

ACTS OF CURRICULUM AND LEARNING STRATEGIES IN THE PRACTICES OF CHILDREN'S CULTURES WITH DIGITAL TECHNOLOGIES

ATOS DE CURRÍCULO E ESTRATÉGIAS APRENDENTES NAS PRÁTICAS DAS CULTURAS INFANTIS COM AS TECNOLOGIAS DIGITAIS

ACTOS DE CURRÍCULO Y ESTRATEGIAS DE APRENDIZAJE EN LAS PRÁCTICAS DE CULTURAS INFANTILES CON TECNOLOGÍAS DIGITALES

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ABSTRACT: This article aims to understand the types of learning strategies in the practices of children's cultures with digital technologies. Thus, with a plural look at the phenomenon, we use the multi-referential epistemology linked to the strategies of the research methodology with children. Therefore, this qualitative investigation was based on the assumptions of inspiration in ethnography for listening to the voices of participating children. The research devices used to construct the data were: field diary and observation lasting four months in the private family space of two children aged three and five years. Among the results, we identified how children present different learning strategies when they are immersed in virtual spaces with digital technologies. In this contact, they learn foreign language words, letters, colors, numbers, shapes and, in addition, make a connection with school contents, that is, they produce curriculum acts

KEYWORDS: Children's cultures. Digital Culture. Learnings. Protagonisms

RESUMO: *Este artigo tem como objetivo compreender os tipos de estratégias aprendentes nas práticas das culturas infantis com as tecnologias digitais. Assim, com um olhar plural para o fenômeno, utilizamos a epistemologia multirreferencial bricolada com as estratégias da metodologia de pesquisa com crianças. Para tanto, essa investigação qualitativa se alicerçou nos pressupostos de inspiração na etnografia para a escuta das vozes das crianças participantes. Os dispositivos de pesquisa utilizados para a construção dos dados foram: diário de campo e observação com duração de quatro meses no espaço privado familiar de duas crianças com três e cinco anos. Dentre os resultados, identificamos como as crianças apresentam estratégias diferenciadas de aprendizagens quando estão imersas nos espaços virtuais com as tecnologias digitais. Nesse contato, elas aprendem palavras em língua estrangeira, letras, cores, números, formas e, além disso, fazem conexão com os conteúdos escolares, ou seja, produzem atos de currículo.*

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PALAVRAS-CHAVE: *Culturas infantis. Culturas digitais. Aprendizagens. Protagonismos*

RESUMEN: *Este artículo tiene como objetivo comprender los tipos de estrategias de aprendizaje en las prácticas de las culturas infantiles con tecnologías digitales. Así, con una mirada plural al fenómeno, utilizamos la epistemología multireferencial bricollada con las estrategias de la metodología de investigación con niños. Por tanto, esta investigación cualitativa se basó en los supuestos de inspiración en la etnografía para escuchar las voces de los niños participantes. Los dispositivos de investigación utilizados para la construcción de datos fueron: diario de campo y observación de cuatro meses en el espacio familiar privado de dos niños de tres y cinco años. Entre los resultados, identificamos cómo los niños presentan diferentes estrategias de aprendizaje cuando están inmersos en espacios virtuales con tecnologías digitales. En este contacto aprenden palabras, letras, colores, números, formas en lengua extranjera y, además, hacen una conexión con los contenidos escolares, es decir, producen actos curriculares.*

PALABRAS CLAVE: *Culturas infantiles. Culturas digitales. Aprendizajes. Protagonismos*

Introduction

From the first years of life, children are already immersed in the processes provided by the digital repertoire. That is, they are born in familiar spaces that enable ways to connect and approach the digital network. In this approach, children's cultures are enriched by the symbolic universe of digital technologies, enabling communication, learning and information exchange processes.

Thus, in this investigation, we recognize children as interlocutors of educational experiences that emerged from the senses and meanings produced in the context of digital cultures attributed from the childhood culture itself. In this contact with repertoires available on digital interfaces, the little ones build learning actions. These actions are constituted as curriculum actions, since from symbolic exchanges with peers, cultures, society and digital devices, they interpret and re-signify processes, through actions, their own cultures.

