

6-2022

Exclusion and inclusion processes in Mathematics classrooms: reflections on difference, normality and cultural issues within three different contexts

Thiago Donda Rodrigues

Fernanda Malinosky Coelho da Rosa

Alan Pereira Manoel

Follow this and additional works at: <https://scholarworks.umt.edu/tme>

Let us know how access to this document benefits you.

Recommended Citation

Donda Rodrigues, Thiago; Malinosky Coelho da Rosa, Fernanda; and Pereira Manoel, Alan (2022)
"Exclusion and inclusion processes in Mathematics classrooms: reflections on difference, normality and
cultural issues within three different contexts," *The Mathematics Enthusiast*. Vol. 19 : No. 2 , Article 6.
DOI: <https://doi.org/10.54870/1551-3440.1559>
Available at: <https://scholarworks.umt.edu/tme/vol19/iss2/6>

This Article is brought to you for free and open access by ScholarWorks at University of Montana. It has been
accepted for inclusion in The Mathematics Enthusiast by an authorized editor of ScholarWorks at University of
Montana. For more information, please contact scholarworks@mso.umt.edu.

Exclusion and inclusion processes in Mathematics classrooms: reflections on difference, normality and cultural issues within three different contexts

Thiago Donda Rodrigues¹
Federal University of Mato Grosso do Sul

Fernanda Malinosky Coelho da Rosa²
Federal University of Mato Grosso do Sul

Alan Pereira Manoel³
Municipal and State Secretariats of Education of Mato Grosso do Sul

Abstract: The Education for All proposal is an international document substantiating some approved national laws aimed at providing high-quality education for all: peasants, *quilombolas*, indigenous, landless individuals, women, people with disabilities, among others. However, when it comes to inclusion and School Mathematics, regardless of all advances in the Mathematical Education field, this subject remains formally introduced and taught, it still disregards the concept of teaching all, since it is inaccessible to most students. The aim of the current article is to reason on cultural, normality and difference issues, as well as on practices observed in the School Mathematics that contribute to promote exclusion in school environment. It was done by problematizing three contexts: Special, Afro-Brazilian and Indigenous education, and its inherent inclusion advances and challenges.

Keywords: Inclusive Education. Discrimination. Mathematics teaching.

Introduction

Inclusion represents the departure from discrimination and prejudice, towards a future that can be adapted to various contexts and realities. Neither the pace nor the specific direction of this transition can be determined. (UNESCO, 2020, p. 23)

Education is beyond spaces; it is also found at the borders, between the lines, in places of transformation and metamorphosis. Inclusion is formed amidst distinguishing differences and promotes transformations at all times. It is never institutionalized and does not segregate or accept exclusion in places only made for the excluded ones. Furthermore, it is a movement contrary to all forms of *apartheid* (Orrú, 2017). Inclusion means resistance to persistent historical and political exclusion processes in society and in educational environment.

¹ thiago.rodrigues@ufms.br

² fernanda.malinosky@ufms.br

³ alanpmanoel@hotmail.com

Based on the concept addressed by Camargo (2017) we could understand that inclusion is a paradigm to be applied to different physical and symbolic spaces. According to it, people have their idiosyncrasies acknowledged and valued. Thus, the most basic meanings of education and mobilized practices must be different in inclusive education, as they need to be driven by the subjectivity of indigenous and Afro-Diasporic cultures, or by the needs of people with disabilities. An inclusive society / school is precisely the one that changes its conceptions and practices in order to embrace all. (Rodrigues & Lübeck, 2018)

From this perspective, in environments characterized by the paradigm of inclusion there is no normality enforcement and the meeting of differences favoring relations of solidarity and collaboration. We understand solidarity and collaboration as a way of harmonizing relationships, consolidating democracy and encouraging people to reflect on the context they are inserted, rather than a sense of charity or philanthropy. Cooperation lies on the sense that “individuals work and collaborate to a common goal, find ways to solve problems that concern all” (RODRIGUES, 2010, p. 64). The sense of solidarity "consists of helping, supporting and / or defending someone in order to solve or minimize their problems" (Ibidem, p.64)

Inclusion, within the educational context, is based on ensuring access to everything schools can offer to enrolled students, at any stage of schooling process. In other words, the inclusive school provides *everyone* with high-quality education, the opportunity to get together with others and to participate in the educational process.

Thus, students with disabilities, Afro-Brazilians, indigenous people, among other vulnerable⁴ groups, also belong to the whole of society. Consequently, they are part of the inclusive school universe. However, most people - be them involved in education, or not - believe that Inclusive Education mainly aims the Special Education population. It is so, because everyone sees how difficult it is to have access to what is offered by schools.

⁴ According to Unesco (2005), groups vulnerable to exclusion or marginalization encompass abused children, child workers, refugees or homeless children, migrants, religious minorities, domestic child workers, children affected by poverty, linguistic minorities, ethnic minorities, street children, children in conflict zones / child soldiers, children with disabilities, nomadic children, HIV positive orphans.

We herein address the broader international discussions triggered by the United Nations agenda known as *Education for All*, which is driven by the Jomtien Declaration⁵, from 1990. According to official documents issued by Unesco (1990; 2005), common schools of inclusive orientation are “[...] the most effective way to combat discriminatory attitudes, build an inclusive society and obtain education for all” (Unesco, 2005, p. 10, our translation). *Education for All* means ensuring that “all children should learn together, wherever possible, regardless of any difficulty or difference they may have. Inclusive schools must acknowledge and respond to the diverse needs of their students” (Unesco, 1994, p. 5-6). We complete such a statement by emphasizing that the inclusive school must also ensure other educational dimensions, rather than just learning; these dimensions must be shared and enjoyed by all in the education universe.

