

Citizenship Notions in Mathematics Textbooks to Countryside Primary School in Brazil

Noções de Cidadania em Livros Didáticos de Matemática Produzidos para os Anos Iniciais da Educação do Campo no Brasil

*Vanessa Franco Neto*¹

*Angela Guida*²

ABSTRACT

In this paper we analyzed the Brazilian National Textbook Program that has evaluated and distributed mathematics textbooks for the countryside population in Brazil. From a Foucaultian perspective, textbooks are conceived as a powerful technology for governing population. Through a discourse analysis, statements regarding citizenship notions that circulate in these materials were interrogated. From the data analyses, we could find 182 excerpts that has showed us these citizenship notions in the countryside context. We have worked with three statements: Community and collective notions in countryside context, Awareness of individual and collective health, Environmental one setting everybody as a responsible character. As the result, we could conclude that the mathematics skills are showed as a way to manage efficiently these required practices, those that enable the individual responsibilities.

KEYWORDS: Citizenship. Mathematics textbooks. Countryside education.

RESUMO

Neste artigo, analisamos o Programa Nacional do Livro Didático, que avalia e distribui livros didáticos de matemática para a população do campo no Brasil. De uma perspectiva foucaultiana, os livros didáticos são concebidos como uma tecnologia poderosa para governar a população. Por meio de uma análise de discurso, interrogaram-se as falas sobre as noções de cidadania que circulam nesses materiais. Da análise dos dados, pudemos encontrar 182 trechos que nos mostraram essas noções de cidadania no contexto do campo. Trabalhamos com três depoimentos: Noções de comunidade e coletividade no contexto do campo, Conscientização da saúde individual e coletiva, Ambiental definindo todos como um personagem responsável. Como resultado, pudemos concluir que as

¹ Universidade Federal de Mato Grosso do Sul. E-mail: vanfneto@gmail.com. ORCID: <http://orcid.org/0000-0002-2129-8040>

² Universidade Federal de Mato Grosso do Sul. E-mail: angelaguida.ufms@gmail.com. ORCID: <https://orcid.org/0000-0002-8948-646X>



habilidades matemáticas se mostram como uma forma de gerenciar de forma eficiente essas práticas requeridas, aquelas que viabilizam as responsabilidades individuais.

PALAVRAS-CHAVE: Cidadania. Livros didáticos de Matemática. Educação do Campo.

Introduction

For the old Greeks, being a citizen was the path to belonging to society. In order to be considered a human being it was necessary to be a citizen; only this type of individual had the right to speak to the community (GALLO; ASPIS, 2010). The foreigners and the poor, for example, were not citizens and did not belong to the polis. Not all humans were considered citizens and not all had the same rights. Nowadays, in Western societies, the criteria for being a citizen are different, not only from a legal point of view, but also with respect to the values that people should embody to be considered citizens.

In sum, what defines citizenship as a concept is dynamic, historical, geographical and culturally located contingent. The citizenship notions can be entangled with an idea about nation. And the school took on the role of making individuals members of nations, in other words, into citizens.

Current ideas about citizenship includes a set of influences and definitions, but in all of these approach lines the citizen is a subject, in a Foucauldian sense, who should embody rights and duties in order to position himself acting positively in the society.

Adjectives like qualified (ANDRADE-MOLINA, 2017), modernized (NETO, 2019), productive and others are qualities often linked with citizenship trends nowadays. These implies that the subject need to be constructed and modified himself full time. In other words, big statements entangled in narratives about productivism and entrepreneurship are naturalized truths through which people are governed.

In this paper, we are searching the practices, morals and values entangled with school mathematics in order to highlight the production of the specific citizenship pattern in countryside areas in Brazil.