However, it is crucial to emphasize that despite these actions being fruitful to formal educational practices, because when handling these devices, they develop skills and constitute unique learning, as a result of a curricular, prescriptive and restrictive scenario, they are not present in the pre-established curriculum, therefore, they are not part of the school setting (MACEDO, 2013). In this way, we understand that children's cultures in contemporary times are being enhanced by immersion in networks and constitute, to a certain extent, based on them, curriculum acts in everyday interactions.

Therefore, in our research, we noticed that children have given rise to new learning attitudes in/through the playful actions of children's cultures with digital technologies, and these acts constitute curricula authorships not yet present in the school space. By acting in scenes from the universe of digital cultures, they affect, learn, create, imagine and enrich the cultural productions of childhood. As protagonists of themselves, they constitute other ways of occupying the virtual space, forging significant experiences in their performances, in addition to establishing connections with the school space.

This article is part of an investigation carried out in the Postgraduate Program in Education at the Federal University of Sergipe, in the Research Group on Education and Digital Cultures³ (ECult/UFS/CNPq). The text is divided into the following sections: **Children's cultures in the digital universe**, presents aspects of how children interpret and engender forms of production of cultural elements with the technological devices existing in their family context; **Interlocutory children and the paths taken in the research**, in this section we bring the methodological path of the investigation, as well as the devices used in the production of data with the children; in **The curriculum acts of connected childhoods**, we capture the concept of curriculum acts from the studies of Macedo (2011) and understand children as social actors from the perspective of Coulon (2017); in the last section, **Authors of childhood learning strategies with digital technologies**, we highlight as research results that children immersed in the digital network can increase their skills in playing with digital technologies. Finally, we weave the **final considerations** of the article, bringing the types of learning strategies in children's practices with digital technologies.

Children's cultures in the digital universe

Thinking about childhood as a social category and the child as a social actor, based on childhood studies, inevitably leads to the understanding that children constitute their own cultures based on the symbolic world that is conferred on them. Therefore, recognizing children as producers of their cultures requires understanding that their socialization process presupposes reframing strategies and cultural appropriation shared by the entire society or part of it (BROUGÈRE, 2010).

This is because every day children are confronted with complex cultural elements through diverse and varied representations, in particular, adult culture. A set of repertoires

³ ECult is registered in the CNPq Research Directory and its researchers have projects and publications available on the website: <https://ecult.pro.br/> e Instagram: @ecultufs.

available as references to children and, by having contact with this reference, they interpret and engender forms of production of cultural elements. So, currently, trying to understand how digital cultures cross children's cultures and other recreational activities is not easy.

Thus, nowadays, we need to understand that contemporary childhoods constitute new narratives in social processes and cultural production (CASTRO, 2002). Therefore, when acting in digital cultures with electronic devices from the perspective of Lucena and Oliveira (2014), we understand that children are agents of authorship that give new meaning to the very concept of childhood in the digital age. In this universe, they are active subjects in the contemporary sociocultural process. Their ways of creating their own cultures, knowledge and experiences today inevitably require rethinking the processes built around practical nuances.

This rethinking implies moving on shaky, imprecise and uncertain terrain, as changes are constant (PEREIRA, 2013). These socio-technical experiences permeate the daily lives of social actors, including children. For this reason, childhoods are in continual transformation, also bearing in mind that the technological apparatus itself is in continual change, consequently enabling new interactions and diverse performances; however, this brings into question the fluidity of sociabilities and the challenges of thinking about childhood today, in which technologies make it possible to learn in mobility and ubiquity in different spaces (LUCENA; SCHLEMMER; ARRUDA, 2018).

The speed of events provided by sociotechnical agencies redefines sociocultural processes in a moving and not static way. This redefinition, according to Couto (2013), generates insecurity, destabilization of what was previously known. Therefore, as children are and are progressively active part of the networks, these mutations generate uncertainties, a feeling of insecurity on the part of adults and various professionals in the field of childhood and educators. On the one hand, there is this fear about something still unknown and how childhoods inhabit the virtual, a point of fluid and sliding space (COUTO, 2013); on the other hand, they reinterpret this space and transpose it, in a particular way, to their games, forms of communication and interaction.