Inclusive Education is overall, closely linked to the rights of students with disabilities, global developmental disorders or with highly skilled students. These groups must be addressed in international laws and documents, as well as their long and effective struggle for their rights. Inclusive Education is also intended for all others, regardless of social, cultural, historical, territorial and generational profile; subjectivities, gender, sexual orientation, phenotypic and / or physical differences, nobody can be excluded, education must belong to “all” in the inclusive school. Thus, we understand that the inclusive school must provide high-quality education to everyone, be them peasants, *quilombola*, indigenous people, landless individuals, women, people with disabilities, among others.

It is worth saying that the idea of equity means understanding the inequities of our society, its different contexts and the different backgrounds brought by students to school (Faustino, 2018). Therefore, each subject is taken into account, as well as its individuality and background, which should not be disregarded.

⁵ We refer to the World Declaration on Education for All: Meeting Basic Learning Needs, which advocates that each person, regardless of age, should be in the position to take advantage of educational opportunities, which must meet their basic learning needs, such as reading and writing, oral expression, calculation, problem solving, in addition to the development of skills, values and attitudes, necessary for human beings to survive, fully develop their potential, live and work with dignity, fully participate in development, improve the quality of life, make informed decisions and continue learning. (UNESCO, 1990)

Despite all advancements in the Mathematics Education field, this subject remains often formally introduced and taught⁶, which is not in compliance with the concern of the right of all to learn, since it is still inaccessible to most students. However, the hard time learning Mathematics was attributed to students' lack of talent or inability towards it, or to the difficulty inherent to the epistemological nature of mathematical knowledge. According to Piovesan & Zanardini (2014),

Mathematics, as social instrument produced by man, can play a dual role. On the one hand, it can be used as instrument of domination or exploitation by those who appropriate it. On the other hand, it can also be an instrument for the liberation of the oppressed classes, since it enables - through the apprehension of this instrument - a more critical understanding of reality and, therefore, more competently guides society's transformative actions. (p. 2)

The forms of teaching this subject were culturally built from the combination between understandings about the nature of Mathematics and the goals of education by having in mind the political dimension that can lead to oppression manifestations. One must seek ways to mobilize Mathematics in order to critically favor the ability to apply concepts to real situations and the dialogical relationship between subjects involved in the educational process; therefore, there must be a process to meet the needs of all students.

It is essential fighting the exclusion mechanisms and struggling for progressive guidelines in order to seek an inclusive society / school. As long as we can stop exclusionary processes, we must also seek ways to achieve inclusion. We understand this process as fundamental when thinking about architectural adaptations, in creating laws against racism, LGBTQIphobia or femicide; as well as about the establishment of quotas for black, poor, indigenous or quilombola people; or in developing adapted didactic material, among other inclusive actions. Thus, we are only providing a temporary solution to specific exclusion cases, since we remain in an exclusionary society / school.

Based on such a perspective, we must problematize and find ways of resisting any exclusion forms resulting from innumerable patterns oftentimes socially imposed. These exclusion forms also produce the so-called "normal" and "abnormal" individuals. Therefore, the aim of the current article was to reason on cultural, normality and difference issues, as well as on practices by the School Mathematics that

⁶ We refer to a way of working with Mathematics in which teaching is centered on teacher's exposure, where the student is a mere spectator, passive and learning is mechanized, privileging the memorization and reproduction of the reasonings dictated by the didactic book and / or by the teacher.

contribute to promote exclusion in school environment based on three contexts: Special, Afro Brazilian and Indigenous People Education, and on their inherent advancements and challenges.

Understanding the inclusion and exclusion processes in Mathematics teaching

What makes them vibrate is not the repetition of identities, but the differences. It is not its value of individuation, but its collective value. (Deleuze & Guattari, 1997, p. 41)

Identity, as something concrete and independent, is actually what we are (as opposed to what we are not); thus, we can simply say "I am Brazilian", "I am black", "I am indigenous", "I am deaf". However, it does not explain much about who we are; oftentimes, it is just a simple way of saying what we are not. According to Silva (2000, p. 82), "dividing and classifying also means [...] hierarchizing. Having the privilege to classify also means to have the privilege to assign different values to groups classified as such."

The affirmation of the identity and the marking of the difference always imply the operations of including and excluding. As we have seen, saying 'what we are' also means saying 'what we are not'. Identity and difference are thus translated into statements about who belongs and who does not, who is included and who is excluded. Affirming identity means demarcating boundaries, it means making distinctions between what is inside and what is outside. (Ibidem, p.82)

Therefore, identity ends up being the links created between certain individuals, based on only one, or on some, of their features - naturalness, skin color, ethnicity or sensory condition. However, it certainly does not account for representing differences between grouped individuals or the differences making up the individual, itself. For example, being born in Brazil does not make all Brazilians etymologically identical - identity derives from "idem", which means the same. The idea of "[...] difference is conceived as an independent entity. Only, in this case, in opposition to identity, different is what the *other* is" (Silva, 2000, p. 73)

On the other hand, based on the Philosophy of Difference, the concept of difference "[...] is not a relationship between one and the other. It is simply a becoming-other" (Silva, 2000, p. 66), it "is more in the order of anomaly than abnormality: more than a deviation from the norm, difference is a lawless movement" (Silva, 2000, p. 66). Orrú (2017, p. 129) understands that "difference is nothing more than

the quality of what is different; there is no similarity in it, there is disagreement, divergence; it has its own diversity, it is inexact and, at the same time, it is the excess of greatness; there is no repetition in it.”

