

The relationship between time and things in the process of children's formation and learning

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Abstract

Children learn and develop in their daily lives through numerous experiences related to time. The aim of this article is to present the connection between time and objects from a social science perspective, as well as to show how children establish this relationship in the process of development and learning. The theoretical framework is grounded in the social science perspective, which views the relationship between time and objects as a social construction. The methodological approach is a literature review that maps and discusses how time and objects influence children's development and learning. The results show that children in schools learn chronological time, while in society, time and objects establish relationships between the past, daily life, and nature. Therefore, in the Anthropocene era, our relationship with things involves a transformation of children's cyclical interaction with objects and time.

Keywords: Time and things. Formation. Learning. Children.

A relação do tempo e das coisas no processo de formação e aprendizagem das crianças

Resumo

As crianças aprendem e estão em formação no seu dia a dia com inúmeras coisas vinculadas ao tempo. O objetivo deste artigo consiste em apresentar a conexão entre tempo e coisas a partir da perspectiva das ciências sociais, além de mostrar como as crianças estabelecem essa relação no processo de formação e aprendizagem. A fundamentação teórica tem como base a perspectiva das ciências sociais que considera a relação do tempo e das coisas como uma construção social. O procedimento metodológico é uma revisão

de literatura, na qual mapeia e discute como o tempo e as coisas influenciam a formação e a aprendizagem das crianças. Os resultados mostram que as crianças nas escolas aprendem o tempo cronológico, enquanto, em sociedade, o tempo e os objetos estabelecem relações entre passado, cotidiano e natureza. Deste modo, em tempos de Antropoceno, a relação com as coisas implica na transformação da interação cíclica das crianças com objetos e temporalidade.

Palavras-chave: Tempo e coisas. Formação. Aprendizagem. Crianças.

La relación entre el tiempo y las cosas en el proceso de formación y aprendizaje de los niños

Resumen

Los niños aprenden y se forman en su día a día a través de innumerables elementos relacionados con el tiempo. El objetivo de este artículo es presentar la conexión entre el tiempo y los objetos desde la perspectiva de las ciencias sociales, además de mostrar cómo los niños establecen esta relación en el proceso de formación y aprendizaje. La base teórica se fundamenta en la perspectiva de las ciencias sociales, que considera la relación entre el tiempo y los objetos como una construcción social. El procedimiento metodológico consiste en una revisión bibliográfica, en la que se analiza y se discute cómo el tiempo y las cosas influyen en la formación y el aprendizaje de los niños. Los resultados muestran que los niños en las escuelas aprenden el tiempo cronológico, mientras que en la sociedad, el tiempo y los objetos establecen relaciones entre el pasado, la vida cotidiana y la naturaleza. De este modo, en la era del Antropoceno, la relación con las cosas implica una transformación de la interacción cíclica de los niños con los objetos y la temporalidad.

Palabras clave: Tiempo y cosas. Formación. Aprendizaje. Niños.

Introduction

The child in the process of development is a learner engaged in the process of becoming human, living alongside time and the world around them.

Every day, children interact with time, as they depend on it for their routine of waking up, carrying out their activities, going to school, playing and even sleeping. This is because society is organised according to the social function of time; in other words, it maintains a routine that structures, organises and synchronises children's lives. The organisation of time is mediated by instruments such as clocks and calendars, which shape a person's relationship with time, turning the timed organisation of life into a habit. Thus, the child develops in accordance with the social norms of linear time and learns, through things, to organise their daily life.

However, children's formation has become instrumentalised and segmented due to technological rationality and the mechanisation of learning. Weber (2000) explains that the rationalisation of time in modernity, associated with the disciplined and linear use of time, has been utilised for the purposes of accumulation and efficiency. Nevertheless, education in the 21st century involves periods of uncertainty, grounded in critical awareness, dialogue and responsibility for one's own actions (Goergen, 2021), which requires an understanding of temporality amidst social and cultural transformations (Gatzemann; Wolfgang, 2001). Furthermore, children's lives have been influenced by countless social and environmental conditions that alter their relationship with time and things, ranging from the unbridled consumption of time and plastic items to the impact on the environment and society. Children are increasingly connected to smartphones and to the consumption of time and products that are becoming ever more accessible in their daily lives (Momo; Costa, 2010).

The accelerated rhythm caused by our troubled routine leads to a discussion on children's formation, in which two elements – time and things – are fundamental to understanding the new landscape of children's development in society, particularly with regard to learning. Consequently, the following questions are pertinent to this article: What is the relationship between time and things, and what makes them particularly relevant to children's formation? What do children learn from this relationship? In considering these questions, the aim of this article is to present the connection between time and things from the perspective of the social sciences, as well as to show how children establish this relationship in the process of formation and learning. Based on the perspective of the social sciences, the article presents as its theoretical foundation the relationship between time and things as a social construction, and

how time and things influence children's development and learning. To present children's relationship with time and things, the methodology used is a literature review, which maps out and discusses how time and things influence children's formation and learning.

