MATHEMATICS, LANGUAGE AND LITERACY: A MATTER OF (IN)FINITUDE

MATEMÁTICA, LINGUAGEM E LETRAMENTO: UMA QUESTÃO DE (IN)FINITUDE

MATEMÁTICA, LENGUAJE Y LETRAMIENTO: UNA CUESTIÓN DE (IN)FINITUD

Bruna Larissa CECCO[1]
e-mail: bruna.cecco@gmail.com

Luci Teresinha Marchiori dos Santos BERNARDI[2]
e-mail: lucisantosbernardi@gmail.com

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[1] Integrated Regional University of Alto Uruguai and Missões (URI), Frederico Westphalen – RS – Brazil. Doctoral student in Education. Farroupilha Federal Institute (IFFar). Math teacher.
[2] Integrated Regional University of Alto Uruguai and Missões (URI), Frederico Westphalen – RS – Brazil. Professor of the stricto sensu Graduate Program in Education.

ABSTRACT: This paper discusses the journey of the literacy concept in reading and writing studies in Brazil, from different author's perspectives. Based in these studies, mathematical literacy and its (in)finitude is discussed, in a transcendental perspective, having as a horizon the inconclusion of the human being, from a Freirean point of view. This is a qualitative study, carried out through a theoretical discussion, in which contributions and different perspectives on the topic were approached. The results show the complexity of intrinsic areas to Math, the levels and the (in)finitude of the mathematical literacy in school and its meaningful processes developed in a critical education perspective. It is considered that, despite the literacy process reaches its end as a time for learning and defining knowledge during the schooling process, literacy can and must be revisited and signified along life as a movement of impermanence of the human life.

KEYWORDS: Mathematical literacy. Transcendence. Infinitude. Critical education.

RESUMO: *Este artigo retoma, com base em diferentes autores, a trajetória do conceito de letramento nos estudos sobre leitura e escrita no Brasil. Ancorados nesses estudos, discutimos o letramento matemático e sua (in)finitude, com vistas à transcendência, tendo como horizonte a inconclusão do ser humano, em uma perspectiva freireana. Trata-se de um estudo de base qualitativa, desenvolvido por meio de um ensaio teórico, no qual procuramos contribuir com as análises e discussões sobre o tema. Os resultados mostram a complexidade das áreas que são intrínsecas à matemática, dos níveis e da (in)finitude do letramento matemático escolar e suas ressignificações, desenvolvidas em uma perspectiva de formação crítica. Considera-se que, apesar da finitude do processo de letramento, enquanto tempo de aprendizagem e de definição de conhecimentos durante o processo de escolarização, este pode e deve ser reconstruído e ressignificado ao longo da vida, como um movimento de impermanência da vida humana.*

PALAVRAS-CHAVE: *Letramento matemático. Transcendência. Infinitude. Formação crítica.*

RESUMEN: *Este artículo retoma, con base en diferentes autores, la trayectoria del concepto de letramiento en los estudios sobre lectura y escritura en Brasil. Anclados en estos estudios, discutimos el letramiento matemático y su (in)finitud, con miras a la trascendencia, teniendo como horizonte la inconclusión del ser humano, en una perspectiva freireana. Se trata de un estudio con base cualitativo, desarrollado a través de un ensayo teórico, en el cual buscamos contribuir a los análisis y discusiones sobre el tema. Los resultados muestran la complejidad de las áreas intrínsecas a la matemática, de los niveles y de la (in)finitud del letramiento matemático escolar y sus resignificaciones, desarrolladas en una perspectiva de formación crítica. Consideramos que, a pesar de la finitud del proceso del letramiento, mientras tiempo de aprendizaje y definición de saberes durante el proceso de escolarización, éste puede y debe ser reconstruido y resignificado a lo largo de la vida, como un movimiento de impermanencia de la vida humana.*

PALABRAS CLAVE: *Letramiento matemático. Trascendencia. Infinitud. Formación crítica.*

Introduction

> *I have no doubt that inside me there is hidden a mathematician who had no chance to wake up, and I'm going to die without having woken up this mathematician, who perhaps could have been good. Well, one thing I think, that if that mathematician that's sleeping in me had woken up, one thing I'm sure of, he'd be a good math teacher. But that didn't happen, it didn't happen, and today I pay very dearly, because in my generation of Brazilian men and women in the Northeast, when we talked about mathematics, it was a business for gods or geniuses* (FREIRE, 1995, interview excerpt, our translation).