According to Deleuze (2000), difference is not something that diverges from the norm, something negative or exotic, or something that differs from the identical or similar. He tends to “think difference in itself and the relationship of the different with the different, regardless of representation forms that lead them to the Same and make them pass through the negative” (p. 36). He states that “the difference is not different. The diverse is given. But difference is what the data is given for. It is what data are given as diverse. The difference is not the phenomenon, but the number closest to the phenomenon” (Deleuze, 2000, p. 361).

Difference is indescribable, because the attempt of an explanation is always based on a reference, on the comparison to the identical or to the norm. That is what allows one to conceive the *other* not as exotic or strange, but as another by taking difference in itself and the other in itself to arrive at the Absolute Alterity⁷.

The inclusive society / school requires respect for the right of each person to be, and make, difference. Based on Maturana (2001), respecting means understanding that the possibility of perspectivism in face of reality makes it possible to have divergences between ways to explain experiences. Thus, it is necessary to account for emotions towards the other, we shall not deny them, as these divergences do not imply a mistake, but that reality has been taken from another perspective (Maturana, 2001).

However, our school system tends to homogenize differences in order to establish identities assumed as the normal. Therefore, it organizes, orders, hierarchizes, classifies, homogenizes, compares, analyzes, evaluates and excludes students in order to normalize and domesticate them. The current school system seeks to “prepare citizens” to reproduce the social model (Rodrigues, 2018) .

Normalizing means choosing - arbitrarily - a specific identity as the parameter against which other identities are evaluated and ranked. Normalizing means to attribute to this identity all possible positive characteristics, in relation to which the other identities can only be evaluated in a negative way. The normal identity is 'natural', desirable, unique. The strength of the normal identity is such that it is not even seen as an identity, but simply as the identity. (Silva, 2000, p. 83)

⁷ On the conception of the other and otherness from the Philosophy of Difference see: Gallo, S. (2008) *Me, the other and many others: education, otherness and the philosophy of difference*. Everyday International Congress: Dialogues on Dialogues. Niterói, RJ, Brazil.

All those who deviate from the white individual, of European descent, cisgender, without disability parameter in hegemonic Western societies, are considered “abnormal”. They are the ones who will mostly suffer from the normalizing power and are the ones more likely to experience the exclusion processes.

In order to form this normal identity, we have socially instituted several standards to determine the “right”, “adequate” and “harmonious”, and to, consequently, determine the “wrong”, “inadequate” and “disharmonious” ones. For example, we have beauty, sexuality and behavior parameters, among others. School, as society constituent, reproduces socially constituted standards, as well as creates others, such as reaching the average, adequate knowledge, alphabetic writing as indicator of knowledge, cultural standards to be respected and replicated, among others.

The School Mathematics, in its turn, also produces its own parameters to dictate the Mathematics to be taught and learned, the logic to be used, the adequate formalization, etc. These patterns are observed in regular school and in the School Mathematics; consequently, they determine that knowledge will be marginalized, that cultures will be disqualified, that forms of writing will be considered inappropriate, and that bodies and subjects will be unwanted.

Adaptation to normal identity requires subjects to accept the standards and to adapt themselves to them. Their specificities are denied and / or erased within this process, and their right to be and to make a difference is reduced. Those people – who cannot, or do not allow themselves to be normalized – are excluded and it is not different at school or in Mathematics classes. However, exclusion in school environment does not always imply physical detachment from individuals, since it is often veiled. Excluded students do not have the appropriate conditions for their full development or their differences remain denied. However, these students remain “underdeveloped” from the school education viewpoint. They get convinced that they are “abnormal”, since the normality standards they are subject to imply the feeling of not belonging.

According to Gondim & Miarka (2017), the subject “Mathematics”:

[Is] A science that shows its royalty in what it is? Their white robes seem to be stained with a practice that the eyes were taught not to see or perhaps the amount of precious ornaments that were imposed on her body. The practice of identity at the expense of difference. The classification. Set the standard. The essential structure. The essentialist structure. A practice that is criminalized when the standard becomes the only possibility, when the difference is downgraded to an ordinary plan, to a plan that can only exist as a path towards existing standards. Standard, in this sense, can be taken within a logic of identity and

Mathematics, and its learning, are shown as a maintenance mechanism at the service of a certain identity, of a certain kingdom. This is the power of identity and its repetition. A power that remains. (p. 121)

The current School Mathematics accounts for exclusion, because the individuals who cannot (or do not want to) adapt to its models and practices are excluded. This scenario is socially observed, as well as observed in the education field. One must have in mind that such an exclusion is often used as instrument of social selection.

It is important understanding that exclusion processes produced by Mathematics cannot be understood as the result from an inefficient didactic-pedagogical proposal, but as produced within the hegemonic power project scope, which imposes pre-set cultural and social standards. These European social standards are naturalized and understood as innate truths. Everything that deviates from them is devalued and understood as primitive. Imposing these identities and standards, and producing exclusion from them, are fundamental tools for the maintenance of this hegemonic project scope.

The normalization imposed by the School Mathematics accounts not only for exclusion processes, but for forming Eurocentrism. Because Mathematics encompasses knowledge linked to the natural, social and cultural European context, it establishes the logic to be followed by groups traditionally guided by other ways of thinking, such as indigenous and *quilombola* groups. The School Mathematics disregards the Mathematics produced by these groups, and others, and advocates for the universal character of this subject.