Surrounded by electronic devices since the first years of life, the little ones open up the digital universe. Touching screens to choose your favorite game or trying to download, transmitting from the mobile device to the digital television that chosen cartoon just to see on a larger screen, go to the video game to play a game with more available levels and make new friends in the chat while playing, make calls. None of this is strange for the generation of children born in these technical environments that are advancing more and more each day.

When transitioning into the digital world with a click, video game controller or touch the screen, they have access to an avalanche of information. And, by making virtual space so familiar, they present different ways of relating to devices. Boys and girls protagonists of childhoods who, with their efforts, rewrite the digital cultures of the adult world and mobilize changes in the ways of be and being in children's performances.

Growing up in the digital age is synonymous with having access to a myriad of repertoires through internet connections. Which explains the fascination of children when accessing the world of knowledge and non-fixed places with their tablets, smartphones, iPads etc. To do so, they configure authorship by weaving digital experiences and enhance imaginative abilities, as they are acquiring new habits and skills in contact with technologies and inhabit recreational places in virtual networks. These playful experiences with devices can be considered supports they have to enrich the multiplicity of meanings in their interactions with peers and adults.

In their experiences, when exploring the possibilities of participation and acting in the contemporary scenario, in general, they act according to the meaning that makes sense to them, adapting elements, acting and producing meanings in cultural processes. Given these interactions, in particular, children also enhance their ways of learning, thinking and processing information, unlike previous generations (PRENSKY, 2001). With that, they announce how actions in digital cultures can stimulate investigation strategies, enriching even the formal and informal learning processes with the accessed repertoires (FANTIN, 2016; COUTO, 2013).

Thus, childhoods star in digital spaces. In them, they exchange information, access and modify it. In this approach, contact with the various repertoires present in virtual environments provides learning strategies, announced in playful practices. When accessing videos, games and other content, they recognize colors, differentiate numbers and letters, interpret narratives, that is, they strive to achieve better performance with digital devices.

Interlocutory children and the paths taken in the research

This investigation took place in the family space of two children aged between three and five years old⁴, connected to networks with digital mobile devices with the help of their

⁴ Following the ethical precepts of research with children, we asked the interlocutors of this research to choose their favorite characters as an alternative for not identifying their real names in the text. So, they chose Princess Elena (three years old) and the character Franny (five years old). Thus, we chose not to identify the children, but

parents. For this approach, we use ethnographic research techniques with the intention of recording how children's cultures are being crossed by digital technologies and enable learning strategies. Corsaro (2011) highlights ethnography as an effective method to study children closely, in addition to supporting them as protagonists and partners in the research process.

However, we emphasize that adopting the techniques of ethnography does not constitute this investigation as ethnographic⁵, that is, we only adopt ethnographic techniques and guidelines. Sarmento (2011) emphasizes that ethnography proposes to apprehend a certain social reality, in particular, the record of singularities conducted in the cultural manifestations of everyday life in childhood interactions with peers and adults.

The devices adopted inspired by ethnography were: the **field diary** and **participant observation** lasting four months in the private family space. Through observation, it was possible to build friendship and bonds of trust with the participating children, a relationship of complicity, partnership and friendship. For Macedo (2010), this device allows a comprehensive look from the researcher and also from the research actors, that is, everyone involved in the investigation, because as the ties are strengthened, the research begins to be woven in these meetings.

For the records of the events that took place in our meetings, we used the field diary. This device allowed for minimally detailing all the significant aspects that occurred in the meetings. In this way, we understand that children, especially small ones, have unique ways of communicating about their cultures, which is why attentive listening in the field was essential for the richness of the records. In it, we try to register not only the words spoken, but also the gestures, actions, expressions and languages constructed in the moments of play with the interfaces.

The construction of the grave diary goes beyond a mere report, it demands sensitive listening, friendly relationships and care and zeal with the description, which must be meticulous about the existentialities of the research participants (MACEDO, 2010). Thus, adopting the techniques of ethnography allowed us to adopt descriptive power over the construction of children's cultures crossed by the digital network. Field notes allowed a

we considered listening to their voices in order to choose something symbolic, striking in their lives and representing them.