In order to achieve its objectives, the article is divided into five sections: 'Time and things', 'Children's formation and learning in relation to time and things', 'The relationship between time and things for children in Brazil', 'Prospects for the (trans)formation of children's learning in relation to time and things in the Anthropocene era' and 'Conclusions'. The results show that children in schools learn chronological time, whilst in society, time and things establish relationships between the past, everyday life and nature. Thus, in the Anthropocene era, the relationship with things implies a transformation of children's cyclical interaction with objects and temporality, as it alters children's patterns of meaning and establishes a new relationship with time and the world.

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Time and things

Time is a fundamental dimension in the sociocultural dynamics of a group or society, structured into the present, the past, and the future. The concept of time also seeks to reflect on how we relate to it, that is, between nostalgia for the past, the present moment, and hope for the future (Hoy, 2009). The idea of time is often seen as natural, as it can be conceived as a line on which the past lies behind us, whilst the future presents itself as an invisible line in front of us. However, this representation of time is not intrinsic; it is an 18th-century construct influenced by Western thought, which has shaped our perception of things.

According to Thomas (2018), there are four key developments that explain the consolidation of linear time. The first is chronography, the art of representing historical events through timelines, with a regular and measurable distribution of dates. The second development is Darwin's theory of evolution, which conceives of evolution in linear terms, using diagrams that represent linear time – that is, from the lower past to the higher present – as a unique sequence of intricate, singular, and unrepeatable events. The third development

is chronophotography, which captures movement through successive images, representing time by means of straight-line graphs. The final development is the fourth dimension, originating in mathematics, in which human beings can identify three spatial dimensions: length, width, and depth. The conception of time as a line stretching through history has contributed to the idea that humanity is in a state of constant progress.

For example, philosophers such as Kant, Nietzsche, Husserl and Heidegger offer definitions of time that relate to society. Kant (1966) defines temporality as a characteristic of ourselves or of the world – that is, as a subjective condition; if the human subject does not exist, time ceases to exist and is not a thing-in-itself within empirical reality. In turn, Nietzsche (1980) approaches the concept of time through the eternal return, that is, the continuous cycle of all things in human life; although time is infinite, things are concrete. Husserl (1964) dichotomises the relationship between time and things, establishing that objective time (chronological, the time of the thing) is constructed from subjective time (the internal experience of temporality), which is the internal consciousness of time. Looking towards the future, Heidegger (1980) conceptualises time as a projection into the future, the ‘becoming-to-be’, which allows a return to the past, not as a chronological point, but linked to the human dimension.

Time plays a causal role in shaping action in the social sciences. In all societies, it constitutes a framework within which life is structured, organised and synchronised. Time establishes the very limits of social reality by ordering social life and shaping individuals’ consciousness; that is, human existence is organised by *Zeitgebers* (time givers). Social institutions seek control through duration, succession, temporal location and uniformity (Kuper, 2004). The nature of the existence of time is obscured by artefacts and by human invention in the construction of time, as indicated by artefacts (Birth, 2012). Human beings are capable of maintaining control over the objects they possess, as can be observed in the persistence of material objects over time (Hawley, 2004).

In this sense, it is pertinent to consider time as a social construct that serves as the basis for the constitution of institutions. The institutionalization of time occurs through the creation of patterns in which, from a sociological

perspective, actors interact according to established modes of use. Time materializes in tangible representations, such as pocket watches, sundials, and clock hands. In the West, people mark time and organize their social lives through clocks, calendars, religious festivals, and other sources. With the passage of time, these objects tend to become institutionalized, creating patterns of use that are guided by cultural values, leading the group to adopt certain actions (Durkheim, 1996). According to Bourdieu (2007), time is shaped by the past trajectories of agents, including factors such as social trajectory, family background, and education, which manifest in the present in the form of habitus. In this way, social trajectories influence the individual's relationship with time.

Objects inform us about time, but we have also become dependent on these artefacts to conceive of time, since humans have developed objects based on conceptions of time that are disconnected from earthly experience. An example of this is calendars that depart from the Earth's rotation around the Sun and utilize mechanical time. These objects can provide an illusion of coherence; however, such coherence is misleading, since technical devices, such as clocks, are merely tools that represent time (Birth, 2012).

This organized and structured conception of time establishes a distinction between the humanities and the natural sciences, in which human experiences in our society stem from social development and the regulation of society, characterizing the civilizing process. The transition from the Middle Ages to the Modern Age occurred due to a change in the rhythm and individual self-control, which, in turn, resulted in the creation of a new structure of human relations in society. This conception of time derives from a Eurocentric construct, in which a pragmatic synchronization of different temporal levels is observed (Elias, 1990, 1998). The question of time emerges as a concern of modernity beginning in the 14th century (Alliney, 2002). However, different civilizations interpret time in distinct ways, coordinating human experiences between nature and society. This implies understanding the dichotomy between the natural world and human societies; that is, one should not consider human beings and nature as separate entities, but rather human beings embedded in nature, grasping time in its multiplicity (Elias, 1990). Understanding the concept of time

and its interrelationships is crucial to grasping how both influence children's development and learning.