The notion of citizenship and its link with mathematics curriculum has appeared strongly in this century (SILVA, 2019). The ideas “[...] that people need mathematics in their daily lives to participate as actively engaged citizens” (PAIS, 2016, p. 1399) has become naturalized nowadays. This movement started becoming substantial especially in the postwar when the role of mathematics and science education articulated with the build of citizenship was put forward in debates about

the modernization of education. But since XIX century, the education has been becoming a way to fabricate the citizen as an agent to social development (TRÖHLER, 2015) in a political sense, it offers to individual an idea about belong to the community. It is not different in official Brazilian mathematics curriculum: “mathematics is an important component in the construction of citizenship, as society increasingly uses scientific knowledge and technological resources, which citizens must know” (BRASIL, 1998, p. 19). However, one question emerges from statements like that: what type of citizenship is desired to be built through education? And, for us, it is possible adding one more point in this question: What type of citizenship is desired to construct through education by means of the mathematics knowledge?

Before we unpack these questions, it is important to point out that in Brazil, as well as in other countries, citizenship is a fundamental principle to guide the educational orientations (see Brasil, 1996). In order to follow this path, in mathematics education field, many researchers have been exploring this question, mainly the roles attributed to the mathematical knowledge in scientific progress and its effects in individual and society welfare. In this sense, the mathematics curriculum has become a key element to build ideas regarding this type of currently valued citizenship.

In our research, the empirical material the total of ten mathematics textbooks produced for the countryside primary schools. With the aim to analyze how these textbooks operate citizenship we use Foucault’s theorization about governmentality because it makes possible to study how modern education unfolds a set of strategies to making specific “kinds of people” (POPKEWITZ, 2018). School practices are not only about teaching and learning school subjects, but they work as a path to “govern by the citizenship” (GALLO, 2013). The governmentality is about the self-government in relation to government of others; it is the meet between domination techniques exercised over the other and the techniques of the self (FOUCAULT, 2012). These techniques of the self are a way to individual understand himself and position himself, they allow the individual to perform a set of operations in both own body and soul, managed your thoughts, your conducts, your way of being, becoming yourself in order to achieve a type of happiness, purity, wisdom, perfection or immortality (FOUCAULT, 2015, p. 266).

In a possible way to survey about the link between school mathematics and the ideas about citizenship, it would be appropriate to build questions like that: which are mathematics contents and knowledges necessary to guarantee citizenship? This

is a suitable question, but it is not done in this paper. We assume that the mathematics curriculum through its contents helping, reinforcing, justifying and validate values, moralities, therefore, contingent notions about citizenship, in other words the mathematics contents help in a way to organize society and, in this sense, the place where the citizen will be able to perform. With the aim to unpacking this, we will analyze mathematics textbooks done to countryside population in Brazil in order to describe the constitutions of students as subjects by means of a discourse analyze as a theoretical and methodological framework. In Brazil the textbooks are an important and a powerful side of the curriculum (SILVA, 2019; NETO, 2019). In addition, based in our theoretical framework, we have understood that these materials unpack notions about the suitable citizenship, therefore, our analyses are comprehending these materials as both political and historical documents in society, in this sense they allow us to describe a history of the present, about what is desirable and what is feared, about who needs to change, and who is the norm currently.

In this sense our analyses showed the citizenship ideas as a way to manage the population by means of practices, where questions about the responsibilities with community, health, hygiene and environmental, for example, are the floor for the countryside society and, at the same time, a way that allowing the political manage of life. Therefore, this paper describes the desirable citizen built discursively through both needed mathematics knowledge and a personhood with personal and collective consciousness.

Governing through the mathematics textbooks

From a disciplinary power where the people needed to be managed by institutions the biopolitical is more open, subtle and, nonetheless, more powerful. The ideas about governmentality are guided by the biopolitical practices. They lead the population by means of administration of everyday practices as health, sexuality, birth, happiness and others as a way to produce discursively a modern subject that care yourself and others, became them competent, productive and manageable, in other words, these practices describe clearly notions about the desirable citizen. They produce practices by means of processes of normalizations strongly linked with ideas about knowledge, responsibilities and reason, and our point is that the mathematics as a type of knowledge that reinforce, justify and legitimize these practices.

In a governmentality technology, the political rationalities operate through specific values, moralities and epistemology contributing, in this sense, to build a set of discursive practices as a status of obvious, rational and the good path for everyone to guarantee the society order and operation.