⁵ Marchi (2018) calls attention to the necessary precautions before classifying a research as ethnographic. Among them are conceptual mastery, field time and levels of participation. Thus, an ethnographic research requires an extensive and exhaustive study in the field, requiring a long-term dive. Thinking about this care, we highlight the impossibility of classifying this research as ethnography, but that we adopted its techniques for the construction of data with the interlocutory children.

detailed and microscopic record to reach the children's experiences in their playful games and detail the events from their contexts.

The curriculum acts of connected childhoods

In order to understand the learning strategies built in the contact of the children who interact with digital technologies, it was necessary, first, to think about how these strategies are constituted as curricula authorships that are still absent in the school space. The concept of curriculum acts forged by Macedo (2011) and is based on the idea that all social actors are curricularators. For this author, the concept cannot be confused with the established curriculum, as it constitutes a critique of the learning performances of social actors excluded from formal education spaces.

The concept proposes us to reflect on the classified and chosen formative knowledge in the formal curriculum and, above all, to think about how sociocultural scenarios have unique learning practices excluded from pedagogical practices (LUCENA, NUNES and OLIVEIRA, 2021). In this sense, it is possible to think about what type of authorships are disregarded, as this exclusion highlights “[...] the colonizing notion that curricula would be pedagogical artifacts made only by specialists and educational authorities” (MACEDO, 2013, p. 428, our translation).

For Coulon (2017), social actors constantly build significant actions in daily life experiences with particular ways of attributing meaning to events and how they build their worlds. Therefore, social actors' dialogues engender curriculum actions and educational experiences. Therefore, Sá (2015) emphasizes that cultural scenarios are structuring of educational experiences, as children and/or adults experience in them incessant processes of creation, invention, imagination, therefore, they also carry out forms of learning based on cultural guidelines. In view of this, Macedo (2013), when forging the concept of curriculum acts, announces that learning takes place in and through culture and, consequently, the references of cultural institutors have meanings and senses that enrich the interlocutions of the curriculum authors.

These abilities to build curriculum actions consider learning as a cultural experience (SÁ, 2015). Based on this, we understand children's cultures as scenarios of curricula authorships and which enable contact with educational repertoires, highlighted in times of digital technologies. In this way, the virtual space explored by childhoods are also scenarios of curricula references. In it, they create performances, access repertoires, invent other games

and through these references they choose their own repertoires, whether toys, school supplies, etc.

Such a view highlights how children are being authors of themselves, of their learning experiences. This inference is anchored in what Macedo (2013b, p. 93-94) calls “authorizing oneself”, which also implies the construction of authorship, that is, while children are authorized to act in a unique way with digital technologies, they also build performances and promote alteration of the constituted landscapes. These curriculum actions of children with digital technologies enrich the construction of authorship of learning strategies in contact with the symbolic universe of the virtual.

Authors of childhood learning strategies with digital technologies

The approach to children in the private family space showed how they manipulate the signs and the semiotic universe of the networked digital. These learning strategies happened all the time when the interlocutors made an effort to understand the semantic network present in the virtual repertoires. For Macedo (2015), taking care of the children's references is an essential posture to understand curriculum actions. And, with that, learning in/through children's cultures occurs as a practice of meaning, sociocultural actions that generate creative processes and enrichment of knowledge.

Inspired by Sá (2015), we understand learners' attitudes as strategies of social subjects to interpret and produce everyday practices. That is, the ways in which children operate the logic of human actions and, through their interpretations, intervene in the realities in which they are inserted. “The understanding of human learning, as a complex phenomenon of the human condition, cannot be reduced to half a dozen unique theoretical formulas” (SÁ, 2015, p. 70, our translation). With this, we recognize that cultural practices allow learning attitudes in everyday life, in which children activate devices that organize, carry, transgress, complement, alter or erase curricular issues (MACEDO, 2015).

In this sense, as it is not the object of this research to talk about the established school curriculum, but how children carry out daily learning curriculum actions, here they show how the virtual space is another space that intends to learn diverse through the production of children cultures. Therefore, when interacting with networked digital elements, they interpret icons, explore new scenarios and anchor lived experiences. The knowledge built through curriculum acts playing with digital technologies have varying degrees to transform the capacity for imagination and thought.