Children's formation and learning in relation to time and things

Children's formation and learning involve an understanding of time and things, which entails the construction of knowledge regarding the reasons, aims, and purposes that bring children closer to temporal realities. The question that arises is: how can we bring children closer to time and things? Time, understood as a social construct, accompanies the child's learning process and acts as a co-constructor of their social reality. It is essential to recognize that objects are intrinsically linked to the child's social reality. For example, a child is able to identify the historical differences in smartphones by observing their grandfather's relationship with this device. The child mentions the difficulties the grandfather faces when using a smartphone and his lack of understanding of the digital operating system associated with this object.

Children born without any sense of time; thus, childhood is organized by external influences, or *Zeitgebers* (time givers). As they enter the world, children learn, to a large extent, lessons about time, internalizing the rhythms of language and the schedules of family activities. As they mature, their lives come to be regulated by the temporal structures of school, work, leisure, and the community (Kearl, 2007). Children's temporal daily lives "[...] do not arise randomly and arbitrarily 'on their own,' but are actively, consciously, and intentionally produced, shaped, and imbued with meaning by children in their daily interaction with the social environment" (Wehr, 2017, p. 148). This implies that time does not exist independently; rather, it is a social symbol and the result of an extensive learning process, in conjunction with other cultural aspects. Temporal learning in an industrialized society guides children's social lives and shapes their temporal perception of the world, adapting it to the normative rhythm of punctuality (Elias, 1990). The social clock and social norms have transformed homogeneous classrooms into educational environments segmented by age group (Kearl, 2007).

In a similar way to the absence of temporal perception in children at birth, they also lack an innate instinct to understand the dynamics of the world

around them. The construction of time in our contemporary society is increasingly grounded in individual experiences, which project our essences in the form of (individual) creations and objects that persist over time. Thus, there is a growing investment in material goods within consumer society (Hétier, 2023), as well as consumption characterized by temporal acceleration. A child's development requires the use of various objects, such as baby bottles, diapers, notebooks, pencils, and toys, which highlights the intensification of consumption. The experience of interacting with these objects in society, together with ethnographic research, reveals a complexity of meanings that is reflected in children's relationships with objects, especially with regard to consumerism and material culture (Myers, 2016). Children learn to cope with time as they develop their ability to manage it in the face of the perception of time acceleration, which is becoming increasingly pronounced. This phenomenon is driven by technological advances, multitasking practices, reduced break intervals, deadline demands, and performing tasks under pressure (Kübel; Wittmann, 2020).

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A child's formation establishes an intrinsic relationship with objects, involving learning about their materiality in relation to children's actions. In this context, intergenerational knowledge drives future-oriented actions. Material culture plays a significant role in understanding the materiality of objects and in acquiring knowledge about the material sciences, in connection with their sociocultural functions and the symbolic meaning that objects take on. Furthermore, theoretical approaches in material culture studies establish a link with everyday experience (Stocking, 1985; Wagner; Vieira, 2023). The interconnection between objects and temporalities generates its own rhythms, projecting objects as agents, since their use shapes specific periods and processes the past, creating future dimensions for the construction of new objects.

In this sense, time and objects play a significant role in children's learning, as they guide children within their culture and shape their understanding of the world. Children's development and learning involve the transformation of learning processes over time and in relation to objects, in which scientific knowledge intertwines with everyday knowledge, thereby fostering learning (Kuhn, 2003). This implies that children's knowledge and interaction with objects are transformed as curiosity and discovery are sparked. Below, some

studies conducted in Brazil demonstrate how children establish the relationship between time and objects in their process of formation and learning.

The relationship between time and things for children in Brazil

Children internalize and learn the concept of time in both school and non-school contexts. However, schools tend to teach primarily chronological time (Leopoldino, 2024), while textbooks present a rigid notion of time (Tuma; Cainelli; Oliveira, 2010). The conception of the past developed by children is causal rather than chronological in nature, since they do not interpret history as a sequence of disconnected events but rather establish relationships with objects (Oliveira, 2003). In this sense, the aim is to show how Brazilian children, in the process of learning about time and objects, establish temporal relationships that can create links with the past, with the accelerated daily life, and with nature.

The relationship that children establish with things from the past and with history can be observed through photographs, school supplies, and museum artefacts. Photographs are objects whose images can highlight the past of a particular place, allowing us to understand how children perceive the relationship between time and space. When stimulated, this perception fosters meaningful historical learning. The connection children make between time and space, through photographs from different periods in the city of Goiânia – such as 1937, 1942, and 2011 – enables them to recognize urban transformations over the years. In this way, the children identify that the 1937 photograph depicts older houses and unpaved streets, while the 2011 image shows new buildings, paved streets, and an increase in the city's vertical development. The relationship that children establish between time and space highlights how they develop a historical understanding of continuity, stimulating reflection on the interdependence between the present, past, and future (Silva; Fleury, 2015).