How many possible mathematicians are not "awakened"? How many are those who do not have the domain of mathematical knowledge to carry out simple tasks?! What about those who attended all basic schooling and, even so, have difficulties with mathematics and, consequently, have acquired a fear of the subject and also of their teachers?

These are some questions that mobilize us to think and reflect on the teaching of mathematics, on learning, on the training of teachers who act as responsible for this discipline, as well as on the possibilities that mathematics, as a science, can enhance or not in students. Paulo Freire's speech, in an interview granted to Ubiratan D' Ambrosio and Maria do Carmo Domite, in 1995, and present in the epigraph of this article, reverberates a discipline of difficult nature and destined for few, seen as an instrument of power, from of the ideology of certainty (BORBA; SKOVSMOSE, 2013). Unfortunately, a concept still present today. Thus, the excerpt taken from the interview echoes the need to intend and discuss the teaching of mathematics, in general of a transmissive nature, in a decontextualized way that does not favor the development of critical thinking.

D' Ambrosio [3](2001, 2004) asks about Mathematics Education and proposes a *trivium curriculum* (literacy, *matheracy* and technocracy). When interviewing Paulo Freire, D' Ambrosio asks:

> There is, of course, a great deal of concern throughout his speech with the importance of the individual expressing himself, knowing how to read, participating in the world. I ask: from that moment until today, *do you see an equivalent importance in knowing how to participate mathematically in the world. Do you see an equivalent of literacy, a form of matheracy? Is there a mathematical equivalent to literacy in your work?* (FREIRE, 1995, emphasis added, interview excerpt, our translation).

[3] Ubiratan D' Ambrosio (1932-2021) was a Brazilian mathematician educator internationally recognized for approaching mathematics in a more humanized way, understanding and proposing ethnomathematics .

With regard to D' Ambrosio 's question, Freire (1995, our translation) indicates that he thinks that there should be an "effort to recognize ourselves as mathematicized conscious bodies. I have no doubt that our presence in the world, [...] undoubtedly implied the invention of the world". That is, for the author, there is indeed a "mathematical way of being in the world".

It is important to emphasize that Freire, throughout his entire work, proposes literacy that goes beyond encoding and decoding, in a critical process, also known as literacy. For Freire (1989, p. 9, our translation), "the reading of the world precedes the reading of the word, hence the subsequent reading of the latter cannot dispense with the continuity of the reading of the former". For the author, as a political and cultural formation, "literacy becomes a significant construct insofar as it is seen as a set of practices that works to empower, or to *disempower*[4], *people*" (FREIRE; MACEDO, 2021, p. 8, our translation).

In this direction, a movement emerged in search of an "equivalence" to the literacy proposed by Freire for mathematics, mathematical literacy being [5]one of these terms, in addition to other related concepts. In this work, we opted for the nomenclature *mathematical literacy*, as we believe that it manages to portray the different variants of the breadth and complexity of mathematics (which involves arithmetic, algebra, statistics, geometry, measurements, among others), which seems reasonable in view of the possibilities of mathematics. We believe that this concept is inherent to the development of literacy [6].

From this perspective, we question ourselves about the beginning and end of the mathematical literacy process, after all, is it possible to measure when the individual starts to recognize himself as a consciously mathematicalized body? We understand not! Thus, anchored in this premise, our study aims to reflect on the infinity character [7]of mathematical literacy. We defend a mathematical literacy in the critical perspective and, consequently, infinite.

[4] *Empower* and *disempower* are translated as empowering and disempowering . The richness of meanings of the word *empowerment* (giving power to; activating the creative potential; developing the subject's creative potential; dynamizing the subject's potential) mobilizes us to use it. In this way, both literacy and mathematics can cause *empowerment* or *disempowerment* (SKOVSMOSE, 2008).