For Becker (2017), playing in the digital transcends the play episode, as there is contact with the manipulation of codes and the complex interpretation process. In view of this, we noticed that in our meetings, in games with digital technologies, the research interlocutors, in addition to creating curriculum scenarios, through the structures of complex narratives and imaginative skills, also expanded other skills for the constitution of knowledge, surpassing the already existing given, establishing new relationships.

Immersed in the games and videos accessed, Franny and Princess Elena constitute this space as a place for learning, consequently, enhancing their cognitive, social and affective skills. As a playful activity, virtual actions arouse interest and desire to explore the chosen environment. In it, children observe scenarios, establish associations with repertoires, make choices and develop autonomy. They “pilot” digital technology and find images, graphics, figures, letters, words, sounds, texts and videos, making a complex immersion (ALVES; RIOS; CALBO, 2014; SANTAELLA, 2004; 2014).

Initially, it was necessary to take a “probing” route, or better, to explore how Franny and Princess Elena move in the virtual space, operate codes, rules and interpret logics of digital environments. Their tactics, when faced with a game, for example, consist of going “poking around” (ALVES, 2015, p. 05). This exploration occurs through countless attempts to understand the objective of the game, its functionalities, when to click or touch, decipher the rules and the way to operate in each interface.

As a result, the interlocutors often taught us how to play or search for a video on different platforms, whether on the tablet, smartphone or video game console. This demonstration takes place when Princess Elena teaches me how to touch the image and effect the sound of the respective objects in the Piano Kids – Music & Songs⁶ app. In her speech, she tries to instruct me on where to touch the screen and at what moment, she also says that she can teach me because “she learned trying”. In this process, the interlocutor establishes a relationship not only to understand the functionalities of the interface, but also of the application itself. It discovers its intuitive logic, interprets proposed tasks and challenges, that is, the survey involves complex operations in the interaction (ALVES, 2015).

This suggests that children immersing themselves in the digital network can increase their play skills with digital technologies. Becker (2017) alludes that these abilities are enriched when they try to learn something always to improve performance. Given the effort of always being able to learn something to have a better experience to immerse yourself in the

⁶ Available: <https://piano-kids-music-and-songs.br.uptodown.com/android>. Access: 13 Apr. 2021.

applications, the effort ranges from distinguishing letters, recognizing images, sounds and shapes in the accessed applications, to interpreting the narrative, such as the game *Transformers Rescue Bots*⁷, played by both, in which the interlocutors learn about what volcanoes, earthquakes, avalanches and fires are. First, they pay attention to the instructions on how to avoid a fire and behave in an environmental accident or disaster. After that, they try to carry out the mission, which is to rescue civilians who are in danger in the type of disaster that happens in each phase.

For Velázquez (2014, p. 102), in accessing games, it is possible to develop learning that involves different aspects, such as: creativity, association, memorization, critical capacity, questioning, choices, other languages, concentration, hierarchical understanding of tasks, among others. Based on this, in the immersion of games, we observed that Franny and Princess Elena built memorization schemes, forms of perception and inferences. And, all of this, with the objective of exploring better and surpassing the level of games.

In the game “Pocoyo and the Mystery of Hidden Objects”⁸, Princess Elena memorizes the artifacts that appear in the game's instruction list, after that, identifies them in the scene. In this simulation, detective Pocoyo is in an investigative setting and must look for the missing objects. First, he looks at the list of objects given by the game, then he starts looking for each one of them.

The cognitive challenges presented in the game mobilize people to make choices, manage available resources and exceed levels (ALVES, 2012). It is important to remember that the proposed tasks require a solution and attention from Princess Elena, however, despite the criteria required for immersion, the game does not leave its playful character in play.

Thus, to understand the efforts from the imaginary connections and situations, mentioned above, it was necessary to understand the tactics used to download, find a video, interpret narratives, immerse in the ambience and go beyond stages. In the virtual space, we realize that the interlocutors mobilize knowledge, make an effort to interpret statements, enhance narrative knowledge, enrich visual perception and change ways of acting in the virtual as a playful learning territory. For Santaella (2004), cyberspace involves perceptual-cognitive transformations, as in the immersion routes, interactants navigate in a space rich in images, maps, signals, lights, texts, videos and sounds, tuned to complex perceptual processes.

⁷ Available: https://bitly.com/Jfqmw_. Access: 13 Apr. 2021.