When children interact with school objects, they establish a relationship with time through their experiences of reinterpreting the past. Medeiros's (2011) study examines the use of a bell from the 1960s in a public school, with the aim of identifying how children relate to the time when the bell was

used compared to the present day. The children's experience of ringing the bell twice and saying a word evokes memories of the old school, while allowing them to reinvent the meanings of their past experiences and reconfigure their understanding of their lives in the present. This connection between the contemporary bell and memories of its use decades ago is possible because children learn through everyday experiences with objects, creating a narrative that transforms memories into actions.

Museum objects demonstrate that children establish connections between time and things, as they develop historical understanding and foster intersubjectivity between the child and the object. Erven (2013) investigates how children create links between a museum object and notions of the past and present. This relationship is formed when the child understands the object's historical context in relation to time. Thus, questions such as "Who made it? When was it made? For whom was it made?" foster an understanding of temporality and encourage discoveries related to the past. In this way, a museum object establishes a fluid temporal connection when the child compares a chair from the year 1500 with the chair in their grandmother's house, which implies that the child constructs their perception of time from the present (Miranda, 2010). It is important to consider that children's relationship with objects and time is a socially learned construction.

The relationship that children establish with accelerated time highlights how learning about the use of time is mediated by tools such as clocks, calendars, and routines. How do children construct this conception of accelerated time? (Kreutz, 2014). These objects transform children's temporal experience into a chronological and linear dimension, characterized as utilitarian time, marked by the notion of commitment and efficiency (Elias, 1998). Thus, children's school routine is permeated by a concern for productivity. Chronological time, as outlined by the calendar, imposes a negation of the past and prioritizes interest in the future (Schuler, 2019).

Momo and Costa (2010) argue that it is possible to analyze how children have been shaped by media culture and consumerism in the postmodern context, where new ways of being a child and experiencing childhood have been established. Children's perceptions of the present, past, and future have been reinterpreted, as discussed by Momo and Costa (2010). This analysis

leads us to consider the postmodern context characterized by consumption, spectacle, visibility, ephemerality, media, technology, and ambivalence, in which children seek enjoyment and pleasure. In this sense, children experience the “time of objects” and the “time of visibility.” In the “time of objects,” they live amidst the excessive production and rapid disposal of material goods; for example, the use of backpacks inspired by Disney princesses, Sandy’s sandals, and Powerpuff Girls T-shirts. On the other hand, in the “time of visibility,” children are immersed in the society of spectacle, where they are prepared for the media and consumption. An example of this is a boy’s desire to participate in a fashion show to gain media exposure, on the internet, and potentially earn money. Thus, children’s time aligns with contemporary culture, leading us to reflect on the transformation in children’s perceptions in the face of new ways of being a child and experiencing childhood (Momo; Costa, 2010).

On the other hand, while Brazilian children establish relationships with a fast-paced past and present, Brazilian Indigenous children develop a relationship with time that is rooted in daily life, nature, and cosmology, in which the elements of nature are intertwined with the child’s temporal experience of the world. Time is perceived as a process of continuous learning, linked to nature and cosmology, and this knowledge is passed down from elders to the younger generation. The Galibi-Marworno indigenous child, for example, learns about time through the ecological calendar, which is grounded in living with rivers, trees, birds, and the cultivation of food. These children understand ecological time by learning about the cultivation cycle, as in the case of cassava. Thus, they become familiar with the seasons – spring, summer, fall, and winter – and with the environmental processes that govern them. For Indigenous children, the elements of the world are perceived within a cyclical perspective of time (Codonho, 2007).

The concept of time is intrinsically linked to daily life and experiences, as well as to nature and ancestral traditions (Paula; Bernardi; Souza, 2021). For Indigenous peoples, time is constructed through lived experience, distinguishing it from historical time (Severino; Filho; Januário, 2011). Among the Guarani-Kyringüe, the notion of time is associated with domestic activities, with tasks such as harvesting cassava, washing dishes, and caring for younger siblings being fundamental to this understanding. Children learn about time and the world through observation and experiences mediated by respect for

their elders (Bergamaschi, 2008). However, the formal education of indigenous children has generated intergenerational conflicts (Nunes, 2005), since linear chronological time has been taught, leading children to understand time as present, fleeting, ephemeral, and instantaneous (Paula; Bernardi; Souza, 2021). In this context, it is essential to consider the child as an integral part of the social construction of daily life in relation to time and objects within the process of transformational learning across generations and among the children themselves.

Perspectives for the (trans)formation of children's learning in relation to time and things in the Anthropocene

Perspectives on time and things, then, are intertwined with the notion that human-made objects have fostered a dependence on things, especially on objects that mechanically measure time. However, this mechanized and structured time establishes a dichotomy between the humanities and natural sciences, since the pragmatic synchronization of time regulates society, promoting a new configuration of interpersonal relationships oriented toward individual self-control and temporal domination. Children's education and learning regarding time and objects involve considering time as a social construct, in which the child is a co-constructor of their social reality. In Brazil, for example, children develop the notion of time and things through schooling and their daily lives, which implies a historical, accelerated, and everyday learning of the relationships between things and time.