As one of the most important type of knowledge nowadays, the mathematical contents are considerate as a way to offer an efficient path to deal data and information, a relevant tool to decision making, that is, is an important type of knowledge to build the citizenship at modern society. Like it is highlighted in one of the textbooks analyzed: “the mathematics, with its practical and utilitarian character, acts in the service of daily necessities, playing an important role in the formation of the citizen” (THADEI et al., 2014, p. 245), in other words, the mathematical contents is strategic tool to organize the society, therefore, it is a way to conduct conducts.

Our empirical material is from a part of the program called National Textbooks Program (PNLD in Portuguese). This is a big and important program to public education system in Brazil (see CARVALHO, 2018), and a prominent research object in mathematics education field (see SILVA, 2018). In Brazil, the government distributes textbook for each compulsory subject for students in public schools by means the PNLD. These textbooks are done by private editors and it purchased by government periodically. Between 2013 and 2018, there was a specific PNLD to Countryside population the “PNLD Campo”. This program was result of a set of political actions to improve the forms of life in countryside areas.

However, this was not easy. These textbooks were made as a result of the political struggle of both countryside populations and social movements (they are a big NGOs that fighting for both the recognition and the improvement of countryside life forms and conditions) that claim specific educational materials witch approach own experiences and values from these organizations. There is a commitment from these textbooks with these NGOs principles: “the collection was built based on the Countryside education principles and procedures, which are defended by social movements and supported by law” (BONJORNO; BONJORNO; GUSMÃO, 2014b, p. 200).

For these movements, social justice by means of land reform, is a way to defend peasant life and culture. And for these movements the education is a key strategy to promote their aims (see KNIJNIK, 2007).

Thereby, they were sent to countryside primary schools in Brazil in 2013 and 2016 (each three years the textbooks are renewed by the program-PNLD).

In face of that, we are assuming these materials as a potential resource to understand which the features, values and practices are represent the citizenship in the countryside communities in Brazil, this with looking through the mathematics textbooks, as it has been announced by the one of the authors:

The countryside education is now a reality as a result of struggles of the educators and peasants. (...) This specificity is related to the guarantee of rights and citizenship of the peasants understood in their identities and lifestyle, as opposed to other projects related to the rural world or agribusiness (THADEI et al., 2014, p. 206).

For us the start point is assuming that the notions on social justice were the bases to guarantee the emergence of these materials as a government educational policy, in a Foucauldian sense.

Therefore, the intention is to survey how citizenship ideas in mathematics textbooks produced for the countryside population in Brazil operates as a narrative line for the discursively fabrication of the desirable citizens and how the political rationalities for the subject appears within the empirical material, in other words, our analysis unpack the discourses about what is important for the peasant children “to know”, “to be able to do” and how to position oneself as a subject in this society.

Methological ways

In this paper were analyzed two collections with five books each are part of a public program to improve the education system in rural areas. These textbooks are a special part of Nacional Textbook Program (PNLD) that since 1985 the Brazilian government has been running. This program distributes officially approved textbooks in different compulsory school subjects to all students at public schools. The textbooks had been written and published by private companies; however, every year the government issues a public call for the private publishers where it outlines the subjects needed and the goals to be achieve in these textbooks. There are strict guidelines on what the textbooks should contain of content and of transversal topics such as citizenship, interdisciplinarity, etc. After the private publishers send their proposals, government experts assess their quality. Some proposals are approved and then the publishers can produce the textbooks. At the end of the process PNLD publishes a list with the approved textbooks so that teachers can choose the suitable textbook to be used in their subject (about the program, see CARVALHO, 2018). Broadly speaking it is important highlight that, in terms of mathematics contents, the official curriculum in Brazil is the same for countryside schools and schools in general (e.g. urban, indigenous, military, etc.).

The path of analyses production for the present paper is done from the articulation between Foucaultian toolbox and contemporary studies that look the mathematics textbooks and the mathematics curriculum to produce questions about governmentality practices by means of citizenship notions. These theorizations allow us to describe and to analyze the elements and narratives in these textbooks about the suitable practices that needs to be assimilated by children in a way to become a desirable citizen in countryside areas in Brazil. The discourses are built by means of a set of statements, in according Foucault as analytical strategy considering statements in themselves, we will not seek, beyond all these analyses and at a deeper level, some secret or some root of language (langage) that they have omitted. We shall try to render visible, and analysable, that immediate transparency that constitutes the element of their possibility (FOUCAULT, 1972, p. 112).