The following section addresses the Afro-Brazilian and Indigenous contexts based on Law n. 11,654 / 2008, which approaches these two very diverse ethnic and cultural groups, whose knowledge has been silenced and made invisible due to the European colonization process in Brazil.

The Afro-Brazilian and Indigenous contexts

The colonization process in Brazil left marks that can be observed and felt until present times. The arrival of Europeans in Brazil was marked by a violent exclusion process towards social organizations. Afro-Brazilians and Indians had their social and cultural organizations modified, suppressed and barred to open room for a normal identity imposed by European colonists.

Such an exclusion process is related to disqualifying the subject as a human being and its social status becomes equivalent to objects or animals. Fanon (1980) refers to them as subjected to the “treatment of non-existence”. According to Campos & Bragato (2019): “Fanon defines the coloniality of being as a treatment of non-existence, based on which subjects are inferior, subjected, dehumanized and their social panorama is destroyed, their values are ridiculed, crushed, emptied”(p. 43).

Indigenous people and Afro-Brazilians would need something to socially incorporate them to this new Portuguese logic. Education provided by the Jesuits was the way to accomplish it. The Jesuits standardized the actions and ideas at that time. This “Portuguese embodiment” comes from the fact that “[...] to be Portuguese, in the Jesuits’ conception, means to agree with the king, and, for this very reason, to necessarily agree with all the other subjects, which meant, to be Catholic” (Cressoni, 2016, p. 77).

Other attempts to erase the herein addressed cultures from the Brazilian historical and political context can be recalled, for example, the positivism that played key role in the Republic, at early 20th century. It is highlighted by the medical narrative that has imposed the indigenous and Afro-Brazilian pathology from the 18th century, which was strengthened in the 19th century and allowed the former slaves to be transformed from an object of work to an object of science, in the 20th century. Positivism crowned the most delayed abolitionism, which was mediated by an intense whitening process in the Brazilian population (Batista, 2016).

Once the normal identity to be imposed and accepted by all was chosen, the “abnormal” subject was created; it should undergo normalization processes substantiated by social instances such as education and medicine. However, normalizing indigenous people and African-Brazilians in this historical context did not mean making normalized subjects equal parts of society. The colonizer identity was sought as “the truth” to be achieved by all.

According to Skovsmose (2019), when dealing with the concept of inclusion, we must ask ourselves the following questions when we deal with the inclusion concept: what are the contexts or structures we are including people in? Who is being included? These questions are pertinent, since the initial colonization period in Brazil was marked by the acculturation of indigenous and African-Brazilian groups driven by Christian principles and the European culture.

Education was used within this process as enabling mechanism, because, according to Cressoni (2016, p. 91), “[...] acculturation and education walked together to propose a new social

learning". Furthermore, "contacts established between the Jesuits and the blacks would open space for social learning mainly based on the colonist's pedagogical vision and actions" (Cressoni, 2016, p. 91). Colonizers imposed their culture, knowledge, customs and religion to the colonized ones. Different indigenous and African-Brazilian groups had their traditional knowledge silenced, barred, annulled, modified and, somehow, extinguished.

On the other hand, African-Brazilian and indigenous peoples sought to resist the attempts of exclusion through a new social logic, since other forms of culture emerged at and resisted the initial social construction process in Brazil. However, one cannot deny the historic attempt to erase these other forms of culture by using education as the means to prioritize the European thinking.

Despite all the time passed since the colonization period, we still witness the same scenario nowadays, we find marks of an education that values European standards:

Overall, it is evident that the educational model reinforces the privilege of those who have developed an identification, a level of educational investment and the ability to incorporate and assimilate school culture (culturally white colonial and Euro-North American); thus, it denies the possibility of other identifications with other groups (indigenous and Africans) that compose the Brazilian society and its social and cultural formation (Souza, 2010, p.56).

The exclusion processes imply not acknowledging the black and indigenous cultures. On the other hand, they helped highlighting the European culture. Lack of reflections and debates on the social conditions of African-Brazilians and indigenous peoples, and the non-recognition of the struggles and contributions of these social groups to the Brazilian cultural formation are reflexes of the aforementioned process. This scenario reinforces stereotypes and prejudice, and legitimizes aggressions and racist actions.

The current education system has historically privileged the disclosure and imposition of an identity linked to certain social groups to the detriment of others. However, this framework worsens when we reason on the Brazilian context and realize that these exclusion processes affect more than 50% of the population: "according to data from the National Household Sample Survey [...] 42.7% of Brazilians declared themselves white; 46.8%, brown; 9.4%, black; and 1.1%, yellow or indigenous" (Brazilian Institute of Geography and Statistics - IBGE, 2019). According to IBGE, the black population is the sum of blacks and browns.

In order to promote echo in the school curricula those elements linked to indigenous and Afro-Brazilian cultures that have been silenced and barred for so many years, Law n. 10,639/ 2003 was introduced which added paragraphs in Law n. 9,394/ 1996 (Law of National Education Guidelines and Bases), establishing guidelines to include the theme “Afro-Brazilian History and Culture” in the national curriculum, after years of struggle by the black people movement. This law was replaced by Law n. 11,654/ 2008 due to the resistance of indigenous people. It established the addition of indigenous history and culture to the curriculum.