The perspectives for the (trans)formation of children's learning regarding time and things in the Anthropocene era are based on the premise that society is governed by chronological and linear time. In the context of the Anthropocene, the linear time of infinite progress has come to an end, and things demand a "grounding," in which human beings must recognize their dependence on objects and understand the finitude of the resources necessary for the maintenance of collective survival (Latour, 2017; 2018). This reflection is particularly pertinent in light of contemporary crises, amid countless environmental and social catastrophes, for in the Anthropocene, human actions are called into question, since, by exploiting nature, humans subjugate it (Wulf,

2022). Such a context implies consideration of diverse bodies of knowledge regarding conceptions of time and objects.

Some ethnographers argue that time should be viewed as a cyclical phenomenon. Greenhouse shows that "[...] when ethnographers seek to understand time in societies that do not use Western technologies of timekeeping, they do so based on cultural knowledge of natural cycles. It is interesting to note that some of them do not find it in this context" (Greenhouse, 1996, p. 40). This difficulty stems from the adoption of a European/non-European dichotomy, which still serves as a reference for the European conception of time (Gupta, 1994; Chakrabarty, 1997). This situation suggests that the concept of time is not always internalized in the habitus (Bourdieu, 1979) in colonial and postcolonial contexts. The Kabyles, a people located in northern Algeria, do not share the capitalist conception of the future or the idea of time, as they are exempt from the temporal impositions of schedules and disregard clocks and alarm clocks. Thus, temporal markers do not comprehensively regulate life since the Kabyle way of life is structured by a mythical-ritual calendar linked to agricultural cycles (Bourdieu, 1963; 1979).

Indigenous peoples point to a cosmological hypothesis in which they establish a pact with the cosmos, learning to articulate their thoughts through the forests and the rhythms of nature (Marras, 2020). Similarly, traditional peoples, family farmers, and local communities possess knowledge that is deeply rooted in their cosmologies and in ways of life passed down through generations (Oliveira; Amoroso; Lima; Shiratori; Marras; Emperaire, 2020). The Krahô tribe's corn cycle in Tocantins, which encompasses planting, growth, and harvest, connects to a time whose narratives and performances promote the transmission of knowledge across generations, related to the way of being and living through farming in the Cerrado (Lima; Krahô; Aldé, 2020). This coexistence of ecosystems among animals, plants, humans, and their environment ensures a circular time between objects and things within their context (Moulin; Marquez; Andrés; Cançado, 2022). Therefore, things are not isolated from time, as they possess developmental sequences in which human-made artifacts exhibit a continuous flow within a given context (Kubler, 1962).

Demonstrating alternative temporalities is not enough, since anthropology and history have already addressed this issue. What is relevant is to

highlight the coexistence of multiple temporalities through a range of disciplines, such as the social sciences, physics, and philosophy (Birth, 2012). Given that time integrates different domains of knowledge and experience, it is pertinent to consider things and how all things are linked to time, society, subjects, and nature over time. Time should not be conceived as a straight line; on the contrary, it is circular. When Nietzsche asserts that everything flows and transforms, and that there is no infinite force or God, he suggests that, if matter is finite and time is infinite, everything returns. The concept of Eternal Return indicates that becoming highlights the difference between the human being and time, the latter of which continues to flow and originates in the cosmological hypothesis of immanence, which enables the experience of things. According to Latour (1994), we live in a temporal mix, characterized by politemporality. Although modernity seeks to separate nature and society, our experience is immersed in a complex network of hybrid temporalities.

In this regard, what can be said about children's circular learning regarding the future, in terms of time and material things? Reflection on the future transcends a mere concern for individuals, encompassing a unique temporal experience that fosters an awareness of the shared destiny between human beings and nature. The future should not be considered only from a negative perspective; it is essential to develop the capacity to continue creating and conceiving new cycles that integrate sustainability, avoiding a reduction to individualism. Thus, it is crucial to think in terms of intergenerational solidarity (cyclical, where each new generation brings renewed life) and to consider natural cycles, in order to establish a new perspective on time that takes children into account (Hétier, 2023). This implies recognizing that people care about their children and grandchildren: "With every child born into this world, humanity begins anew in the face of mortality, and from this perspective, it is the survival of humanity itself that is at stake here" (Jonas, 1990, p. 258).