[5]Mathematical literacy, as it is emphasized in the National Common Curricular Base (BRASIL, 2017), is very present in current discourse. We point out the existence of other terms, such as mathematical literacy, numeracy, numeramentalization, mathematical literacy mathemacy and materacy, also focused on the same concern with teaching mathematics in a contextualized way.

[6]We defend that mathematical literacy is part of literacy, corroborating Fonseca (2014), who points to numeracy as a dimension of literacy. See more at: https://www.ceale.fae.ufmg.br/glossarioceale/verbetes/numeramento . Accessed on: September 28. 2022.

[7]When we choose to use the term infinity, we are referring to the character of great quantity or extension, considering the characteristic of that which has no limits, is infinite. In this case, we bring arguments that confirm this hypothesis.

Our arguments go through understanding the term literacy, its origin and conceptualization in the Brazilian context, so that, in the sequence, we can approach the mathematical language and the relationship between mathematical literacy and infinity, with a view to transcendence, having inconclusion as a horizon of the human being. Our study is qualitative and, through a theoretical essay, we bring a bibliographic interweaving, contributing with the analyzes and discussions on the subject.

Literacy in focus: Understanding a term/concept

> *Literacy is, above all,*
> *a map of the heart of man,*
> *a map of who you are,*
> *and everything you can be.*
> (SOARES, 2019, p. 41, our translation).

Consulting the Online Portuguese [web] and Priberam [web] dictionaries [8], we understand literacy as a term, considering that it is "an expression of an area of knowledge". At the same time, we also understand it as a concept, as this is a "notion, conception or idea about a word", or even, "opinion or idea that one has of someone or something". That is, different concept(s) may be attributed to the same term, including what happens with the terms *numeracy* and *mathematical literacy*.

Regarding the use of different terms in approaching practices that involve the demands of reading, writing and mathematics, Fonseca (2004, p. 27, our translation) already indicated that:

> [...] some are used by more than one author, not necessarily in the same sense. All, however, and denouncing the absence of an already established terminological convergence, but also witnessing the multiplicity of dimensions that involve these phenomena, take the trouble to clarify the adoption of this or that term, in the body of the text or in a footnote.

According to Soares (2019), the term literacy was introduced in Brazil in 1986, in a publication authored by the linguist Mary Kato. Then, in 1988, Leda Verdiani Tfouni defined the differences between literacy and literacy. According to Soares (2019), with this distinction, it came to be understood that the literate subject is the one who can read and write. Literate is

[8] Access respectively at: https://www.dicio.com.br/ and https://dicionario.priberam.org/ . Access on : 15 Oct. 2022.

"one who uses reading and writing socially, practices reading and writing, responds adequately to the social demands of reading and writing" (SOARES, 2019, p. 40, our translation).

In a historical and social context in which being literate was no longer enough, the need for a term that encompassed, in addition to the domain of reading and writing, its social uses were understood.

> The term ***literacy*** was coined from this approach that seeks to understand reading and writing as *complex social practices*, marked by cultural, social, political and ideological dimensions and shaped by the diversity that these dimensions imprint on it (FONSECA, 2004, p. 27, author's emphasis, our translation).

Still regarding the origin of the term literacy, Soares (2019) points out that it comes from a translation of the word *literacy* from English, as the state or condition assumed by those who learn to read or write. According to the author, implicit in this concept is "the idea that writing brings social, cultural, political, economic, cognitive, linguistic consequences, whether for the social group in which it is introduced, or for the individual who learns to use it" (SOARES, 2019, p. 17, our translation).

If just being literate is not enough to guarantee literacy, on the other hand, this can occur without the person being literate. From the point of view of a complex society and with individuals who, being illiterate, manage to experience literate practices, Tfouni (2002) argues that literacy is a socio-historical process and, therefore, indicates the existence of degrees of literacy.