A legal inclusion mechanism was created to likely achieve social reparation by inserting the theme related to groups that have historically participated in this process - but that were seen as meaningless – in this educational debate. These debates help the appreciation of differences and the attempt to break the concept that there is a superior culture in our society, which should guide towards a single cultural and social organization. Knowledge about African-Brazilian and indigenous historical processes and culture can break paradigms and stereotypes; consequently, it can help accomplishing an education that avoids future racist attitudes.

In 2006, the Ministry of Education, and the now extinguished Secretariat for Continuing Education, Literacy and Diversity - dismantled by the current government - published a material entitled "Guidelines and Actions for the Education of Ethnic-Racial Relations". Institutions in charge of producing this material understood" [...] that this publication is an instrument to build an anti-racist society that privileges the school environment as fundamental space in the fight against racism and racial discrimination" (Ministry of Education, 2006, p. 14).

The following statements are observed in the aforementioned document: “it is worth remembering that the teachers’ training process must head towards all education professionals and ensure that the ones linked to exact and natural sciences must not deviate from such a process”⁸ (Ministry of Education, 2006, p. 24). The participation of exact sciences in the fight against racism is indicative of how important these curricular components are for the social inclusion of African-Brazilian and indigenous people.

⁸ The excerpts from the document are not supposed to be fully analyzed, but rather presented from the elaborated material perspectives. Such material was elaborated and presented in relation to the exact sciences context, consequently, to Mathematics.

However, we cannot forget that the way Mathematics is mobilized in regular school, and the exclusion processes generate by it, are parts of a hegemonic-power project that imposes European cultural and social standards to individuals. Gondim and Miarka (2017) emphasize that:

Mathematics with M, capital like that. The one that historians like to call Greco-Roman, European, Western, and we do not count on calling it also white. In other words, that Mathematics which, in its whiteness, shows how clean it is, dressed in its garments adorned with precious stones, a unique award and a crown with a royal, royal glow. Exactly. Queen of Sciences. (p.119)

Therefore, the School Mathematics and its norms, truths, rules, dogmas, practices, among others, excludes those who do not fit it.

[...] the Doctrine, as in a process of decantation, makes use of various instruments for selection, such as a set of pre-established contents, chosen according to the specific interests of a dominant class, arranged in a sequence judged as ideal and with a strong system of prerequisites; rules and techniques that must be memorized and operationalized in an automated way; imposition of Cartesian logic; imposition of pre-conceived and indisputable truths; a concept of linear cognitive process and with a standardized rhythm; denial and punishment of errors committed by the indoctrinated; classificatory assessment, which quantifies learning and only admits the truths already established; in addition to other instruments that, in the pursuit of normalization, discipline, classify, compare, rank, homogenize, docilize and exclude. There are great chances of reaching the highest social and economic levels, students who are able to understand, deal with, adapt, support, face and overcome these selection instruments (Rodrigues, 2017, p. 154)

It is important emphasizing that the elector almost always fits the normal-identity profile of Western hegemonic societies in this selection process. Thus, individuals, who do not fit this identity, such as indigenous people, African-Brazilians, people with disabilities and the poor, are excluded.

However, the same Mathematics that produces normalization and exclusion, is also important for individuals to resist these processes, to the point that “[...] to act as citizens in a modern society, mathematical competences are crucial” (Skovsmose, 2019, p. 21). Thus, we need to subvert this order so that Mathematics can help fighting prejudice and boosting inclusive process.

Thus, based on Law 11.645 / 2008, Mathematics teaching can produce concepts connected to the social and personal meanings of more students. It can open new paths for reasoning about how the School Mathematics must respect and value differences (Skovsmose, 2019). Thus, Mathematics would not be treated (or used) as a tool for social segregation and submission, but as the way to trigger ethnic and racial debates to help the appreciation of and respect to differences in the classroom.

The next section presents another context often brought up when the Inclusive Education topic is at the table.

The Special Education context

The assistance to students with disabilities in Brazil began in the 19th century after the creation of boarding schools inspired by the European model. The Imperial Institute for Blind Children⁹ was created by D. Pedro II, in Rio de Janeiro. Similar institutions were created in the country to address each deficiency, in separate. This was the only educational assistance available for this population. Brazilian educational public policies started being developed in the late 1950s (Rosa, 2013).

The internship regime lasted until the 1980s. According to Rosa (2017), some mothers reported to be “condemned” by close people who claimed they had abandoned their children in an institution, because

Historically, boarding schools were the symbols of abandonment, mainly in Europe. Badinter (1985) reports that the search for boarding schools by French bourgeois families had two interests: the search for good education and a morally honorable way of getting rid of children. This last idea, perhaps, is one that remains in common sense and is so difficult to disentangle from. Judgments arise, often cruel, mainly on the part of those who do not realize that there is a third interest in question: the distance between the homes and the specialized educational institution, which at one time was the only one that did not discriminate against students with disabilities and that financially, was a possible option. (p. 184)

The segregation of people with disabilities in their homes, in specialized institutions or schools, with separate rooms exclusive for these students, has lasted for many years.

The Law of Guidelines and Bases of National Education, firstly enforced in 1961, and modified in 1971, was a possible change in this concept. Both publications recommended the inclusion of students with disabilities in regular classes¹⁰ based on an integration perspective. It meant a unilateral effort by students who had to adapt to what was already set at school and in society.

⁹ Currently, this institution remains in place, it is called *Instituto Benjamin Constant* and it no longer offers the internship regime, only educational assistance for students with visual impairment - until the ninth grade -, although it also provides medical services and courses, in general.

Currently, this institution remains in place, it is called *Instituto Benjamin Constant* and it no longer offers the internship regime, only educational assistance for students with visual impairment - until the ninth grade -, although it also provides medical services and courses, in general.