In this sense, the statements are as neither hidden, nor visible, our analytical exercise is to describe them in order to find the notions about the desirable citizenship in the countryside context. We interpret the statements that are intertwined to guide the discourse practices into citizenship in these textbooks.

As analysis procedures, the data was taken by means of mathematics activities, exercises, orientations to the teacher and images to describe the statements that within our empirical material. The materials analyzed are the teacher textbooks therefore the teacher's instructions are data too in our analyses.

The methodological procedures were done with a data analyses software to help the selection and interpretation steps. Our first intentions were to describe the countryside subject from the textbooks reading and analysis, and, during this process the ideas about citizenship have appeared frequently and we understood that was important in order to describe the countryside subject. Regarding citizenship we have worked with three statements: first an environmental one setting everybody as a responsible character, second the awareness of individual and collective health and third being the community and collective notions in the countryside context. These statements make up a system of positivities that produce the subject at a given time and space and, for this reason, shaping the citizenship notions in countryside, in the case of our analysis.

These three statements have showed up within a total of 182 times. Sometimes they appear simultaneously sometimes not. However, in the next section we bring some examples as an important strategy to highlight the regularities from these excerpts - images, tasks, activities, texts, teacher's instructions, among others

– in order to describe and to hold up a robust notion about citizenship discourse in countryside that operate to produce the subject in this context.

Analyses

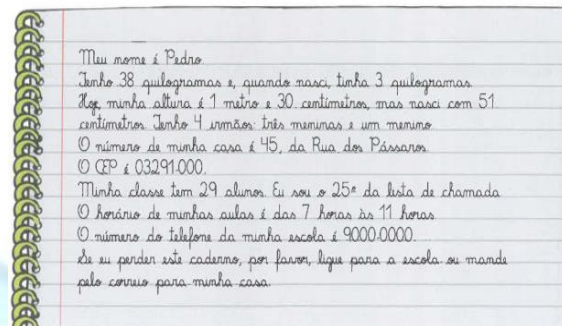
In our analyses the point is not about if the student in the countryside context will become a citizen in line with the supposed instructions from the mathematics textbook, this is not our argument. The path is describing and to analyzing the ideas about what is good, better and important as practices that are intertwined with mathematics curriculum by means of materializing suitable characteristics as citizenship behaviors so students can exercise the knowing of himself and therefore put himself in the desirable subject body.

For example, in primary school teaching the number system is central in mathematics curriculum (see Brasil, 1998). The numbers in this educational level are shown as a way to organize life, to describe the individual, as it can be seen in the Pedro case:

Figure 1 – Numbers in everyday life
Os números e suas diferentes funções

Os números são usados para quantificar e também para medir, ordenar e codificar.

Observe as anotações que Pedro fez em seu caderno em que os números aparecem em diferentes funções.



Source: BONJORNO; BONJORNO; GUSMÃO, 2014c, p. 87

Translate: The numbers and their different functions

The numbers are used to quantify and measure, to order and codify too.

From Figure 1, it is possible to look the link stated between the numbers and their functions in order to manage human life or better, managing human life in society.

In the same way that Pedro (Figure 1) used numbers to identify himself, to talk about his body features, his home localization, to describe his appointments, and

others information, it is achievable understanding the mathematics contents are being articulated as a body's politic technology. From this point we should be able to inquire in which ways the curriculum turns around the mathematics knowledge in order to produce subjectivities by means of a body's politic technology.

In order to understand this movement, now it is possible we start the statements' presentation about the desirable citizenship in Brazilian countryside.

Community and collective notions in countryside context

As already announced, these textbooks are results by social movements struggles that claim politics to improve life conditions in countryside areas in Brazil. Big NGOs in this country have had traditionally acted to promote the education in this context clamming a strong linked between scientific knowledge and political actions (see FERNANDES, 2014). Likely for this reason, the ideas about "community" and "cooperative" are notions repeated systematically in all ten mathematics textbooks. For this social movement, the collectivity is a guide notion to organize the work and the life in this context.

