THE MATHEMATICAL LITERACY AND NUMERACY PRACTICES IN THE QUILOMBOLA COMMUNITY OF SÃO FÉLIX: THE CRITICAL PEDAGOGY AND THE CURRICULUM IN ACTION

A ALFABETIZAÇÃO MATEMÁTICA E AS PRÁTICAS DE NUMERAMENTO NA COMUNIDADE QUILOMBOLA DE SÃO FÉLIX: A PEDAGOGIA CRÍTICA E O CURRÍCULO EM AÇÃO

ALFABETIZACIÓN MATEMÁTICA Y PRÁCTICAS DE NUMERACIÓN EN LA COMUNIDAD QUILOMBOLA DE SÃO FÉLIX: PEDAGOGÍA CRÍTICA Y CURRÍCULO EN ACCIÓN

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ABSTRACT: Are the Mathematical know-how disseminated by the inhabitants of the quilombola communities included in the pedagogical practices, contemplated daily in the classroom? How do curricular guidelines, which guide school content in Basic Education, contemplate these knowledges? These issues, among others, make up a survey carried out from 2016 to 2018 in a quilombola community of Minas Gerais, presenting, as main objective, the application numeracy practices for students in the literacy process. In the light of Paulo Freire and Ubiratan D'Ambrosio, the research enters discussions marked by educational policies and guarantee of rights that guarantee, to the researched students, an inclusion of diversity in school practices, as well as a quality education that is primarily for the maintenance and dissemination of local history and culture. Using a qualitative methodological method, the research uses the Freirean culture circle as a space for dialogical experience, in addition to seeking reinforcement in ethnographic instruments, guaranteeing the reliability of the information and data collected. The necessary results for the need for resistance pedagogical practices, with a view to the conceptual revolution and praxis that, in fact, consider a subject relationship and object of learning.

KEYWORDS: Mathematical literacy. Curriculum. Numeracy. Quilombola education. Critical pedagogy.

RESUMO: *Os saberes-fazeres matemáticos difundidos pelos moradores de comunidades quilombolas são contemplados nas práticas didático-pedagógicas, cotidianamente executadas em sala de aula? Como as diretrizes curriculares, que orientam os conteúdos escolares na Educação Básica, contemplam esses saberes? Essas questões, dentre outras, compõem uma pesquisa realizada de 2016 a 2018 em uma comunidade quilombola em Minas Gerais,*

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apresentando, como objetivo principal, as práticas de Numeramento propostas aos estudantes em processo de alfabetização. Sob a luz de Paulo Freire e Ubiratan D'Ambrosio, a pesquisa adentra discussões marcadas pelas políticas públicas educacionais e a garantia de direitos que assegurem, aos estudantes pesquisados, a inclusão da diversidade nas práticas escolares, bem como uma educação de qualidade que prime pela manutenção e difusão da história e cultura local. Utilizando um aporte metodológico de caráter qualitativo, a pesquisa utiliza o círculo de cultura freireano como espaço de vivência dialógica, além de buscar reforço em instrumentos etnográficos, assegurando a fidedignidade das informações e dados coletados. Os resultados indicam a necessidade de práticas pedagógicas de resistência, com vista à revolução conceitual e práxis que, de fato, considerem a relação sujeito e objeto da aprendizagem.

***PALAVRAS-CHAVE**: Alfabetização matemática. Currículo. Numeramento. Educação quilombola. Pedagogia crítica.*

***RESUMEN**: ¿Los conocimientos matemáticos difundidos por los habitantes de las comunidades quilombolas están incluidos en las prácticas didáctico-pedagógicas, que se realizan diariamente en el aula? ¿Cómo las pautas curriculares, que guían el contenido escolar en Educación Básica, contemplan este conocimiento? Estas preguntas, entre otras, componen una investigación realizada entre 2016 y 2018 en una comunidad de quilombolas en Minas Gerais, que presenta, como objetivo principal, las prácticas de numeración propuestas a los estudiantes en el proceso de alfabetización. A la luz de Paulo Freire y Ubiratan D'Ambrosio, la investigación entra en discusiones marcadas por políticas públicas educativas y la garantía de los derechos que aseguran, a los estudiantes encuestados, la inclusión de la diversidad en las prácticas escolares, así como una educación de calidad que sobresalga en mantenimiento y difusión de la historia y cultura local. Mediante un enfoque metodológico cualitativo, la investigación utiliza el círculo de la cultura freireana como un espacio para la experiencia dialógica, además de buscar el refuerzo en los instrumentos etnográficos, asegurando la fiabilidad de la información y los datos recopilados. Los resultados indican la necesidad de prácticas pedagógicas de resistencia, en vista de la revolución conceptual y la praxis que, de hecho, consideran la relación sujeto y objeto de aprendizaje.*