⁸ Available: <https://bitly.com/JHAZz>. Access: 13 Apr. 2021.

In the complex perceptual processes in learning strategies with children is the early contact with foreign languages. Both through videos on platforms and through games. In different situations, the choice of videos also included other languages, such as: German, Spanish and English. In games, on the other hand, they often chose to change the available foreign language or else chose with the narrative entirely of foreign origin; this was due to the large amount of explored games.

In the Fast Racing League Game scene, Franny felt no difficulty with the options entirely in English, from the instructions, the choice of the car, the race track, as in the dialogues present in the game's narrative, all were in the English language. With this, it associates the actions of the characters in the game to understand words spoken in English in the race match; besides that, other character dialogues to interpret the meanings.

According to Souza (2019), signs, symbols and icons are expanding children's ways of reading, their strategies consist of understanding narrative images with multiple representations. In contact with digital technologies, this interaction is not restricted to deciphering codes, but, when acting as interactors, the little ones effect dynamics that allow relating, associating and comparing the accessed information. Such considerations allow us to infer that this immersion and contact with a myriad of signs, with textual, sound and visual effects in games and videos, are anticipating forms of reading.

Faced with this, Lévy (1988) alludes that the symbols with which we are in contact enable forms of memorization and motivate autonomous reactions. These reactions establish, consequently, conceptual relationships, in which children introduced to certain experiences, from a very early age, have the capacity for visual analysis. With this domain, they name objects, establish mental routes, perceive shapes and analyze movements. These performances enrich everyday cultural production and skills acquired in the virtual space are also transferred to other spaces.

In the scene with the Piano Kids – Music Songs app, Princess Elena associates the colors she visualizes and tries to classify them in the English language. This occurred at various times in our meetings. When asking her about where she learned, she mentions the different spaces to which they have access, from the virtual space to the school. This perception highlights how curriculum acts playing with technologies cross borders.

In interactions with different interfaces with possibilities to enrich playful activities, there are significant macro-units, in which in the relationship with the game or video, children articulate and form types of anchorages through mental representations of the knowledge they

have already acquired. These schemes evoke ways of relating and structuring decisions and accompany experiences that promote cognitive and affective learning.

In contact with digital technologies, both made relationships with school content and experiences in the digital network. In other words, the interactions in the virtual recall the contents explored at school. As a kind of anchor, both relate a preexisting structure to integrate the new processes. Thus, from trying to type the name to understanding the various information accessed: images, letters, shapes, sounds and colors, linked to what they saw in the educational institution.

The immersion of children in the universe of digital culture has enabled them to interact with different information. Hours in front of the screens challenge the ways of playing and learning; they also stimulate ways to develop cognitive skills with digital interfaces. For Alves and Hetkowski (2012), the contents in the combination of texts, sounds and images enhance and resize the language and representations of everyday spaces. This happens because “[...] games explore the notion of spatiality and laterality, simulations lived in homes, in formal public spaces, urban or even historical spaces” (ALVES, HETKOWSKI, 2012, p. 72, our translation).

Thus, as Franny notes, in the game Monopoly⁹, when selecting the option “play with two people”, it is necessary to type the name of each one of the players. So, she types in her name and asks me to spell the letters from mine. In this approach to the alphabet, she speaks familiar letters and tries to type. In the same game, at another time, she tries to join the syllables of some visualized words. It is worth noting that although the icons are often obvious, the environments accessed by them require the prior appropriation of codes, both to find games and videos and to explore them and advance levels. Therefore, despite the fact that both indicate not having the domain of reading and writing, it is possible to anticipate that they make an effort to interpret not only letters or words, but also images, sounds, among others.

The effort to differentiate the information present in games, videos and to make approximations with school contents were repeated at various times. For Singer and Singer (2007), in contact with virtual repertoires, children can repeat syllables, words, count, distinguish colors, among other aspects in a very natural way. Thus, digital play involves constitutive processes for the acquisition of knowledge and strategies of learning postures by the little ones, confirming that playing involves countless learning.

⁹ Available: <https://bitly.com/s6U7X>. Access: 13 Apr. 2021.