Kleiman (1995) and Rojo (2009) point to the important "differentiation" made by Brian Street for the autonomous and ideological models of literacy. For Street (2003, p. 77, our translation [9]), the autonomous approach deals with literacy in technical terms, regardless of the social context, "the autonomous approach is simply to impose Western conceptions of literacy on other cultures within a country, whether from one class or cultural group over others". The ideological model of literacy, on the contrary, comprises practices associated with cultural and power structures existing in society, making explicit the fact that "all literacy practices are aspects not only of culture, but also of power structures in a society" (KLEIMAN, 1995, p. 38, our translation).

[9]The autonomous approach is simply imposing western conceptions of literacy on to other cultures or within a country those of one class or cultural group onto others (STREET, 2003, p. 77).

Street (2003) points out that research in New Literacy Studies (NLS) represents a new tradition, thinking literacy as a social practice, beyond the acquisition of skills and, also, considering that there is a variation of a context to another, from one culture to another. "This implies the recognition of multiple literacies, varying according to time and space, but also contested in power relations" (STREET, 2003, p. 77, our translation) [10].

Soares (2019) also makes this distinction between literacy degrees, calling them "a strong version" and "a weak version", linked respectively to the ideological and autonomous models proposed by Street. According to Rojo (2009, p. 100, our translation), the strong version of literacy for Magda Soares would be:

> [...] closer to the ideological approach and the Paulo-Freirean vision of literacy, would be revolutionary, critical, insofar as it would collaborate not for the citizen's adaptation to social demands, but for the rescue of self-esteem, for the construction of strong identities, for the potentialization of powers (*empowerment*) of social agents, in their local culture, in the valued culture.

From a critical perspective, we cannot disregard the influence of literacy on the individual's life, since, for Kleiman (1995, p. 11), this "[...] is considered here as a set of social practices, whose specific modes of operation have important implications for the ways in which the subjects involved in these practices build identity and power relations". That is, literacy, developed in the wide and varied social practices that the individual experiences, is crucial for his autonomy, contributing to his empowerment in the face of social and cultural demands. Remembering that the perspective assumed by Soares when he starts his discussions is based on sociocognitivism, further on, as we can understand in the reflection made by the author, there is this other look, for an ethnographic perspective based on Street and Rojo, for example.

An example of the damage caused by non-literacy is provided by Donida and Blanco (2021). The authors present a case study, showing that the reading, writing, arithmetic and speaking difficulties of a university student showed that the supposed diagnosis of dyscalculia attributed to her was wrong. "It was observed that their difficulties are, above all, a reflection of the social inequality that our country faces [...] it is also notorious that the cultural capital passed on by the family was not enough" (DONIDA; BLANCO, 2021, p. 356, our translation). Still, the authors indicate that capital (cultural, economic, social and symbolic) is a direct

[10] This entails the recognition of multiple literacies, varying according to time and space, but also contested in relations of power. (STREET, 2003, p. 77).

influencer of education issues, on "how much is invested in it and how this occurs will vary depending on issues related to capital" (DONIDA; BLANCO, 2021, p. 347, our translation).

The study was based on Pierre Bourdieu's sociology, which presents hierarchies from capitals. In the case of Alice, the student whose trajectory was analyzed in the research by Donida and Blanco (2021), the cultural capital, transmitted and experienced from the family, was not enough for her to follow up at the university, marked by the difficulties of the academic. Thus, the authors state that "[...] **language** as a cultural capital is reaffirmed by Bourdieu (2012) who reiterates that those arising from popular classifications end up failing in educational institutions, since they do not master the required practices in this context" (DONIDA; BLANCO, 2021, p. 351, emphasis added, our translation).

With regard to the empowerment of individuals or social groups, Tfouni (2002, p. 27, emphasis added) points out that the question is not in the fact of being literate or not, but rather, "in being literate or not, society *in which these individuals live*", an intertwined social characteristic that is important and influences everyone. From the author's point of view, "illiteracy does not exist, as a total absence, in modern industrialized societies" (TFOUNI, 2002, p. 24, our translation), and alienation is a product of literacy.