***PALABRAS CLAVE**: Alfabetización matemática. Plan de estudios. Numeración. Educación quilombola. Pedagogía crítica*

Introduction

When we speak of Mathematics as a school subject, we are referred to an area of knowledge present in schooled education since Early Childhood Education, with practices aimed at operating with numbers and symbols that, although alive in day-to-day social practices, are remembered more by difficulties and complexities of its contents taught at school than in everyday actions in which mathematical knowledge becomes essential.

Based on this consideration, it is worth remembering that Mathematics is formed by signs, symbols and specific meanings that form a specific language that needs to be taught in

the process of school education as a second language. Because of this character that introduces mathematical knowledge in the form of curricular content in the lives of children, who certainly already use mathematical concepts from an early age, teaching this area of knowledge requires attention and care like all other areas. However, as the indices, such as IDEB, which measure the proficiency of Brazilian Basic Education students in Mathematics, are always in evidence, it is urgent that the teaching-learning process, as well as its quality indicators, be reviewed and redirected to those who will use their content in everyday practices, and not just in school practices: the students.

The reflections and considerations presented in this article are part of a research for the doctorate in education, whose objective was to know the daily mathematical practices of the quilombola community of São Félix and how they dialogued with the mathematical curricular contents at school. Among these practices, the pedagogical activities focused on Numeracy were included in the literacy stage of students served in two multigrade classes at the school located in the quilombola community.

The research used, for data collection, resources of the ethnographic methodology and, being its qualitative character, it tried to present the mathematical practices developed in the quilombola community through participant observation, interviews, culture circles and pedagogical workshops.

Quilombola Education, despite specific curricular laws and guidelines, is still a challenge in terms of quality, especially when factors such as access to school, teacher qualification, financial resources and adequate physical space are aggravated due to public policies that are not implemented in guaranteeing the rights ensured by the legal provision governed by the Federal Constitution (1998), Statute of the Child and Adolescent (1990), Law of Guidelines and Bases of National Education (1996), among others that include quilombola communities.

It is emphasized, as one of the reflections in this work, the role of pedagogical teachers with the teaching of Mathematics in the early years of Elementary Education and, in dialogue with other research, the functionality of the formation and the effectiveness of the pedagogue teacher in the attendance to contents of specific areas.

There is research indicating that, although there is a need to review the education of the pedagogue with regard to Mathematics, the course takes its professionals to understand the subject of learning, how they learn, in addition to critically analyzing the teaching of techniques mathematics disconnected from the daily actions of subjects participating in a graphocentric society.

Like this observation, the research carried out by Mocrosky, Orlovski and Lidio (2019), demonstrates that the Mathematics present in Pedagogy courses comes, in addition to pointing out the need for modifications in the course itself, in order to question the formative path for which was planned, also requiring "that mathematics be present as human production, without neglecting its theoretical and technical aspects" (2019, p. 233, our translation), leading pedagogues to the possibilities of "developing ways of understanding and taking for themselves aspects of technical and scientific mathematical knowledge in an articulating, formative perspective" (Idem, our translation).

The possibilities discussed by the authors go from formation to planned pedagogical actions in order to consolidate curricular content that, endowed with pedagogical intent, would form autonomous subjects and capable of organizing their personal, professional and academic life.

However, with the advent of Mathematics Education, a field of studies and research focused on the teaching and learning of Mathematics, the foundations of education present in Pedagogy formation gain evidence and, along with the Psychology of learning development, it has mathematical techniques as one of the learning objects that will be present in the relationship with the learning subject.

Thus, mathematical skills necessary for the various stages of life in their profusion of tasks, such as Mathematical Literacy, emerge with basic concepts and contents for the continuity of academic life, being also prerequisites for several other activities in areas of diversified knowledge, composing the teaching repertoire of the teaching teacher.