¹⁰ We use this word without a derogatory connotation. The expressions ‘regular class’, ‘regular school’ or ‘regular education system / network’ are commonly used, including in the laws that

This model was firstly questioned in the early 1990s, after the country signed international documents and committed to *Education for All* and put the new Law of Guidelines and Bases of National Education in force. This law is still in force nowadays and underwent additions and modifications. The inclusive education policy aims at valuing heterogeneity and singularities by emphasizing the respect for differences; However, it still resists movements advocating for the concept that students with disabilities should adapt to the environment or, still, to the ones that defend their segregation.

At the time the first version of the National Special Education Policy was published, it also had an integration profile, based on the medical model perspective, “[...] based on the principle of normalization, focusing on the clinical model of disability which attributes a incapacitating character to the physical, intellectual or sensory features of students, which impairs their educational and social inclusion” (Ministério da Educação, 2015, p. 9). Accordingly, a “cure” was sought for injuries and limitations, so that people with disabilities could be socially accepted - the oralization of deaf people to adapt to society is an example of it.

Rosa (2017) addresses the narratives that discrimination by society is the fear of family members and people with disabilities. The discriminatory act is noticeable in schools that deny a place for students with disabilities, among others; in the eyes of their teachers, these students must be invisible, veiled, camouflaged:

The invisibility of people with disabilities in common social spaces and the belief in their incapacity [...], associated with ignorance - ignorance - about their rights and human rights in general, are at the root of discriminatory attitudes and procedures. Discrimination against individuals and groups in subordinate social conditions is so frequent that, historically, it has become necessary publishing legal documents dealing with this topic [...] (Fávero, Ferreira, Ireland & Barreiros, 2009, p. 28- 29).

The social construction of the disability can corroborate with the manifestation of discriminatory behaviors, since, in some situations, there is association between disability and inefficiency, or the understanding that all sensory limitations are also cognitive, which is not true.

According to Ballard (1995), it is easy excluding students who are different, which is often justified by the belief and pretext that it is better for them. Thus, difference is something negative and the different

refer to inclusion. Our intention is not to say that the other schools are irregular, because they are not, it is just an indication to differentiate when we talk about non-specialized schools.

one is the subject that needs to be corrected or normalized. Therefore, “disability is always an invention with an ideal of normality as parameter often imposed by force” (Marcone, 2015, p. 47).

School environment and also Mathematics as subject, account for reproducing patterns, classifying and labelling. Such labels enhance the exclusion process. Mathematics, “with capital M”, is formalistic and rigorous in its structure: theorems, axioms, among others (Gondim & Miarka, 2017), must be reconfigured, as well as it is necessary reasoning on the teachers’ practices and on how subject contents are taught. We must problematize the overly visual way Mathematics is approached in the classroom, because if a given student is blind, for example, the way such concepts are introduced makes the difference in his/her learning process. The way of introducing this subject must be changed into perceptual actions about a whole range of mathematical object and / or situation representations that take into account the social, cultural and political context students live in.

Different representations and / or methodologies aim at the meaningful learning without the exclusion of students who have a hard time learning Mathematics. It does not mean that these students have a disability, but that they need to go through the experimentation process¹¹, which gives “[...] Mathematics a practical character, a kind of usefulness or the application of a 'mathematical theory' in a 'practical situation'. From theory to practice. One move. An experience to validate / legitimize a theoretical model”. (Clareto, Silva & Clemente, 2013, p. 7)

Teachers and school community, as a whole, must be open to differences, since classrooms are heterogeneous. We must understand that not only student with disabilities, African-Brazilian or indigenous people are different, but each student, teacher, person has its uniqueness. Teachers should not think about a different classroom or about different didactic resources only when it is in charge of a student with disability; it is necessary to have “[...] the awareness that all students learn by relating the classroom to their life experiences” (Unesco, 2020, p. 18).

Although teachers’ training focused on inclusion issues has increased over the years, “[...] skewed views about some students as disabled or unable to learn mean that teachers may have a hard time seeing

¹¹ In this article, experimentation or experience is addressed in the sense of what happens to us, what touches us. “Not what goes on, not what happens, or what touches. Many things happen every day, but at the same time, almost nothing happens to us” (Larrosa, 2002, p. 21)

· In this article, experimentation or experience is addressed in the sense of what happens to us, what touches us. “Not what goes on, not what happens, or what touches. Many things happen every day, but at the same time, almost nothing happens to us” (Larrosa, 2002, p. 21)

that the ability to learn from each other has no limits” (Unesco, 2020, p. 18). There is the need of stripping off preconceptions, respecting differences and, above all, of understanding the other as a singular being.

“ALL, WITHOUT EXCEPTION”: singularities should be seen as opportunity, rather than as problem

We will not finish this article by exhausting the subject, but with a reflection, since there is still a lot to discuss.

The world is committed to inclusive education because it is the foundation of a good quality educational system that allows all children, young people and adults to learn and realize their potential. Gender, age, residency, poverty, disability, ethnicity, indigeneity, language, religion, migration or displacement status, sexual orientation or expression of gender identity, incarceration, beliefs and attitudes should not be used as basis for discriminating someone in the school participation and experience context. (UNESCO, 2020, p. 22)

An Education that does not need to be defined should have no room for standards and frameworks, judgments, discrimination and exclusion. Inclusion is a reflection process, a call to perceive the other in its uniqueness. This singularity should be seen as opportunity to change personal and professional beliefs and practices.