It is therefore considered a form of learning that promotes transformation, since it is intrinsic to the human condition and to the reconstruction of relationships with objects, in which human beings establish a connection between the self and the world (Koller, 2023). This learning involves collective awareness and emancipation (Freire, 1970; Singer-Brodowski, 2016), in addition to being immersed in historical and cultural experiences, characterized

as a constantly evolving process within the environment in which one lives with things (Wulf, 2022). Learning with things transforms, as it alters patterns of perception, meaning, thought, values, and action. In this process, children's experiences with things and with time encompass historicity, intergenerationality, imagination, cultural and material heritage, and nature, as well as projections into the future. Thus, educational processes can foster changes in the child's relationship with the world and with themselves. Therefore, when considering the problems and challenges for the education of the future (UNESCO, 2022), the contemporary challenges of Bildung (human formation) lie in the learning of objects and in the cyclical interaction between objects, individuals, and temporality.

Conclusions

This article concludes that the relationship between time and things in children's development and learning process, from a social science perspective, is established as a social construct within the reality in which the child lives. The child's reality is influenced by chronological time and by the time constructed within society. Brazilian children are capable of establishing a relationship between objects and the past, as well as with their fast-paced daily lives in the present, although indigenous children establish a relationship between time and natural objects. However, in the Anthropocene era, the relationships between time and objects have been transforming, establishing new relationships that critique chronological time – the time of progress – in favour of a time that considers cyclical relationships with objects. This means changing children's patterns of meaning regarding time and things, in which children build greater closeness to historicity, intergenerationality, cultural and material heritage, and nature.

Time and things, as indispensable premises and modalities of education, prove to be multifaceted in pedagogical processes. The challenge lies in clarifying the specific dimensions of the relationship between education and learning, as well as in developing a theory and pedagogy of time and things in education (Schmidt-Lauff, 2012). The landscape of transformations in the Anthropocene drives the creation of new concepts and themes that can

be accessible to children, allowing them to consider the temporal context and the implications of things for the social and environmental reality that surrounds them. The goal, therefore, is to encourage and challenge children in learning situations that promote discovery, observation, experimentation, and questioning of the natural and social science phenomena present in their daily lives, which are fundamental to understanding the world (GDSU, 2013). This contributes to the development of critical awareness and fosters dialogue between temporalities circulating among different societies. Thus, when considering the relationship between time and things in children's education and learning, it is essential to recognize the decisive role of education in bringing children closer to their reality, to diversity, and to reflections on the future.

Bibliography

ALLINEY, Guido. **Time and soul in fourteenth century Theology**. Florence: Casa Editrice Leo S. Olschki, 2002.

BERGAMASCHI, Maria Aparecida. Infância nas aldeias Guarani: um modo próprio de estar dos Kyringüe. **Contexto & Educação**, Ijuí, v. 23, n. 79, p. 223-247, 2008.

BIRTH, Kevin. **Objects of time**. How Things Shape Temporality. New York: Palgrave Macmillan, 2012.

BOURDIEU, Pierre. The attitude of the algerian peasant toward time. **Mediterranean Countrymen**, v. 6, p. 55-72, 1963.

BOURDIEU, Pierre. **Algeria 1960**. Cambridge: Cambridge University Press, 1979.

BOURDIEU, Pierre. **A Distinção**: crítica social do julgamento. Tradução Daniela Kern e Guilherme Teixeira. São Paulo: Edusp; Porto Alegre: Zouk, 2007.

CHAKRABARTY, Dipesh. The time of history and the times of gods. In: LOWE, Lisa; LLOYD, David (org.). **Politics of culture in the shadow of capital**. Durham: Duke University Press, 1997.

CODONHO, Camila Guedes. **Aprendendo entre pares**: a transmissão horizontal de saberes entre as crianças indígenas Galibi-Marworno (Amapá, Brasil). 2007. 134f. Dissertação (Mestrado em Antropologia Social) – Programa de

Pós-Graduação em Antropologia Social, Universidade Federal de Santa Catarina, Florianópolis, 2007.

DURKHEIM, Emile. **As formas elementares da vida religiosa**: o sistema totêmico na Austrália. Tradução Paulo Neves. São Paulo: Martins Fontes, 1996.

ELIAS, Norbert. **O processo civilizacional**. Uma história dos costumes. Tradução Ruy Jungmann. Rio de Janeiro: Jorge Zahar, 1990 (v. 1)

ELIAS, Nobert. **Sobre o tempo**. Tradução Vera Ribeiro. Rio de Janeiro: Jorge Zahar, 1998.

ERVEN, Maria Fernanda Van. **Crianças no templo das musas**: mediadores culturais e aprendizagens em museus. 2013. 166f. Dissertação (Mestrado em Educação) – Programa de Pós-graduação em Educação, Universidade Federal de Juiz de Fora, Juiz de Fora, 2013.

FREIRE, Paulo. **Pedagogia do oprimido**. Paz e Terra, 1970.

GATZEMANN, Thomas; WOLFGANG, Nieke. **Bildung in der zeit**. Zeitlichkeit und Zukunft – pädagogisch kontrovers. Weinheim: Deutscher Studien, 2001.

GAUL, Magnus. **Vom umgang mit der zeit bei kindern**. Musik und Zeitempfinden als Chance didaktischer Lernprozesse. Weinheim: Deutscher Studien, 2001.