Mathematical Literacy and Numeracy

The process of Mathematical Literacy takes place since Early Childhood Education, when mathematical concepts are worked with children, involved in playful activities that, in the childhood universe, gain a connotation of playing, filled with multiple learnings.

Children, when they arrive at school for their first experiences in formal education, already carry mathematical knowledge experienced in their daily activities that, from games and plays to family teaching attempts, make up this baggage, although full of informality and without mathematical techniques.

Monique Deheinzelin (1998) confirms this statement by saying that:

> [...] children already do mathematics, independently of adults; count pebbles, shells, or candy; they count how many marbles they have or how many points

> they made in the game and, taken to the situation of traders - due to the unfair poverty in which most of the child population in the country is, they make complicated calculations of costs and changes (DEHEINZELIN, 1998, p. 89, our translation).

Contemplating this statement in the light of the childhood activities of modern urban society, when most of the children's time is spent indoors, they learn the mathematics present in digital and online games offered by applications on cell phones, tablets and video games, as well as that which is present in songs, cartoons, videos and children's programs for the purpose of entertaining, but which also bring a range of information that form concepts and build knowledge.

In the early years of elementary school, such as in Portuguese, when students have their first contacts with the curricular content of school mathematics and represent the basis for knowledge that will be built later, pedagogical practices that understand reading learning and the writing of a language that is peculiar to them, as well as the teaching of concepts, signs, symbols and mathematical symbols that represent his fundamental ideas, so that students can express themselves through them, using them properly in their experiences social and cultural.

For mathematical literacy to occur, the subject needs to understand the processes involved in carrying out a certain activity or solving a problem situation. In addition, you must read the mathematical language to understand the meanings that compose it, going beyond deciphering numbers and symbols.

Based on this understanding, the document "*Elementos Conceituais e Metodológicos para Definição dos Direitos de Aprendizagem e Desenvolvimento do Ciclo de Alfabetização (1º, 2º e 3º anos) do Ensino Fundamental*" (Conceptual and Methodological Elements for Defining the Learning and Development Rights of the Literacy Cycle (1st, 2nd and 3rd years) of Elementary Education), considers Mathematical Literacy as a long process, which will enable the student to use the mathematical ideas in solving problem situations that occur in social experiences. Thus, the document defines Mathematical Literacy as:

> Mathematical literacy is the process of organizing the knowledge that the child brings from his/her experiences prior to entering the Literacy Cycle, to lead him/her to build a body of articulated mathematical knowledge that potentiates his/her performance in citizen life (BRASIL, 2012, p. 60, our translation).

In this conception, the domain of mathematical language is present in a learning process that dialogs with social experiences, using instruments and practices that are part of our daily lives and that are full of mathematical knowledge.

In complementing the concept brought by the document mentioned above, Professor Sônia Ocsana Daniluk (2015) states that Mathematical Literacy is linked to actions aimed at learning to read and write mathematical language in the early years of Elementary School:

> I understand mathematical literacy, therefore, as a phenomenon that deals with the understanding, interpretation and communication of the mathematical contents taught at school, taken as initials for the construction of mathematical knowledge. To be literate in mathematics, then, is to understand what is read and written, what is understood about the first notions of logic, arithmetic, and geometry. Thus, writing and reading the first mathematical ideas can be part of the context of literacy (DANILUK, 2015, p. 26, our translation).

At this point, we can recognize how much Mathematics, in its literacy process, would contribute to the understanding of how the world and society organize, classify and process the mathematical information present in our daily lives, doing it based on skills that are developed, taught, having someone - in this case, a teacher - as a mediator of that learning, which takes place between the object and the subject of it.

Then, recognizing in Mathematics this formative character for life, we enter, in due time, with the understanding of Numeracy, that is, just as Literacy is for Portuguese Language Literacy, Numeracy is for Mathematical Literacy, understanding Literacy in its broad sense, that is, the practices, uses and social functions of reading and writing.

By this parameter, Numeracy can be understood as the uses and functions of mathematical concepts, as well as its instruments in the social and cultural experiences in which we are immersed daily, since we live in a graphocentric society, which has writing as a relevant skill for the social participation.

