, including the indication of the use of digital platforms that offer

material for contemplation and inspiration for the children, and as a basis for study.

Sometimes, the proposals start from the children's observation: what are they doing? And then the artists are introduced, with the intention of enriching their ways of creation, supporting and/or encouraging them to do differently, in dialogue with those presented. Other times it is through the material or technique used by an artist that the connection is made for the work. The expansion of repertoires takes place through book viewing, internet research, projection of images in *datashow*, visits to exhibitions, and continuous research on the artist in question (Ostetto, 2024, p. 7).

Children, therefore, are co-participants in the process of study, aesthetic appreciation and mobilizers of the proposals with the investigated teachers, with technological resources being means to increase research and visualize works and artists.

Also, Ostetto (2024) points out that, when circulating through the spaces of early childhood education institutions, the author observed that their organization, the way they bring artistic representations are part of the culture of the institutions, and that they are becoming a repertoire of the children's culture. The author highlights that the vision of the child revealed through the research is that of a citizen, inventive child who is a producer of culture, and the teacher of early childhood education as someone available to listen to the children, who carries out the dialogue with them, their peers and the community, and allows the children to express themselves, through different languages, playing being one of them. This view of the child presented by the author is in line with what we bring to the discussion in this study (Sarmiento, 2008; Friedmann, 2022).

With regard to the *Google Scholar* platform, we surveyed publications in review scientific articles, from 2020 to 2025, with the following keywords: Pedagogical practice. Childhood. Technology. Play, in the months of July and August 2025, the first twenty (20) pages in Portuguese. In total, 192 results were presented, from which we selected 17 publications, as follows by year of publication:

Table 1 – Quantitative aspects

2020	2021	2022	2023	2024	2025
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0	2	3	4	5	3
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Source: Organized by the authors, based on Google Scholar consultation Jul-Aug/2025.

Of the 17 selected publications, only four (04) responded to the problem of this study, which brought some elements of discussion about the relationship between play and technologies in early childhood education, which we will present and analyze below.

The article by Santos and Correa (2021) entitled "Integrative literature review: free play in early childhood education", praises free play, make-believe play, as the main ones in the early childhood education stage as opposed to children's current experiences with technologies. This is a literature review study in *Scielo* in the period from 2011 to 2020, totaling eight (8) studies selected for analysis.

The relationship between play and technology took place through specific ideas, in which there is a defense of children's free and spontaneous play in the early childhood education stage, considering that children are immersed in digital contexts in their homes and observe society as a whole.

For Santos and Correa (2021), the texts analyzed highlight the relevance of play for child development and the teacher's mediation as crucial. "For children, play is important in itself and an experience of self-production" (Santos; Correa, 2021, p. 952). This statement is related to what we discussed in terms of play with the author Eckschmidt (2022), who points out that in free play children's self-production occurs, since they activate themselves.

Also, the institutional environment needs to be prepared for this interaction of children with toys and possibilities of playing. "The school needs to have a pleasant physical structure, compatible and that meets the needs of the children, such as the use of school materials, toys and technological resources made available by the institution" (Santos; Corrêa, 2021, p. 956).

The authors talk about intentionality in pedagogical practice in early childhood education, and suggest that technology can be present as a support for learning, but that free play needs to have a demarcated space in the daily life of the childhood school context.

The article by Silva (2021), entitled "Analysis of the implementation of playful activities with autistic students: a literature review" argues that, for interaction with children in the early childhood education stage, play and playfulness are essential elements for child development, which could be proven, according to the author, from the systematic review of the literature, in the *Scielo* and Google Scholar, of publications in the period from 2017 to 2020, with the keywords: autism, playfulness and early childhood education. "Playing associated with educating provides great effectiveness in relation to the assimilation of content, without a doubt it is a method that deserves importance and research about it" (Silva, 2021, p. 168).

The author points out that the action of playing and the playful approach to the themes in the early childhood education stage favor the learning of children, especially those with Autism Spectrum Disorder (ASD):

In early childhood education, playfulness is also necessary. Inserting games, games, interactive activities in the first years of early childhood education is something that has favored the path of the child in school. Through play, the child begins to develop his capacity for imagination, abstraction, and apply actions related to the real world and the fantastic (Silva, 2021, p. 171).

Silva (2021) explains about the articles that are the result of the survey carried out, in all ten (10), and of these, two (2) evaluate the proposition of inserting the technology, among these the Playing, for the development of children with ASD:

In addition to games, much has been discussed about how to implement current technology tools in the educational context with students with ASD. This discussion is important because it helps to understand the importance of bringing playful activities based on technology to the educational space, especially when dealing with autistic students.

In the work of Costa (2019b) it was emphasized that in the midst of new existing technologies, educational games can be used as a tool to facilitate learning. Educational games are electronic devices that contain games whose purpose is to help the player learn certain subjects or educational themes (Silva, 2021, p. 175).

The author states that play and playfulness are crucial for the pedagogical work with children with ASD in the early childhood education stage, as well as teachers can insert technological resources (smartphones, tablets), given that children with ASD are very perceptible to the visual (Silva, 2021).

Thus, in this work, we can observe a defense by the author regarding the relationship between play and technologies, in the stage of early childhood education, considering specific characteristics of children and their motivations to learn.