The citizenship notions in these textbooks are approached by a set of practices as recognition and identification of the social rules and public codes, for example, the exercises and images described the peasants, by means of mathematics arguments, in meaning relations where they (the peasants) could be recognize themselves and position themselves as subjects in the countryside areas. In this sense, the stylized practices are in movement to be recognized by the students in basic school level in order to (re) positionate himself at the society all the time.

In the example below, to explore the geometry figures, the context is a meeting between the neighbors to discussion about the best way to build a garden where food will be planted.

Figure 2 – Geometry to build a garden

6. Na comunidade de João, vai ser construída uma horta comunitária. Antônio fez a planta baixa dessa horta e está mostrando aos vizinhos. Veja como ficou o desenho de Antônio:



Source: BONJORNO; BONJORNO; GUSMÃO, 2014b, p. 32

Translate: At João's community, it will be built a communitarian garden. Antonio did the structure plan and he is showing to his neighbors. Look how was the Antonio' draw:

What geometry figures remembered the marks of the floor in this structure plan?

Look that in this description about countryside lifestyle, there is an interest to build a common good at this community. For this, the assemblies are an important practice in this social organizations to decide together the strategies inside the group. Thereby, collectivity sense is an important value for this population, after all everyone will eat the vegetables by the garden in future, so everyone needs to discuss and to decide about the best strategy to build it. In witch ways do the mathematics knowledge it is useful in this situation? The geometry, as a type mathematics knowledge is shown as a suitable tool to help Antonio plan the garden and, in the same sense to present his plan for the community.

It is appropriate highlighting that the spatial localization and the geometry notions are often linked with the community practices in these materials because these mathematics contents are taken to teach about the importance of planning to organize the activities as well as optimize them in sense of economic and effectiveness. In the same sense, the numbers, arithmetic's operations, information management are a path to administrate the countryside activities. An example often is inviting the students to find patterns about the weather along the year to organize the planting calendar. In short, the relation between mathematics curriculum and community mentions is invariably to build a set of manageable practices and improving their efficiency, thereby strategy thought needs to be in line with geometry, tables, arithmetic and patterns to become possible and precise.

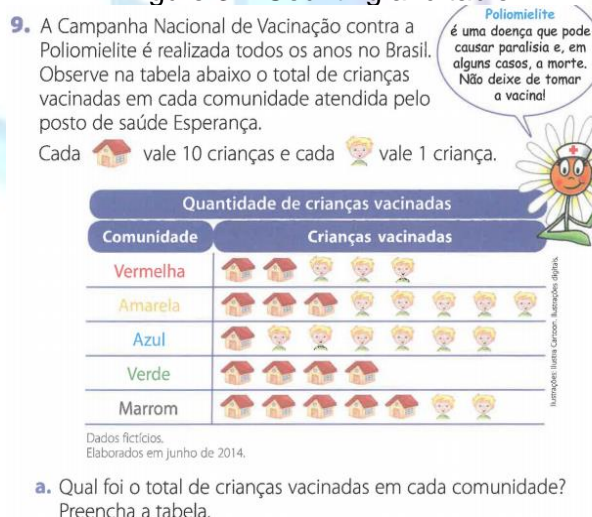
Throughout the ten textbooks analyzed, the words like “community” and “cooperative” often are showed (precisely 35 times) inviting peasants to work together to help the school from community or other public places in countryside, showing them in organized practices to achieve some common good. Therefore, the desired citizenship in countryside areas in Brazil needs to engage yourself to support the collective activities for your community. Simultaneously, it is necessary to plan, to work, to improve the conditions of life with your own work force, independently of the state responsibilities. For us these narratives are strongly linked with the notions about the techniques of the care of the self and the other, produced by a biopolitical logic.

Other important result about these statements is the ways of each individual working to help his/her community. As shown in “figure 1” the male’s characters roles are to do gardens, buildings, to drive car while the female’s characters roles help their communities organizing parties, especially, cooking for collective activities. So, the work gendering division appears explicitly over our empirical material, reinforcing the results found in Neto (2018).