The term Numeracy, brought by Mathematical Education, and also known as Mathematical Literacy, has greater clarity in the explanation presented by Fonseca (2014):

> [...] the ways of knowing, explaining, organizing, arguing, deciding, and appreciating these societies are very strongly based on quantitative, metric or classificatory criteria, which make up what we call mathematical knowledge. In this way, even a novice reader will encounter texts in which prices, measurements, quantities, graphs, or tables appear. They are flyers for promotions in supermarkets or price lists for cafeterias, product labels, medical or childcare records, newspaper articles or on TV, disseminating phenomena and research, and so many other texts that should already appear in the literacy classes. They bring numbers, tables, graphs, diagrams - that a reader also *needs to learn to read*, because it is based on this reading that many decisions are made, such as consuming or using a product, choosing what and where to buy it, changing a health treatment, choose a candidate. The concern to understand the roles of this quantified information or the meaning effects that they give to texts is what makes us understand *Numeracy* as a dimension of *Literacy* (FONSECA, 2014, p. 235, our translation).

The strategies present in the pedagogical process, in this perspective, must take into account the students' previous knowledge, as well as their personal devices to solve the proposed problem situations, since mathematical relationships can be observed in all social spaces, including those divided by children, whether in their leisure, socializing, cultural and educational activities.

The National Common Curricular Base (2017), a normative document, addresses this relationship using the Mathematical Literacy concept, the same used by the Programme for International Student Assessment (PISA):

> Elementary Education must be committed to the development of mathematical literacy, defined as the skills and abilities of reasoning, representing, communicating and arguing mathematically, in order to favor the establishment of conjectures, the formulation and resolution of problems in a variety of contexts, using concepts, procedures, facts and mathematical tools. It is also mathematical literacy that assures students to recognize that mathematical knowledge is fundamental for understanding and acting in the world and to perceive the character of mathematics as a intellectual game, as an aspect that favors the development of logical and critical reasoning, stimulates research and it can be pleasant (enjoyment) (BRASIL, 2017, our translation).

Therefore, Mathematical Literacy in the perspective of Numeracy should propose a pedagogical work aimed at diversified practices of reading and writing, in the school space and outside, that contemplate the mathematical connections and their relationship with geometry (space and form) with the quantities, measures and their instruments, with the resolution of problem situations involving both finances and other relations of the decimal numbering system.

Pedagogical work in this perspective can, as stated by the PCN Mathematics (1997), lead us to the verification of the relevance of Mathematics for the chores of the world of work, of daily life, in addition to being fundamental for the construction of knowledge in other areas of knowledge. Along with these points, it leads us to the "*need to revert a teaching centered on mechanical procedures, devoid of meaning to the student*" (BRASIL, 1997, p. 15, authors' highlights, our translation).

Depending on the affirmations of this curricular parameter, the teaching of Mathematics in the Literacy stage, by focusing on Numeracy practices, would align its models to the provisions of the standardizing document of the current curriculum of Basic Education, the BNCC, which, in the description of the general competences of Education Basic, indicates the appreciation of the diversity of knowledge and cultural experiences (BRASIL, 2017, p. 9).

As a result of the valorization of diversity and cultures, in addition to the students' previous knowledge circulating in the classroom as a formative element, the peculiarities of their culture would be valued and taken as curricular content, enriching their formation and strengthening their identity.

In this way, we would propose the teaching of Mathematics based on the paradigms of the Ethnomathematics Program, which contemplates the objectives of the research reported here, having as subjects the students of the São Félix quilombola school, as this program is concerned with how happens the teaching and the learning of mathematical content, as well as the selection of these, to which cultural group is intended, problematizing real situations, questioning "the here and now" (D'AMBROSIO, 2009, p. 47).

Thus, as the research points out, there is nothing more coherent than the Ethnomathematics paradigms to interweave the teaching of Mathematics in the literacy stage at the São Félix quilombola school.

Quilombola Education and the São Félix community: pedagogical practices and the curriculum

In 2011, the year in which the basic text for the elaboration of the Curricular Guidelines for Quilombola Education was written, much had already been discussed about Quilombola Education, and several claims movements were launched in search of guaranteeing the right to emancipatory education, committed to equity and a commitment to keeping quilombola history and culture alive.

It is worth noting that, for decades, the struggle movements made by black groups or representatives of these groups have ensured, with sweat, blood and mourning, immeasurable achievements. From these movements, other actions are triggered to guarantee the effectiveness of public policies aimed at the black population and quilombola communities. The National Education Conference (CONAE), held in 2010, points out in its final document the need for specific legislation and curricular guidelines for serving students from quilombola communities.