Gesellschaft für Didaktik des Sachunterrichts (GDSU). (org.). **Perspektivrahmen achunterricht**. Vollständig überarbeitete und erweiterte Ausgabe. Bad Heilbrunn: Julius Klinkhardt, 2013.

GOERGEN, Pedro. A formação humana em tempos incertos. In: VAGO, Tarcisio Mauro; LARA, Larissa Michelle; MOLINA NETO, Vicente (org.). **Educação física e ciências do esporte no tempo presente**: desmonte dos processos democráticos, desvalorização da ciência, da educação e ações em defesa da vida. Maringá: Editora da Universidade Estadual de Maringá (Eduem), 2021.

GREENHOUSE, Carol. **A Moment's notice**. Ithaca: Cornell University Press, 1996.

GUPTA, Akhil. The Reincarnation of Souls and the Rebirth of Commodities: Representations of Time in 'East' and 'West'. In: BOYARIN, Johnathan (org.). **Remapping Memory**: The Politics of Time Space. Minneapolis: University of Minnesota Press, 1994.

HAWLEY, Katherine. **How things persist**. Oxford: Oxford Press, 2004.

HEIDEGGER, Martin. **Being and time**. Tradução John Macquarrie e Edward Robinson. Oxford: Blackwell, 1980.

HÉTIER, Renaud. Time. In: WALLENHORST, Nathanael; WULF, Christoph (org.). **Handbook of the Anthropocene Humans between Heritage and Future**. Berlin: Springer, 2023.

HOY, David. **The time of our lives**. A critical history of temporality. Cambridge/London: The MIT Press, 2009.

HUSSERL, Edmund. **The phenomenology of internal time consciousness**. Tradução James Churchill. Bloomington, Indiana: Indiana University Press, 1964.

JONAS, Hans. **Le principe responsabilité**. Paris: Flammarion, 1990.

KANT, Immanuel. **The critique of pure reason**. Tradução Max Müller. New York: Doubleday Anchor, 1966.

KEARL, Michael. Time. In: DARITY, William (org.). **International Encyclopedia of the Social Sciences**. Nova Iorque: Macmillan, 2007.

18 KREUTZ, Laura Nicele. **Tempo e infância**: ritmo acelerado para as crianças? Monografia de Pedagogia. Centro Universitário Univates, 2014.

KÜBEL, Sebastian; WITTMANN, Marc. Zeitwahrnehmung. In: SCHINKEL, Sebastian; HÖSEL, Fanny; KÖHLER, Sina-Marren; KÖNIG, Alexandra; SCHILLING, Elisabeth; SCHREIBER, Julia; SOREMSKI, Regina; ZSCHACH, Maren (org.). **Zeit im Lebensverlauf Ein Glossar**. Bielefeld: Transcript, 2020.

KUBLER, George. **The Shape of time**. Remarks on the history of things. New Haven: Yale University Press, 1962.

KUHN, Hans Werner (org.). **Sozialwissenschaftlicher Sachunterricht**. Konzepte, Forschungsfelder, Methoden. Ein Reader. Herbolzheim: Centaurus, 2003.

KUPER, Adam (org.). **The Social Science Encyclopedia**. London: Routledge, 2004.

LATOUR, Bruno. **Jamais fomos modernos**. Ensaio de Antropologia Simétrica. Tradução Carlos Irineu da Costa. Rio de Janeiro: Editora 34, 1994.

LATOUR, Bruno. Anthropology at the Time of the Anthropocene: A Personal View of What Is to Be Studied. In: BRIGHTMAN, Marc; LEWIS, Jerome. (org.) **The**

Anthropology of Sustainability. Palgrave Studies in Anthropology of Sustainability. Nova Iorque: Palgrave Macmillan, 2017.

LATOUR, Bruno. **Down to earth:** Politics in the New Climatic Regime. New York: Polity, 2018.

LEOPOLDINO, Maria Aparecida. Crianças e história: o tempo como conceito e a narrativa da temporalidade. **Cadernos de Pesquisa**, São Paulo, v. 54, p. 1-17, 2024.

LIMA, Ana; KRAHÔ, Creuza Prumkwyj; ALDÉ, Veronica. Histórias e cantos do milho Krahô. As muitas vozes do cerrado. In: OLIVEIRA, Joana; AMOROSO, Marta; LIMA, Ana Gabriela; SHIRATORI, Karen; MARRAS, Stelio; EMPERAIRE, Laure (org.). **Vozes vegetais:** diversidade, resistências e histórias da floresta. São Paulo: Ubu Editora/ird, 2020.

MARRAS, Stelio. O Brasil e os brasis no Antropoceno: bifurcações à vista. **Revista do Instituto de Estudos Brasileiros**, São Paulo, v. 77, p. 126-142, 2020.

MEDEIROS, Andrea Borges de. **Memórias de crianças em crônicas de escola:** modos de lembrar, de narrar e de ser. 2011. 353f. (Tese de doutorado) – Programa de Pós-Graduação em Educação, Universidade Federal de Juiz de Fora, Juiz de Fora, 2011.