In this sense, literacy and literacy are different processes, but associated with each other and, for scholars in the area, they must occur simultaneously. The fact of being literate, knowing the technique, is an important condition for literacy to occur. Learning the technique (literacy) and learning to use it in social practices (literacy) "constitute two processes, and one does not precede the other. They are simultaneous and interdependent processes" (SOARES, 2003, p. 16, our translation).

In the wake of the construction and production of meanings about the term literacy, Rojo (2009, p. 99, our translation) makes clear the variation of the meaning "through times and cultures and within the same culture", including the recognition of the plural literacies. The author states that the school is a space where "multiple and very different literacies coexist" (ROJO, 2009, p. 106, our translation), pointing out the multiliteracies, the multisemiotic literacies and the critics. In this sequence of production of meanings about the term, the inseparability between context and literacy practices is perceptible, that is, the socio-historical perspective. The variation in meanings and the very reference to the "initial term" come from the multiple requirements of a globalized and increasingly connected world. Thus, if practices aimed at reading and writing have changed and expanded, we ask ourselves about those involving mathematics.

Language, mathematics and infinity

> There are always new things to experience and learn and life can always be enhanced--even at the time of dying! (STREET, 2003, p. 85).

Fonseca (2014) argues that being mathematically literate provides discoveries through the world of mathematics. When calculating, reflecting on the data, solving problems and doing analyses, the individual recognizes himself as a mathematician. Not as a genius, but from the domain of knowledge necessary for choices and decision-making, as a powerful knowledge (YOUNG, 2011) and not as a synonym of the ideology of certainty (BORBA; SKOVSMOSE, 2013).

With regard to literacy, Soares (2019, p. 38, our translation) concludes that "in short: the hypothesis is that learning to read and write and, in addition, making use of reading and writing transform the individual to another state or condition under several aspects: social, cultural, cognitive, linguistic, among others". Equivalently, the affirmative for a mathematical bias can also be valid, from the use itself, which also has the capacity to transform the individual.

Thus, the promotion of mathematical literacy presupposes the condition of using this knowledge, as well as the reading and writing of this language. According to Gómez- Granell (1997), mathematical language can be defined as a symbolic system, with its own symbols that relate according to certain rules that need to be understood by the community that uses it. The mastery of mathematical literacy is essential in reading and interpreting problems, in addition to being fundamental in recording symbols associated with specific concepts in the area.

Fonseca (2009) draws attention to the importance of thinking about the integral formation of the subjects who go through the school, which demands, among other aspects, to ensure what the author conceptualizes as numeracy:

> In the case of numeracy, these demands and contributions refer not only to the field of Mathematics Education, but are also inscribed in the field of Literacy and Literacy, which means that we are obliged to insert ourselves in the concerns that are forged in the intercession between two decisive fields for school education and for the social life of children, young people and adults (FONSECA, 2009, p. 47-48, our translation).

As previously stated, in addition to numeracy, used by Fonseca (2014), there are a multitude of terms that refer to mathematical literacy, such as mathematical literacy (DANYLUK, 2002), numeracy (MENDES, 2007; FONSECA, 2014; TOLEDO, 2004),

numeracy (PINHO, 2013), mathematical literacy (SILVEIRA, 2016), mathemacy (SKOVSMOSE, 2013) and matheracy (D'AMBROSIO, 2004), indicating the lack of uniqueness around a common term and concept.

In the case of teaching the mother tongue, studies on literacy(s) have been expanded, in line with changes in the social context. Kleiman (2014, p. 81, our translation) draws attention to the importance of using different texts for the development of literacy(s):

> [...] the interest in studying these mutant forms of communication defined, in 1996, for the so-called New London Group (New London Group), a new object of study, multiliteracies. [...] the authors advocate a much broader conception of literacy than the one that generally underlies school work, and propose the teaching of multiliteracies, that is, the inclusion in the curriculum of all forms of representing meanings of different semiotic systems - linguistic, visual, sound or auditory, spatial and gestural - interrelated in the contemporary multimodal text.