The CONAE document highlights the importance of drafting both legislation and curricular guidelines, with the participation of the quilombola black movement, as this would ensure "the right to preserve their cultural manifestations and the sustainability of their traditional territory" (CONAE, 2010, p. 131, our translation).

Thus, in the construction of the Curricular Guidelines for Quilombola Education, the demands of quilombola movements found resonance in legal documents such as the Federal Constitution (1988), the Statute of Children and Adolescents (1990), LDBEN (1996), coming, in 2012, Resolution number 8 (11/20/2012) which then defines the national curriculum guidelines for Quilombola School Education in Basic Education.

In the quilombo of São Félix, before this titling procedure was initiated by Palmares Cultural Foundation in 2012 and later assumed by the multidisciplinary team of INCRA in partnership with the Special Secretariat of Public Policies for Racial Equality (SEPPIR), several families already occupied the territory located in the city of Cantagalo, in Minas Gerais, in the central-northeast region of the state.

Even before the certification of the lands in the community of São Félix was made official, the Municipal School São Félix Quilombola was founded in November 2007, starting to serve students aged for Elementary School, from the 1st to the 5th year. Prior to the implementation of this school in the community, school-age children attended school in the urban area, about 6 kilometers from their home, which increased the number of dropouts among quilombola students.

Even with the school implanted in the community, according to Josiane, the community representative, the difficulties did not diminish, since the teachers did not act considering the cultural practices and the experiences of the children enrolled in the school. Along with this factor, other limitations appeared, such as the scarcity of material and the distance between the teacher and the community.

With the arrival of Teacher Cleonice, in 2009, the offer of pedagogical work has changed, from her attentive look at the cultural, historical and identity specificities of quilombola students, who, according to article 1 of the National Curriculum Guidelines for Quilombola School Education in Basic Education, school education:

> V - must guarantee students the right to appropriate traditional knowledge and its forms of production in order to contribute to its recognition, appreciation and continuity; VI - must be implemented as a public educational policy and establish an interface with the existing policy for rural and indigenous peoples, recognizing their points of political, historical, social, educational and economic intersection, without losing specificity (BRASIL, 2012, p. 3, our translation).

The research, carried out from 2016 to 2018, had contact with 3 professors who stated that they had not received specific training to work with quilombola students, even though the local education secretary stated the opposite.

In 2016 and 2017, two teachers worked, each serving a multigrade class, with teacher Josi working with Class 1, with students from Early Childhood Education, 1st and 2nd periods and 1st year of Elementary School, while Teacher Cleonice provided assistance to students of the 2nd, 3rd, 4th and 5th years of elementary school in class 2. In 2018, a third teacher arrives at the school with the task of giving reinforcement lessons to students with disabilities, especially in the literacy process and in learning mathematical content, specifically in the thematic unit Numbers, according to the BNCC.

When observing the classes in class 1, it was possible to notice that the mathematical language used is based on traditional models, around the algorithms, counting and the decimal numbering system. Words such as contained, numbers, plus, minus, major, minor, problem, among others, which go back to mathematical knowledge, are present in the vocabulary of the teacher and students when the contents of this area of knowledge are addressed.

In this regard, we agree with Andrade (2009), when stating that the mathematical language:

> [...] it does not involve the writing and reading only of numbers and calculations but also of spaces, shape, measures, quantities, treatment of combinatorial information, probability, and statistics; use of, for example, unconventional measurement units; construction, reading and analysis of graphs and tables; registration and organization of collected information, etc., that is, reading and writing of the world in which the individual is inserted (ANDRADE, 2009, p. 158, our translation).

Although it was not observed, in the moments when I was in class, a broader approach, as the points mentioned in Andrade's statement, regarding Numeracy, it is evident that the teacher recognizes the term, as well as its relevance for the stage of her lecturing. However, it is clear that the students' cultural knowledge does not gain visibility in the classroom, since the teacher excels at complying with the guidance from the local education department, teaching the contents listed in the official curriculum documents.