We perceive exclusion processes through attempts to erase differences to achieve a “normal” identity at historical, social, political and cultural spheres. History and the legislation had briefly shown a time of individual whitening by imposing the European cultural and social standards for this purpose. There was also a time when the medical discourse prevailed for indigenous and African-Brazilian peoples, as well as for people with disabilities. Thus, they were defined, segregated and, in some cases, killed. Both indigenous and African-Brazilians were enslaved.

The legislation sought way to “repair” exclusion processes or to boost the inclusion process. However, it must be critically assessed and problematized, so that this topic is not approached in a cartoonish, generic and / or reductionist way, since it encompasses subjects such “African culture”, “Brazilian indigenous people”, “the creation / adaptation of unique didactic material for students with disabilities”. Similar to the fact that several indigenous and African-Brazilian cultures cannot be unified

in this way, there is no homogeneity among students with disabilities. Difference is a reality, so, addressing these cultures, or subjects, as similar, is also a matter of building an identity.

If we look at the school environment and Mathematics, we can see exclusion processes composed of certain knowledge and cultures, which are approached as unique references: the white, European, cisgender person without disabilities, among others. Homogeneity prevails in Mathematics' classes. One single lesson is prepared, lectures are always the same, normality is imposed, differences are neglected, yellowish paper sheets are reproduced and there is the illusion that all students are learning. There is a cruel process to deny or erase students' skills, since many students adapt themselves to the standard in order to be part of the school system. There are the ones who cannot, or refuse to, be formatted by the standardization process; they are excluded, although they remain, in most cases, "inserted" in the school environment.

Currently, exclusion processes in classrooms are in the mainstream, because "The COVID-19 pandemic exposed, and further deepened, these inequalities and the fragility of our society. [...] The social and digital differences put the most vulnerable in a position in which they face the risk of losing the chance of learning or of dropping out of school" (UNESCO, 2020, p. 5). All these differences generate new and major challenges for education; therefore, they must be taken under consideration at all levels.

Acknowledgment

We would like to thank professors Dr. Filipe Santos Fernandes, from Federal University of Minas Gerais, and Dr. Victor Giraldo, from Federal University of Rio de Janeiro, for their careful reading and important suggestions to the text. It is important to note that this study was financed in part by the Coordenação de Aperfeiçoamento de Pessoal de Nível Superior - Brasil (CAPES) - Finance Code 001 and by the Universidade Federal de Mato Grosso do Sul, according to Portaria UFMS 141/ 2020.

References

Ballard, K. (1995). Inclusion, paradigms, power and participation. In: C. Clark, A. Dyson, & A. Millward (Eds) *Towards Inclusive Schools?* (pp. 1-14). New York, NY: Teachers College Press.

- Batista, V. M. (2016). O positivismo como cultura. *Passagens. Revista Internacional de História Política e Cultura Jurídica*, 8(2), pp. 293-307.
- Camargo, E. A., & Passaro, A. C. (2006). A visão de pais e profissionais sobre a inclusão escolar de pessoas com deficiência mental. In: L. A. Martins, J. Pires, G. N. Pires, & F. R. Melo (Eds) *Inclusão: Compartilhando Saberes*. (pp. 122-138). Rio de Janeiro: Vozes.
- Camargo, E. P. (2017). Inclusão social, educação inclusiva e educação especial: enlances e desenlaces. *Revista Ciências e Educação (Bauru)*, 23(1), pp. 1-6.
- Campos, A. C. V., & Bragato, F. F. (2019). A descolonialidade no combate à discriminação das mulheres. *Revista Chilena de Derecho y Ciencia Política*, 10(2), 35-52.
- Clareto, S. M., Silva, A. A., & Clemente, J. C. (2013). De triângulo a bola: uma Matemática menor e a sala de aula. *XI Encontro Nacional de Educação Matemática* (pp. 1-13). Curitiba: PUCPR.
- Cressoni, F. E. (2016). Missão, ensino e escravidão: pedagogia jesuítica nas obras de Jorge Benci e Antonil. In: M. V. Fonseca, & S. A. Barros (Eds) *A história da educação dos negros no Brasil* (pp. 73-94). Niterói: EdUFF.
- Deleuze, G. (2000). *Diferença e repetição*. (L. O. Machado, Trad.) Lisboa: Relógio D'água.
- Deleuze, G., & Guattari, F. (1994). *Mil platôs: capitalismo e esquizofrenia* (Vol. 1). (A. G. Costa, Trad.) São Paulo: Editora 34.
- Deleuze, G., & Guattari, F. (1997). *Mil platôs* (Vol. 5). São Paulo: Editora 34.
- Fávero, O., Ferreira, W., Ireland, T., & Barreiros, D. (2009). *Tornar a educação inclusiva*. Brasília: Unesco.
- Faustino, A. C. (2018). *"Como você chegou a esse resultado?": o diálogo nas aulas de Matemática dos anos iniciais do Ensino Fundamental*. Tese (Doutorado em Educação Matemática). Rio Claro, SP: Universidade Estadual Paulista "Júlio de Mesquita Filho".
- Foucault, M. (2005). *Vigiar e punir: nascimento da prisão* (30 ed.). (R. Ramallete, Trad.) Petrópolis: Vozes.
- Gondim, D. M., & Miarka, R. (2017). A Constituição de um Plano de Intensidades: aprender e matemática e diferença e escrita-avalanche e.. *Perspectivas da Educação Matemática*, 10(22), pp. 115-131.
- Instituto Brasileiro de Geografia e Estatística - IBGE (2019). Pesquisa Nacional por Amostra de Domicílios (PNAD) 2019. Disponível em: <https://educa.ibge.gov.br/jovens/conheca-o-brasil/populacao/18319-cor-ou-raca.html>. Acesso em: 28 de jul. 2020.
- Larrosa, J. (2002). Notas sobre a experiência e o saber de experiência. *Revista Brasileira de Educação*(19), pp. 20-28.