Awareness of individual and collective health

In the next example, to approach the content of proportionality and the procedures of counting, the ideas about health care practices are considered suitable to explore the mathematical contents.

Figure 3 – Counting and table



Source: BONJORNO; BONJORNO; GUSMÃO, 2014b, p. 75

Translate: The national vaccination campaign against the polio is realized every year in Brazil. Look at the table below the total amount of vaccinated children in each community served by the “Esperança” health center. Each “house” is

equivalent to 10 childrens and each “blond girl” is equivalent to one kid.Which is the total amount of vaccinated children in each community. Fill in the table.

Caring yourself, regarding your own healthy is a strong statement in these textbooks. Therefore, the link between good health practices and mathematical arguments is common. In other hands, this link happens to contextualize mathematical exercises as a “figure 3” while explore the counting in order to manage and to organize the kids in direct to rule the vaccination distribution. In these case there is an explicit advertise about the healthily practices: it is important to maintain your own health. The vaccination campaign approaches the work with proportionality, at the same time the instructions the necessary cares with the Polio illness appears as an advertisement sent by a female character: an anthropomorphized flower-nurse (see NETO et al., 2019).

In the same way, the next example approaches the notions about the importance of drinking water to healthy habits and, at the same time, its the conscious use. Again, these issues are taken to explore the mathematical content of proportionality

Figure 4 – Water quantity measure

1. Catarina sabe que a água é muito importante para a saúde e não deve ser desperdiçada.



Source: BONJORNO; BONJORNO; GUSMÃO, 2014b, p. 17

Translate:

1. Catarina knows that drinking water is important for healthy and it should not be waste.

Catarina: How many cups of water fit in this gallon?

Four glasses fill a jar

Two jar fill a bottle

Draw the quantity of cups fill a bottle.

This exercise shows Catarina, a girl who knows about the necessity to save the water and, simultaneously, about the importance of ensuring its consume because “drinking the water” is a fundamental habit between living beings.

For these statements, the healthy practices explore the time measure contents. The incentive to organize and to manage the life in a way to guarantee the healthy is often reinforced by mathematics arguments while the mathematics knowledge is showed as a path to possibility these practices. The mathematics contents are taken as a way to enable the body politics practices. This acts on the subject by means of a technology of government in possession of mathematics arguments.

Other important point is, again, the character who is responsible to show all these ideas is a girl as in many other activities in these textbooks the female characters are responsible to announce and to take care about the health, hers and her family's. In the same way, the problematic issue about saving the water is reinforced in these textbooks, in line with the results obtained from analyses in other textbooks from Brazil. That is, the subject needs to be responsible for the environmental resources and, at the same time, ensure his health. Therefore, the mathematics skills are showed as a way to efficiently manage these required practices, those ones that enable the individual responsibilities.

Environmental one setting everybody as a responsible character

The mathematics knowledges and skills are essential attributes to sustainable development (IDELAND; MALMBERG, 2014a), in this sense from this last example, it is possible to start presenting the next statement: the environmental matter. In the same way as the last analyzed statements, the concerns regarding environment are shown as very important practices for the countryside's inhabitants:

Look the figure 5:

Figure 5 – Trash problem

1. SE O LIXO DEMORA TANTO A DESAPARECER, O QUE ACONTECERÁ SE AS PESSOAS CONTINUAREM SEMPRE PRODUZINDO LIXO?
O lixo se acumulará e tomará os espaços, poluindo o ambiente.
2. O LIXO É UM PROBLEMA SÓ DAS GRANDES CIDADES OU É TAMBÉM DO CAMPO? POR QUÊ?
Espera-se que os alunos percebam que o lixo é um problema tanto nas grandes cidades como no campo, pois em ambos ele pode se acumular, já que leva muito tempo para se decompor.
3. O QUE SE PODE FAZER PARA DIMINUIR O PROBLEMA DO LIXO?



Ilustração digital: Projeto Sociedade Humana

Resposta pessoal. Ouça a sugestão de todos os alunos que quiserem se manifestar. Questione os outros se concordam ou não, solicitando que justifiquem suas opiniões. Anote as sugestões no quadro de giz. Por fim, leia hoje a seguir e pergunte em qual dos "itens 8" as sugestões citadas se encaixam.