A practice based on traditional paradigms is perceived, with filling, decontextualized, pre-made activities that do not allow students to relate school content to their experiences outside school. For these practices, Paulo Freire (1993) states that teaching and learning should not be treated mechanically and, so that the pedagogical action is not authoritarian, it is necessary for teachers to know “what is happening in the world of the children with whom they work. The universe of their dreams, the language with which they slyly defend themselves from the aggressiveness of the world. What they know and how they know regardless of the school” (FREIRE, 1993, p. 66, our translation).

One of the followers of Critical Pedagogy, Paulo Freire defends dialogue as an essential action for pedagogical practice and, in dialoguing with Ubiratan D'Ambrosio, precursor of the Ethnomathematics Program, they defend the importance of a connection between school knowledge and the knowledge of life. For them, there is no dichotomy between this knowledge, especially when the knowledge that circulates in society is valued as a way of awakening the student to his social reality, with a view to its transformation.

Understanding, in a critical perspective, the teaching of Mathematics, Paulo Freire and D'Ambrosio connect with other researchers like Skovsmose, and find in dialogue a pedagogical tool, especially when it comes to the classroom space that presupposes research and problematization. For this reason, the dialogue must start from the teacher in the form of an invitation to research and students would have to accept it, so that together, even in different social roles, they can deal with differences (SKOVSMOSE, 2006, p. 129).

This way of conceiving the educational process can be found in the practice of Teacher Cleonice, who works with class 2 of the quilombola community. Aware of the need for differentiated pedagogical practices for students in the quilombola community, the teacher understands the role of not only forming students, but also their families, from the moment they are subject to duties and, as dictated by law, equal in rights, but when it comes to education, the law guarantees a service that takes into account their needs.

She understands the importance of perpetuating local culture and says she understands the need for a teacher from the community to teach at school, teaching classes and systematic curriculum content, but enriched by local culture, valuing their knowledge, ways of doing and participating of community life.

The same happens in São Félix as in the Quilombola community of Cafundó, in a survey carried out by Dias, Rosseti and Romeiro (2018, p. 1574), when older members of the community are responsible for passing on the local culture and history to the new generations, perpetuating the identity of the people. However, with the advent of technologies, these cultural practices have not attracted the attention of the youngest, taking them away from their roots, since "they were born in the wave of accentuated capitalism where technological advances provoke more interest" (DIAS; ROSSETI; ROMEIRO, 2018, p. 1574, our translation).

This is a matter of concern for Teacher Cleonice, who, looking at the reality in which she works, reinforces the importance of the older members of the community, as well as the older residents, certain that they carry with them the cultural heritage of the community and that such should have space at school, as a curricular component, to teach children the

community's way of living and thinking. She dreams of a project in which the actions aimed at the multiplication of local knowledge, through the elderly, are systematized, as she says:

> ***Teacher:*** *You can take your child to fetch firewood when you need it, take to see you blow a coffee, see you sift a coffee, an annatto, why? We have to pass on what we know to the youngest. Ah, I learned this song when I was a kid, oh let's talk to him, have him teach us. Come here and teach us. Because we are going through what we know, we are rescuing, and then I will pass on to you what is LDB, what is LDB? The law of the federal government that orders it to be done in quilombola schools. Quilombola schools are completely different from schools in the city, of course we study science, mathematics, history, geography. But, we have to listen to the elders, the project is coming, the elders cannot come to school, we have to go to the elders, interview the elders. Yes, we must have folk dances, okay, I'll pass later, you know, there are some places, I'll ask people to be able* (Transcription of recording, 2018, our translation).

However, despite all their efforts, cultural hegemony prevails, even over pedagogical practices that rank curricular content, choosing those who should be taught and to whom they should be taught, as D'Ambrósio denounces: "The dignity of the individual is violated for social exclusion, which is often due to not passing through the discriminatory barriers established by the dominant society, including and, mainly, in the school system" (D'AMBROSIO, 2009, p. 9, our translation).

Recognizing the lack of formation to assist quilombola students, Cleonice tries to diversify her practice by seeking aspects of the local culture for the classroom. It does not always succeed in the face of an imposed curriculum, and ends up fulfilling the official, without great cultural significance for students.

With regard to Mathematics, it carries methodologies and didactic strategies guided by the National Pact for Literacy at the Right Age (PNAIC), the last teacher formation offered by the municipality in partnership with the federal government, which guided literacy teachers in adopting actions that foster attention to this area of knowledge, leading students to understand the mathematical content present in their day-to-day chores.