- Lei nº 10.639, de 09 de janeiro de 2003. Altera a Lei no 9.394, de 20 de dezembro de 1996, que estabelece as diretrizes e bases da educação nacional, para incluir no currículo oficial da Rede de Ensino a obrigatoriedade da temática "História e Cultura Afro-Brasileira", e dá outras providências. *Disponível em:*
http://www.planalto.gov.br/ccivil_03/Leis/2003/L10.639.htm, acesso em 28 de jul. 2020.
- Lei nº 11.645, de 10 de março de 2008. Altera a Lei no 9.394, de 20 de dezembro de 1996, modificada pela Lei no 10.639, de 9 de janeiro de 2003, que estabelece as diretrizes e bases da educação nacional, para incluir no currículo oficial da rede de ensino a obrigatoriedade da temática "História e Cultura Afro-Brasileira e Indígena". *Disponível em:* http://www.planalto.gov.br/ccivil_03/_Ato2007-2010/2008/Lei/L11645.htm. Acesso em 28 de jul. 2020.
- Lei nº 9.394, de 20 de dezembro de 1996. Estabelece as diretrizes e bases da educação nacional. *Disponível em:* http://www.planalto.gov.br/ccivil_03/leis/l9394.htm. Acesso em: 28 de jul. 2020.
- Marcone, R. (2015). *Deficiencialismo: a invenção da deficiência pela normalidade*. . Tese (Doutorado em Educação Matemática). Rio Claro, SP: Universidade Estadual Paulista "Júlio de Mesquita Filho".
- Maturana, H. R. (2001). *Cognição, ciência e vida cotidiana*. Belo Horizonte: UFMG.
- Mbembe, A. (2014). *Crítica da Razão Negra* (1 ed.). (M. Lança, Trad.) Lisboa: Antígona.
- Ministério da Educação. (2006). *Orientações e Ações para Educação das Relações Étnico-Raciais*. Brasília: SECAD.
- Ministério da Educação. (2015). *Orientações para implementação da política de educação especial na perspectiva da educação inclusiva*. Disponível em:
http://portal.mec.gov.br/index.php?option=com_docman&view=download&alias=17237-secadi-documento-subsidiario-2015&Itemid=30192. Acesso em: 28 jul. 2020.
- Orrú, S. E. (2017). *Re-inventar da inclusão: os desafios da diferença no processo de ensinar e aprender*. Petrópolis, RJ: Vozes.
- Piovesan, S. B., & Zanardini, J. B. (2014). *O Ensino e Aprendizagem da Matemática por Meio da Metodologia de Resolução de Problemas: Algumas Considerações*. Disponível em:
<http://www.gestaoescolar.diaadia.pr.gov.br/arquivos/File/producoes_pde/artigo_sucileiva_baldissera_piovesan.pdf> Acesso em 26 out. 2020.
- Rodrigues, T. D. (2017). *Práticas de Exclusão em Ambiente Escolar*. São Paulo: Cultura Acadêmica.
- Rodrigues, T. D. (2018). Contribuições da Etnomatemática para uma Educação Inclusiva. *VI Congresso Internacional de Etnomatemática: saberes, diversidade e paz*, (pp. 1-12). Medellín.

- Rosa, F. M. (2013). *Professores de Matemática e a Educação Inclusiva: análises de memoriais de formação*. Dissertação (Mestrado em Educação Matemática). Rio Claro, SP: Universidade Estadual Paulista “Júlio de Mesquita Filho”.
- Rosa, F. M. (2017). *Histórias de vida de alunos com deficiência visual e de suas mães: um estudo em educação matemática inclusiva*. Tese (Doutorado em Educação Matemática). Rio Claro, SP: Universidade Estadual Paulista “Júlio de Mesquita Filho”.
- Schubring, G. (1999). O primeiro Movimento Internacional de Reforma Curricular em Matemática e o Papel da Alemanha: Um Estudo de Caso na Transição e Conceitos. *Zetetiké*, 7(11), pp. 29-50.
- Silva, T. T. (2000). A produção social da identidade e da diferença. In: T. T. Silva (Ed) *Identidade e diferença: a perspectiva dos estudos culturais*. (pp. 73-102). Petrópolis: Vozes.
- Skovsmose, O. (2019). Inclusões, encontros e cenários. *Educação Matemática em Revista*, 24(64), pp. 16-32.
- Sousa, R. S. (2010). Ações Afirmativas e a Lei 10.639: Elementos para outra cultura educacional. In: M. A. Laila, & M. L. Silveira (Eds) *A Universidade e a formação para o Ensino de História e Cultura Africana e Indígena*. (1 ed., pp. 50-75). São Paulo: Selo Negro.
- Unesco (1990). *Declaração mundial sobre Educação para todos: satisfação das necessidades básicas de aprendizagem*. Jomtien.
- Unesco (1994). *Declaração de Salamanca e Linha de Ação sobre necessidades Educativas Especiais*. Salamanca.
- Unesco (2005). *Guidelines for inclusion: Ensuring access to Education for All*. .
- Unesco (2020). *Global Education Monitoring Report Summary 2020: Inclusion and education: all means all*. França.