Source: THADEI et al., 2014, p. 159

Translate:

If the trash takes so long to disappear, what happens if people continue producing trash?

Is the trash mainly a city problem or it is a countryside problem too? Why?

What can we do to decrease the trash problem?

The context is about the responsibilities with the trash produced by the community. At this activity, the aim announced in the teacher's orientation is to propose a reflection about their own trash production and their communities too and this should be done to approach numerical sense in students at the first-grade schools, especially the ideas about additive field (sum). The quantity of trash produced is an individual problem and should be solved singly. In this example, the mathematics contents about numbers and quantities are taken to produce in the students the conscious about their trash production. These ideas produce in subject the self-accountability to manage oneself to produce less trash, after all, they need to find ways to fix this problem.

Meanwhile, it is possible to find the solution of the problem shown in "item 3" of the "figure 5" in one of the analyzed textbook, as it can be seen in the figure 6 below:



Source: THADEI et al, 2014, p. 160

Translate:

To facilitate the selection, each one can help by placing the different types of garbage in the correct basket, according to its color.

This approach to trash destination it is considerate a responsible way (currently) thinking its management: "(...) [in] the process of recycling, trash becomes ordered and cleaner as it is transformed from waste into a reusable resource" (IDELAND; MALMBERG, 2014, p. 09) and individual conduct strictly linked with the type of desirable citizenship practices nowadays. The graphs, numbers, count, arithmetic operations are used to reinforce the self-awareness in subject about his responsibility with his community, his world. These mathematics contents illustrate the size of the problem as a way to engage the people to manage themselves to take care the environmental.

However, in Latin America countries, especially in Brazil, we have had historical problems with this. In addition, in rural areas, the suitable trash destination it is further problematic as demonstrated by Silva (et al., 2014). Furthermore, to reinforce the necessity to concern about the waste, to approach the counting content, the consequences for the environmental are explained to show the dangers about the farmers that are irresponsible of their own trash.

Figure 7 – Trash in ocean

Baleia morre após ingerir 17 quilos de plásticos na Espanha

Uma imensa baleia morreu após ingerir mais de 17 quilos de diferentes tipos de plástico. A autópsia mostrou ainda que o material era proveniente de estufas no sul da Espanha. O material era de agricultores que produzem tomates e jogavam as sacolas no mar.

Apesar de suas 50 toneladas e 14 metros de comprimento, poucos quilos de plástico, um material sintético produzido pelo homem, foram suficientes para matar o mamífero.

Anda – Agência de Notícias de Direitos Animais, 15 jul. 2014. Disponível em: <www.andajor.br/15/07/2014/baleia-morre-apos-ingerir-17-quilos-de-plasticos-na-espanha>. Acesso em: 5 ago. 2014. (Adaptado.)



Baleias e outros animais marinhos morrem por ingestão de lixo em várias partes do mundo.

Source: GOMES et al., 2014d, p. 35

Translate:

*Whale dies after ingesting 17 pounds of plastic in Spain
A huge whale died after eating more than 17 kilos of different types of plastic. The*

autopsy also showed that the material came from greenhouses in southern Spain. The material was from farmers who produce tomatoes and throw away the bags into the sea. Despite its 50 tons and 14 meters in length, a few kilos of plastic, man-made synthetic material, it were enough to kill the mammal.

All of these practices carry out strong ideas on individual environmental responsibilities, researches as Hillbur et al (2016) have highlighted how this concerns in the educational context has built a specific type of subject the so-called “eco-certified citizen”. They produced this concept in Swedish context through analyzes in school science education. These authors have pointed that the “(...) sustainability and environment are often brought up as societal challenges, demanding individual actions in everyday life” (HILLBUR et al, 2016, p. 02). Moreover, they have been used this currently and omnipresent question to “(...) describe and discuss taken-for-granted conceptualizations of citizenship” (idem, p. 2), in other words to describe practices about the desirable citizen by means of a gaze about environmental and sustainable discourses.