According to Barreto and Shimazaki (2019, p. 159), the PNAIC in Portuguese aimed to assess reading and writing skills, focused on textual genres. In Mathematics, the four thematic axes are focused on problem solving as a teaching methodology for the contents listed by the current curriculum guideline.

Due to this guideline for this formation, there is a corner of mathematics in the classroom, where it is possible to find conventional and unconventional measuring instruments, such as clocks, measuring tape, bottles and boxes; resources for counting and operations

involving the figures, such as the abacus, calculator, caps and popsicle sticks; card games, grains for the game of bingo; Telephone; and other materials that could be useful during classes.

As Paulo Freire and D'Ambrosio point out, the teacher is certain of the importance of fostering local history, culture and knowledge, promoting dialogical classes, encouraging students to ask questions and seek answers among their peers, thus promoting broad debates that, at certain moments, the teacher was obliged to interrupt and resume the didactic objectives for the moment.

Traditional algorithms have a captive space in mathematics classes, since for municipal managers these must be successfully consolidated for students to be successful in external assessments. They are worked on solving problems involving the fundamental operations of the additive field and the multiplicative field, with the traditional conception of problems that are not contextualized or distant from the children's experiences.

Like the teacher in class 1, the mathematical language used in class is geared towards learning the fundamental facts, solving problems and traditional algorithms. That is why the most common words are: it contained, more, less, - sometimes replaced by addition and subtraction -, multiplication and division, considering the assistance to students in the second cycle of Elementary School, 4th and 5th years.

This language is not common among members of the community, as it is possible to hear expressions with mathematical content being used, naturally, in day-to-day situations, aimed at paying bills, various measures ranging from vitamin dosage for laying hens until counting the days, weeks or months for planting or harvesting a crop. In a natural way, this community finds itself involved in mathematical actions, as reported by the researcher during a conversation: the measure of coffee, the time to wake up the children, the care with preparing lunch...

Without knowing it, these mathematical relationships cited by women, mothers and/or guardians of children in the community, were listed by Paulo Freire when interviewing D'Ambrosio:

> *I told the students the other day that when we wake up, already walking to the bathroom, we start to do mathematical calculations. When we look at the clock, for example, we already establish the amount of minutes we have for, if we woke up earlier, if we woke up later, to know exactly when we will arrive at the kitchen, the time that take the breakfast, the time that the car that will take us to the seminar will arrive, to arrive at eight. That is to say, upon awakening the first movements, inside the room, they are mathematical movements. For me, this should be one of the concerns, to show the naturalness of mathematical exercise.*

With this naturality erased by the curricular content in the classroom, the Numeracy practices are timidly perceived, and the term and its applicability are the domain of the teacher, having attended the PNAIC and participated in the construction of methodological proposals that resignified the teaching of Mathematics in the literacy process. Still, there was always something new related to the experiences of students in the community.

The teacher reports that she heard the older people in the community referring to the measurement of land, cereal, and seed crops with unusual terms and that she was not understanding. Then, brilliantly, the teacher becomes a researcher in her area of activity and brings spectacular results about the local culture.

For Freire, researching is an integral part of teaching, since:

> There is no teaching without research and research without teaching. These to-dos are found in each other's bodies. While teaching I keep looking, searching. I teach because I seek, because I inquired, because I inquire and inquire myself. I research to verify, verifying, to intervene, intervening I educate, and I educate myself. I research to find out what I still do not know and communicate or announce the news (FREIRE, 1996, p. 32, our translation).

And as a result of this research she teaches from what children already know, but announces to the world the novelty: the units of measures of capacity and volume still used in the community, called quarter, half-quarter, *neta*, plate and half-plate and used, especially, according to the teacher, for products generated at the water mill, such as cornmeal and hominy, it has its own measuring instruments, wooden boxes made by the residents.

From the information on the units of measurement collected among the older members of the community, the teacher proposed to work with the children with such information and started by asking them if they knew the words that named the units of measurement. As the answer was positive, she started to ask them about people, places and time when these words were used.

Thus, she was informed by the students that their grandparents and some older people in the community made constant use of them, when it came to measuring corn, cornmeal and hominy. After the initial conversation, she presented the boxes made by herself, composing her plan for teaching fractions. According to her, the idea arose from the equivalence of values present in the relationship between the units of measurement.