MIRANDA, Sonia Regina. Estranhos passados encontrados em um museu: a criança e seus olhares sobre o tempo desconhecido. **Caderno Cedes**, Campinas, v. 30, n. 82, p. 369-382, 2010.

MOMO, Mariangela; COSTA, Marisa Vorraber. Crianças escolares do século XXI: para se pensar uma infância pós-moderna. **Cadernos de Pesquisa**, São Paulo, v.40, n.141, p. 965-991, 2010.

MOULIN, Gabriela; MARQUEZ, Renata; ANDRÉS, Roberto; CANÇADO, Wellington (org.). **Habitar o Antropoceno.** Belo Horizonte: BDMG Cultural/Cosmópolis, 2022.

MYERS, Casey. Children and Objects. In: PETERS, Michael (org.) **Encyclopedia of Educational Philosophy and Theory.** Springer, Singapore, 2016.

NIETZSCHE, Friedrich. Kritische Studienausgabe in 15 Banden. Colli, Giorgio; Montinari, Mazzino (org.). **Munich:** Deutscher Taschenbuch Verlag, 1980.

NUNES, Angela. Childhood dynamics in a changing culture. examples from the Xavante people of central Brazil. In: KNÖRR, Jacqueline (org.). **Childhood and Migration**: From Experience to Agency. Bielefeld: Transcript, 2005.

OLIVEIRA, Joana; AMOROSO, Marta; LIMA, Ana Gabriela; SHIRATORI, Karen; MARRAS, Stelio; EMPERAIRE, Laure (org.). **Vozes Vegetais**: diversidade, resistências e histórias da floresta. São Paulo: Ubu Editora/ird, 2020.

OLIVEIRA, Sandra Regina Ferreira de. O tempo, a criança e o ensino de história. In: ROSSI, Vera Lúcia Sabongi de; ZAMBONI, Ernesta (org.). **Quanto tempo o tempo tem!**. São Paulo: Alínea, 2003.

PAULA, Rute Barbosa de; BERNARDI, Luci dos Santos; SOUZA, Maria de. Kairós e Chronos: sobre os tempos e a cosmologia Kaingang. **Tellus**, Campo Grande, v. 21, n. 45, p. 87-114, 2021.

SCHMIDT-LAUFF, Sabine. **Zeit und bildung**. Annäherungen an eine zeittheoretische Grundlegung. Münster: Waxmann, 2012.

SCHULER, Betina. Ler e escrever como possibilidade de uma relação infantil com o tempo. **Revista História da Educação**, Porto Alegre, v. 23, p. 1-33, 2019.

SEVERINO FILHO, João; JANUÁRIO, Elias. Os marcadores de tempos indígenas e a etnomatemática: a pluralidade epistemológica da ciência. *Zetetiké*, Campinas, v. 19, n. 1, 2011.

SILVA, Maria da Conceição; FLEURY, Eunice Antunes. Educação histórica: percepção de crianças sobre tempo e espaço em imagens da cidade de Goiânia. **Educação**, Santa Maria, v. 40, n. 3, p. 579-590, 2015.

SINGER-BRODOWSKI, Mandy. Transformative Bildung durch transformatives Lernen. Zur Nowendigkeit der erziehungswissenschaftlichen Fundierung einer neuen Idee. **Zeitschrift für internationale bildungsforschung und entwicklungspädagogik**, v. 39, n. 1, p. 13-17, 2016.

STOCKING, George. (org.). **Objects and others**. Essays on Museums and Material Culture. Madison: University of Wisconsin Press, 1985.

THOMAS, Emily. **Absolute time**: Rifts in Early Modern British Metaphysics. Oxford: Oxford Press, 2018.

TUMA, Magda Madalena; CAINELLI, Marlene Rosa; OLIVEIRA, Sandra Regina. Os deslocamentos temporais e a aprendizagem da história nos anos iniciais do ensino fundamental. **Caderno Cedes**, Campinas, v. 30, n. 82, p. 355-367, 2010.

UNESCO. **Reimaginar nossos futuros** juntos. Um novo contrato social para a educação. Brasília: UNESCO, 2022.

WAGNER, Bernd; VIEIRA, Karina Limonta. Aprendizaje político, histórico e intercultural con objetos culturales em museo. **Museologia e Patrimônio**, v. 16, n. 2, p. 221-239, 2023.

WEBER, Max. **Economia e sociedade**. Brasília: Editora Universidade de Brasília, 2000.

WEHR, Laura. Kind sein, Zeit haben? Den kindlichen Umgang mit Zeit verstehen lernen. **KiTa**, v. 7-8, p. 148-152, 2017.

WULF, Christoph. **Educação como conhecimento do ser humano na Era do antropoceno**: uma perspectiva antropológica. Tradução Karina Limonta Vieira. São Paulo: Cortez Editora, 2022.

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