Considering the perspective of multiliteracies, we ask ourselves about the existence of a mathematical multiliteracy. Taking the definition of the New London Group, cited by Kleiman (2014), we understand that mathematics is presented in several texts, or even in different semiotic systems. We can cite as examples the promotion of a supermarket with a certain price in a 5 kg product and another proportionally more expensive in the same 1 kg product, the graphic representation in the television newspaper, the discount value of a certain product in a radio call, the buying a lottery ticket, a road sign stating the maximum speed. These are contexts that reveal themselves as multiliteracies, multisemiotic literacies or critical literacies, arranged in contexts of society.

In this position, aspects of all areas that encompass mathematics are included, such as numbers, geometry, magnitudes and measurements, statistics and algebra, to the point of highlighting that mathematical knowledge is important for decision-making around simple everyday tasks. A more advanced level of mathematical literacy will provide greater agility in resolution and certainty in decision making. Tfouni (2002) affirms the existence of degrees of literacy and a process of socio-historical acquisition of this knowledge. Likewise, Toledo (2004) recognizes the possibility of change in the numeracy level of individuals, based on different circumstances.

In addition to the processes defended by Tfouni (2002) and Toledo (2004), we also share the idea of infinity of mathematical literacy, considering the incompleteness of human beings.

As soon as school mathematical literacy [11], for example, despite its finitude as a time for learning and defining knowledge during the schooling process, can and should be rebuilt and re-signified throughout life, as a movement of impermanence of human life (FREIRE, 2021).

Freire (2021) highlights the question of the human being's incompleteness, pointing to insertion in a permanent search movement, re-discussing naive curiosity and criticism, which becomes epistemological. Also, the author highlights the movement of construction of the world by the hands of man, "that is, more than a being in the world, the human being has become a presence in the world, with the world and with others" (FREIRE, 2021, p. 20, our translation), in which mathematics itself was historically constructed and evolved.

Still, Freire (1995) understands the need for human beings to be aware of their incompletion. After all, it is the same that gives us the impetus for transcendence (D'AMBROSIO, 2001).

> For example, perhaps the first piece of knowledge that must become wisdom and that we incorporate exactly is the following: educational practice is based not only on the ontological inconclusion of the human being, but on the awareness of inconclusion. It is on top of these two feet, on the one hand my inconclusion, on the other my awareness of inconclusion, that is where education is founded. Human educability has no other explanation than this assumption of my conscious incompleteness. As this is also where my hope is based. You can imagine what an incongruity it would be if, being inconclusive as we are and aware of the inconclusion, we did not launch ourselves into a permanent movement of search, of search. The being who does not seek is the one who, being unfinished, does not know himself to be unfinished. [...] In our case, we assumed the inconclusion and when assuming the inconclusion, we are led to the search. It would be absurd to seek without hope. I can even seek not find, but my hope is part of the process of seeking. There is no hopeless search. It is nonsense (FREIRE, 1995, interview excerpt, our translation).

When we have the awareness of our incompleteness as human beings, education becomes an essential component that directs towards the transcendence of human life (D'AMBROSIO, 2001), beyond school walls, in a horizon where there are always things to be done, learned and experienced (STREET, 2003). Thus, access to knowledge and the promotion of literacy, or even multiliteracies, including mathematics, allow us to (over)live in a highly literate and increasingly complex society.

The perspective of mathematical literacy that we defend and its scope as an infinite character is based on the breadth of areas that constitute mathematics, on the understanding of

[11] We are referring here to the mathematical literacy developed at school based on the subject of Mathematics during basic schooling.

the incompleteness of human beings and life beyond the schooling process. It also considers the possibilities of change that mathematical literacy, at its different levels, can provide to subjects, with a view to transcendence. After all, "it is a contradiction for a being aware of his incompleteness not to seek the future with hope, not to dream of transformation, in short, not to seek the construction of a world where everyone can fulfill themselves with autonomy" (D'AMBROSIO; LOPES, 2015, p. 15, our translation).