Abraão and Madureira (2024) bring in the article "Context of traditional games in children's play: a literature review", a selection of eleven (11) texts in the Scielo, CAPES and LILACS periodicals, in the period from 2005 to 2022, in order to answer the questions: What is children's play like today? What are the games played by children today? What are the themes that have often been associated with traditional, digital games and education? And, also, the study aimed to know which are the main studies on traditional games. For the selection, organization and analysis of the material, Content Analysis was used (Bardin, 2016).

The selection of the eleven(11) articles was based on the relationship between traditional games and games involving the use of technological resources, taking into account the sociocultural context.

Abraão and Madureira (2024) state that, from the study, they were able to perceive that there is still a lack of research on this relationship between traditional games and those that require the use of technological devices. They highlight that they were able to perceive that there is a balance between games with rules, traditional games and electronic games in the lives of children, and that the school is a privileged space to mobilize children to play, developing and making the ludic culture flourish.

Regarding the possibility of a balance between the types of games to stimulate children's development, we can infer that, from Haydt (2024) onwards, it does not need to be an exclusion of another type - play and technologies, but that these are implemented as children have experiences in the real world, with real people, and not precociously in the virtual world only.

The article by Lopes, Castro and Oliveira (2024) entitled "Teacher training for the pedagogical use of emerging technologies in early childhood education: a historical-cultural investigation in public schools in Porto Velho/RO" brings the results of a research with six(6) preschool teachers about emerging technologies, focusing

on their pedagogical use, in two public schools in a municipality in the state of Rondônia, through interviews.

The object of the study, therefore, concerns the relationship between the training and practice of Early Childhood Education teachers through the pedagogical use of Emerging Technologies - ET, in Porto Velho/RO.

The research with preschool teachers revealed that they did not have discussions about emerging technologies in their initial training, Pedagogy, which demonstrated a gap, according to Lopes, Castro and Oliveira (2024, p. 12-13):

Without the necessary training to lead children to access technologies and to experience these tools in schools, these professionals start to compose a teaching staff that does not include cultural artifacts strongly present in contemporary culture in the school routine, portraying fragility in initial training and the lack of continuing education policies aimed at this type of training.

The authors point out that, as the teachers do not include these emerging technologies (ET), although many children experience them in other spaces, it is not allowed to work with them in this use of ET in a didactic way, as is the defense present in the study.

In fact, Lopes, Castro and Oliveira (2024) argue that in Pedagogy courses these contents of pedagogical use of ET can be reinforced for pedagogical practice in the early childhood education stage, and that continuing education can meet this aspect, as it was incipient according to the reports of the teachers interviewed.

We highlight that there is no deepening of the relations between play and technologies in the space of early childhood education in this study. Playfulness is treated as a didactic tool, as well as the so-called emerging technologies, considering guidelines from official documents. In any case, the article by Lopes, Castro and Oliveira (2024) brings a reflection, in the sense that, without a formative base, there is no way to mediate with children that involve play and technologies.

From the studies presented from the consulted bases, we can summarize that the author Ostetto (2024) states that teacher training, the view of children as inventive and space as a mobilizer of children's cultures, enrich children's expression through different languages, recognizing that playing is one of them. There is a

defense of play as essential for the development of children (Santos; Correa, 2021; Abraão and Madureira, 2024). Technology as a support for learning (Silva, 2021; Santos; Correa, 2021). In addition, there is a defense that teacher training can address emerging technologies so that it can be included in teacher planning with children, observing its intentionality (Lopes; Castro; Oliveira, 2024).

Finally, we highlight that there is still a need for more studies that address the relationship between children, technologies and play, as we observe that play and technologies are treated as tools or didactic resources, and this needs to be deepened in terms of children's relationships with them and not only the teacher's bias, of intentionality or as a means to facilitate knowledge.

Final considerations

Considering the problem of this study: How are playing and interactions with digital technologies presented/articulated in scientific productions published in the period from 2020 to 2025?, we sought to carry out a survey on platforms that could give us an overview of this theme and we understood that there is a defense of free play and its space in the routine of early childhood education. However, it still seems like a didactic tool, although we have had studies with the connotation that free play is essential for children's development.

In relation to children and their approaches to technologies, we observed that these technologies have a didactic purpose in the studies, seen as support, and the defense that teacher training needs to discuss more about it so that teachers who work with children can reflect on how technologies, especially digital ones, contribute or not, to interaction with children.

Based on the authors presented in this study, we affirm that children are inventive, subjects of rights, and that they need space for creation, for learning from others, for exchange, dialogue and shared learning for the construction of their identities (Sarmiento, 2008; Gouvea, 2008; Friedmann, 2022).

Free and spontaneous play, called by other authors as spontaneous play (Santos, 2012), brings the opportunity for children to develop their social skills, solve

conflicts, develop autonomy, and gradually be better able to deal with complex issues in their broader social life, and in this case we can include the experiences in the digital world.

As a point of arrival and as something to envision in future research that we do, we understand from Haidt (2024) that childhood-based play has been (and is being) modified to a childhood-based on cell phones, which brings risks to children's health and learning in various aspects (social, mental, physical, emotional, for examples), and that educational institutions and families need to dialogue so that experiences in the digital world are not more important than experiences in the real world, and that children's relationship with technological resources can be adequate, according to their age group and understanding for this use, mediated by adults, with dialogue being an essential tool for everyone who interacts with children.

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