According to Vélazquez (2014), these explored playful scenarios can be constituted through the meanings attributed by the children, based on their experiences and contexts. In this sense, Franny, when trying to select the shadows of different sizes – large, medium, small – associates the size to the people which she sees as “larger” or “smaller”. That is, it classifies that the formats of the smaller figures resemble the size of a "baby", whereas the larger formats are "daddy" and "mommy". This access to the proposed images and challenges stimulates creativity, transforms the capacity for fantasy, imagination and thought.

In another scene, Princess Elena also tries to differentiate between large and small shapes, but with her own designs. In this part of the game¹⁰ there is an option in which the child can select desired colors with the “pencils”, add pictures, capture screen etc. So, I notice that she starts drawing shapes seen previously in other options in the same game.

This interaction through on-screen symbols and the way in which children move in virtual environments highlights how they recognize colors, shapes, numbers etc., in the virtual space. In this way, with games and videos it is possible to assimilate the concept of size (large/small), recognize objects, articulate associations and create unique learning performances. This happens because when arousing curiosity about the interface accessed, the scenario assumes exploration. Because of this, apprehending the accessed codes provides an incentive and effort to read and understand information.

Another factor that cannot be overlooked is the physical benefits of playing with digital technologies. Their strategies also permeated using the “sounds”, whether from a game application or a video platform to dance or simulate the movements of favorite characters. In various situations they invited us to dance with them or repeat superhero moves. Therefore, as Franny notes, she puts a children's song on YouTube Kids and starts dancing and teaches me the moves of the song. At other times, in meetings with Princess Elena, when accessing the applications that allow us to simulate the sound of the instruments, she also asked us to dance with her.

Singer and Singer (2007) allude that listening to sounds enriches movement and hearing. In this shift, the senses are heightened as the child touches the icons, listens to the contents, whether only by audio or even by video. Thus, the authors allude that motor skills – gross and fine – are sharpened and improved, according to the forms of play at the interfaces.

Therefore, contact with digital technologies provides enrichment of knowledge and production of children's cultures. This familiarity of exploring virtual repertoires in play

¹⁰ Nesse jogo, existe a opção de mais 27 jogos, ou seja, apesar do nome, oferece outras opções além de “tocar” os instrumentos musicais.

engenders important curriculum acts for educational settings. Thus, the children's daily practices turn the pedagogical impositions of the school space upside down and show us how childhood ethnomethods, especially with digital technologies, provide knowledge and enrich the meanings of performances in networks. In this scene, it was Franny and Princess Elena who showed us how rich the performances in the instituting of digital cultures are, transgressing legitimate learning and showing how much we have to learn from them to understand the experiences of curriculum acts.

Final considerations

Given the results found, it was possible to understand the types of learning strategies in the practices of the interlocutors with digital technologies. In digital dynamics, the effort to interpret the amount of information: colors, images, pictures, letters, words and sounds, takes children's continuous attention for interpretation and the production of learning. In other words, games in children's cultures with digital technologies intend different learning postures, because when interacting in the virtual, the activities explored promote the encounter of icons, presuppose exploring scenarios and anchoring experiences.

In the performances of the learners' postures are the effort of recognizing letters, syllables, numbers, shapes, colors, meanings of foreign words etc. Access to video and game repertoires demand forms of memorization, critical ability to understand narratives, choices in interactive routes, concentration and understanding. These efforts range from downloading a game or finding a video to interpreting narratives and overcoming phases.

In the complex perceptual processes, structured by the interlocutors of this research, it was possible to see how digital technologies expand and anticipate the forms of reading and promote the recognition of symbols and icons in young children. In this way, they develop conceptual notions and autonomous reactions, as they establish, from an early age, visual, sound and movement analysis. These performances enrich the cultural production of childhoods established in recognition, interpretation and memorization.

Therefore, the autonomous reactions of these performances promoted the interlocutors to associate the networked digital repertoires with school contents. This occurred numerous times when having contact with alphabet, syllables, numbers, colors, among others. With this, it is possible to infer that children articulate anchors between what they already know with signs and symbols present in the virtual, as a kind of mental schemes that relate to and evoke lived experiences, triggering affective and cognitive learning. Therefore, the acts of curricula

playing with the constructed technologies show how these anchorages cross borders, in particular, learning arising from the school.

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