In addition, they defined the expression adopted: “the eco-certified citizen [is understood] in terms of societal demands of knowledge-response to an emergent environmental problem, and how the student/citizen’s responsibility is defined according to this problem” (HILLBUR, 2016, p. 02). In this sense, the Brazilian textbooks for the countryside population present the same path to the “fabrication” (POPKEWITZ, 2004) of a childhood engaged in responsibilities for oneself and others about the environment in a specific cultural context, making them, at the same time, the subject governable, because they “(...) emerges as knowing, conscious, rational, sacrificing and active” (IDELAND; MALMBERG, 2014b, p. 08), in sum, a desirable citizen.

And this statement is strongly linked with neoliberal rationality according Ideland and Malmberg (2014b), because they reinforce the individual responsibilities for the world problems as well as this discourse is supported by mathematical and science arguments what ensure their aspect as depoliticized, possible to solve through good and efficient endeavors and impossible to resist nowadays.

This rationality find in its own governmentality strategies a way to development a subject capable to guide himself by means of the technology of the self, where the rules about the citizenship practices are internalized by the subject and, if he doesn’t follow the rules, he won’t be punished, instead, he will be considerate as a weird, as a subject possible to go to outside public spaces to socialization.

Last remarks

For us, through an analysis at mathematics textbooks it is possible to describe a history of the present time, as a way to find fit practices, suitable behaviors, and valued ways to life that produced by subjectivation process. From this premise our analysis showed that the desirable citizenship in countryside areas in Brazil must be engaged to individual and collective self-rule to build a consciousness towards community life, healthy practices, saving the natural resources, recycling trash and/or don't produce it and protect the animals. Beside that one needs to be able to use mathematics knowledge to make conscious decisions about his social group and, furthermore, about the world. This only could be put into practice practicable with a powerful awareness administration consciousness and in this situation the mathematics knowledge embodies an essential importance. The numerical system, the plan geometry, the measurement, the ordering, the classification, and others math skill presented above are brought forward to students strongly linked with ideas about manage and efficiency. For theses reason we aimed the political body technology face of mathematics curriculum in primary countryside school contexts. In our interpretation, the subject embodies these rationalities that are political, historical and socially located.

The inseparable relation between knowledge and power is widely discuss in work of the Foucault and the mathematics knowledge has been had a privileged space in western world (IDELAND; MALMBERG, 2014b) to reinforce the potential of these relation being a fruitful element in construct the desirable subject nowadays.

The desirable citizenship in the countryside context emerges as that who is responsible to guarantee the healthy, collective consciousness (especially if this child is a female) and he needs to be rational, responsible, planner and strategist (especially if this child is male) and the mathematics curriculum, specially by means of their contents is operate as a pedagogical device (FRIEDRICH, 2010) to engage the children in the citizenship way:

the production of an object within the particular rules and ordering principles of the pedagogical discourses. Pedagogical devices function in education as part of the regime of truth that dictates what is real and what is not, what is true and what is false, in the process of the intentional transmission of sets of values, knowledge and behaviors between subjects that is called education (p. 661).

From the mathematics textbooks, the pedagogical devices operate with countryside students notions familiar to them articulate with school mathematics knowledges in order to produce and replicate suitable practices that are make up by

moralties, values, norms, behavior, body positions in other words, precise notions about what is good, what is desirable, what is efficient and effective to build the good place for a community, that is, a desirable notion about citizenship in countryside.

In short, the discursive child in the countryside context embody practices to bring solutions to local and global problems feeding the individual with responsibilities in governing one through the good and better path for himself, his family, his community, his world: The individual becomes responsible for ‘everybody’s’ security and for the ecological system of the World” (IDELAND; MALMBERG, 2014b, p. 09). These individual responsibilities belong to one side of political rationality that is strongly linked to neoliberal logic, through knitting mathematics skills to decision making about the best way to position yourself face the personal, local (in community terms) and global both demands and threats.

However, the consequences of these discourses, are subtle, after all they are sustained by mathematical objective and strongly linked with the ideas about security, social welfare, in other words, loaded with good intentions therefore, they are impossible to resist and to oppose to such these important issues for all the world, for all the community.

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Received: December, 2020.

Approved: July, 2021.