The dimensions of the boxes, such as those used in the mill, present the measures, according to the teacher's notes: quarter: 32 cm x 31 cm x 20 cm; Half-quarter: 26.5 cm x 27 cm x 14 cm; *neta*: 18 cm x 18.5 cm x 13 cm; Plate: 14 cm x 15 cm x 10 cm; Half-plate: 12 cm

x 13 cm x 7 cm. As for the volume, the quarter holds 19,840 cm^3 = 0.01984 m^3, the Half-quarter 1.0017 cm^3 = 0.010017 m^3, the *neta* 4329 cm^3 = 0.004329 m^3, while the plate has the volume of 2.100 cm^3 = 0.0021 m^3 and the half-plate 1.092 cm^3 = 0.001092 m^3.

The developed project was named 'Old measures' and the material used became part of the classroom's teaching environment. The step before teaching the content of fractions, using the units of measurement of the community, consisted of researching and photographing old objects present in the homes of the residents of the community, a step that demanded the participation of students.

The photographs made up a large poster that gained prominence in the classroom, being a source of pride for the students who, valued for helping in the production of their own knowledge, come to understand themselves as participants in the educational process.

When proposing student participation, the teacher uses it in addition to the child's need to feel valued, but brings participation as a methodological resource that, if worked hard, will not only produce educational results, but will also emphasize the need individual and collective participation, as a principle for human formation that is guided by personal and collective transformation and development.

Exactly about these behaviors, knowledge and individuals is the view of Ethnomathematics, when contemplating mathematical knowledge and doing in a contextualized way, seeking to respond to daily demands, as a way of learning to deal with the problems that arise in the daily experiences of people and communities.

As, according to the author, the knowledge and practices of culture are present in everyday life, the individuals who participate in them establish mathematical relationships present in the acts of comparing, classifying, quantifying, measuring, explaining, generalizing and using the tools that are common to their culture, whether they are material or intellectual.

So, even though ethnomathematics is not learned in school institutions, it is learned in homes, in games, among friends and family and even in work activities (D'AMBROSIO, 2009, p. 23).

From the experience of Teacher Cleonice, it is possible to understand that Numeracy practices can intertwine with local history and culture and that school education and the curriculum, designed to meet the specificities of quilombola formation, can be constituted as space for the instrumentalization of these historical and cultural beings in favor of this struggle, still inglorious.

Final considerations

Critical Pedagogy, focusing on the emancipation of the subjects of education, as well as the social transformation starting at school, through the literacy process, and having the critical curriculum as an ally, more than a pedagogical theory, is a paradigm of transformation through schooled education, it understands this as a space of struggle, defense and break with the market logic of maintaining social inequality.

To support this Pedagogy, it is feasible to understand a critical curriculum that, in addition to revealing the reproductive character of the social ills of traditional curriculum theories, will place the curricular content and power relations adjacent to the latter, going through the formation of teachers to the materials and textbooks planned for schooled education.

It is necessary to understand the place of the curriculum as an instrument to guarantee the rights to knowledge, ensuring them to the subjects of the educational action, placing the student at the center of this debate, deconstructing the commercialized, elite, hierarchical and meritocratic views of the school contents, subjects of the educational process and knowledge.

Thus, the curriculum comprises the subjects of education and the diverse practices exercised by these subjects, in addition to the conceptions of the world and education that they carry with them and teach them, even though they are not in front of a classroom.

But what about this curriculum in Quilombola Education? As well as the struggles of black movements, far from ending, there is the quality of schooled education for the black population, especially the quilombolas, considering their historical and cultural peculiarities in the formation of their identity.

More than answers, the research undertaken raises other questions that, such as Ethnomathematics and Critical Pedagogy, have at the center the subject of learning, as well as their knowledge, constituted and built in social, family and work relationships on a daily basis.

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How to reference this article

SANTOS, D. A. T.; ZANARDI, T. A. C. The mathematical literacy and numeracy practices in the quilombola community of São Félix: the critical pedagogy and the curriculum in action. **Revista Ibero-Americana de Estudos em Educação**, Araraquara, v. 15, n. esp. 3, p. 2350-2368, Nov., 2020. E-ISSN: 1982-5587. DOI: https://doi.org/10.21723/riaee.v15iesp3.14442

Submitted: 20/07/2020
Required revisions: 30/08/2020
Approved: 29/09/2020
Published: 30/10/2020