Final remarks

To end this discussion, we propose a brief resumption of some of the concepts that were treated throughout this text, in order to deepen the reflection on the infinity of mathematical literacy. As one of the forerunners of discussions on the subject, professor Ocsana defended in her doctoral thesis (1997) that "the term mathematical literacy refers to *to the acts of learning to read and write the mathematical language used in the first grades of schooling*." (DANYLUK, 2002, p. 14, emphasis added, our translation). According to the author, being literate in mathematics means understanding what one reads and writing what one understands about the first notions of arithmetic, geometry and logic.

From this perspective, being mathematically literate involves a very finite dimension in which the student, based on reading and writing used in the mathematical language of the first years of schooling, would be a mathematically literate subject. From the above excerpt, the definition is quite restrictive. However, we must remember that the author proposed to carry out a study with children between four and five years old. Therefore, there was no broader concern about possible levels of mathematical literacy and, still, a very present look at literacy as a reading and writing process, without mentioning literacy itself.

Even with these considerations, professor Ubiratan D' Ambrosio (2002, p. 11, our translation) points out that "[...] the mathematical reading of the world seems to be one of the characteristics of the human species. Man acts mathematically, for reasons that cognitive scientists cannot yet give a satisfactory explanation. As we speak, we mathematize". Furthermore, the author stresses the need for literacy and math to "elevate man to his greatest condition" (D'AMBROSIO, 2002, p. 11, our translation). The greatest condition of man to which D' Ambrosio (2001) refers is that of transcendence, from a perspective beyond survival, considering the incompleteness of the human being and understanding the infinity of processes related to learning during life, beyond schooling.

If we return to mathematical literacy in a restricted way, we could understand it as the use, reading and writing of mathematical symbols, for example. Also, going a little beyond the initial series, we could consider the fact of performing the calculation of basic operations, or even, finding the value of "x" in 1st degree equations, from a mechanical process of repetition, of a learning mathematics that restricts itself to knowing how to use rules and formulas as mathematical literacy.

Would it be wrong? Possibly. This, however, would be a slightly broader definition of mathematical literacy for the early years. The question we are referring to is related to literacy or, even, to the mathematical literacy that we want to develop and provide to students. We recognize the need for knowledge of mathematical language for the process of mathematical literacy, and consequently for its expansion, in a process that promotes mathematical literacy.

In the same way that Soares (2003) indicates the importance and ease of being literate in order to be literate and how much the processes are simultaneous and interdependent, with mathematics it is no different. Implicitly, a higher level of mathematical literacy will provide a higher degree of mathematical literacy, considering that the more mastery of language and mathematical knowledge, the lesser the concern about how to use a certain rule, how to calculate. Thus, thinking becomes more conscious about resolving the issue in terms of understanding and criticality about what is being done, there is a shift from syntax to semantics.

Tfouni (2002) defends literacy as a socio-historical process and indicates the existence of degrees of literacy. In mathematics, the process of acquiring mathematical literacy also takes place from levels (TOLEDO, 2004) that even distinguish themselves from an autonomous mathematical literacy to an ideological literacy. In addition to using a simple rule for mathematical resolution, it requires understanding and criticism of the social context.

In this amplitude of the mathematical literacy process, if we consider the acquisition of "basic" mathematical skills, we can say that there is indeed a finitude in learning and teaching. Now, if we consider the perspective taken by Critical Mathematics Education, as a enhancer or not, there is an infinity in the development of mathematical literacy that can be characterized from mathematics as a social construct, as a learning process that takes place at the individual and collective from the perspective of dialogicity. It is understood, then, as a process beyond the school walls, still considering the incompleteness of the human being.

The considerations proposed so far provoke us to think about how to promote mathematical literacy in students so that they are aware of mathematics and the processes involved, in order to contribute to their empowerment. And yet, how and in what way the

teachers will be developing this thinking and critical work, looking at the development of the school path and the subjects involved, in a transforming action permeated by criticality.

We agree with D' Ambrosio and Lopes (2015, p. 12, our translation), when they state that, by prioritizing a technical approach to mathematics in our professional actions, "with a perspective that restricts Mathematics to itself, we can only train people in skills of calculation and the use of algorithms, denying him the mathematical knowledge necessary for reading the world to which he is entitled". It is necessary to go further, in defense of a mathematical literacy in the critical perspective.

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