

The Phenomenon of Learning Difficulties and the Color/Race Issue: Indicators for the Discussion about an Inclusive Education Based on Neuropsychopedagogical Evidence

Vitor da Silva Loureiro¹ , João Paulo Martins Campelo¹ ,
Cláudia Inês Pelegrini de Oliveira Abreu^{1,2} , Luciana de Oliveira Matos^{1,2} ,
Fabrício Bruno Cardoso¹ 

¹Laboratory of Educational Innovations and Neuropsychopedagogical Studies, CENSUPEG, Joinville, Brazil

²Postgraduate Program in Public Policies and Local Development, School of Sciences of Santa Casa de Misericórdia, EMESCAM, Vitória, Brazil

Email: fabricao@censupeg.com.br

How to cite this paper: da Silva Loureiro, V., Campelo, J. P. M., de Oliveira Abreu, C. I. P., de Oliveira Matos, L., & Cardoso, F. B. (2022). The Phenomenon of Learning Difficulties and the Color/Race Issue: Indicators for the Discussion about an Inclusive Education Based on Neuropsychopedagogical Evidence. *Open Journal of Social Sciences*, 10, 145-155.

<https://doi.org/10.4236/jss.2022.1013012>

Received: October 14, 2022

Accepted: December 23, 2022

Published: December 26, 2022

Copyright © 2022 by author(s) and Scientific Research Publishing Inc.

This work is licensed under the Creative Commons Attribution International License (CC BY 4.0).

<http://creativecommons.org/licenses/by/4.0/>



Open Access

Abstract

Introduction: The Brazilian school scenario in which basic education stands out, the initial and fundamental stage of the subject's schooling, has been the object of study and debate for decades, surveys and statistical research demonstrate the abysses in the different education networks in the country, as well as the various problems in which the school and its community are involved, such as: age and grade distortion, lack of access to quality education in peripheral regions, themes about violence, racism, marginality, the devaluation of the professional of the education, school dropout rates and many others. Not unlike other education phenomena, there are the learning difficulties and socio-racial issues that drag on in the country's history, which make up this universe of embarrassments and obstacles for a quality, egalitarian and inclusive education. **Objective:** Based on the comments, this study aimed to evaluate the existence of a possible association between factors related to race and learning difficulties in elementary school students in Brazil. **Method:** The protocols used were approved by the UFRJ ethics committee (opinion No. 517,483). The children who participated in this research participated in a meeting, with the presence of their guardians, to become aware of all the procedures, taking into account bioethical principles. After clarification and free to choose to participate or not in the research, voluntarily, each person responsible signed the Free and Informed Consent Term. **Results:** Our results show that 1884 students were classified as having learning difficulties, 53.98% (n = 1017) were male and 46.01% (n = 867) were female, and

2302 children without learning difficulties, 52.47% (n = 1208) of the children were male and 47.52% (n = 1094) were female. When trying to establish a direct relationship between the variables sex and school performance, it can be seen that for an $r = 0.453$, $p < 0.05$ was obtained. Despite being significant, as the value of r is far from “1” or “-1”, this association can be considered weak. **Conclusions:** We conclude that, even not being directly related to the phenomenon of difficulties, racism and exclusion of the black population, affects students of basic education too much, considering that vulnerability unfolds in so many others. Factors such as insecurity, lack of food, lack of access to quality schools, negative socio-emotional factors, which interfere in the biopsychosocial development of these students. So, as evidenced earlier, the curricular problem, in which the school was based on student failure, reproducing even more the stresses and problems of social vulnerability that sadly have color in Brazilian territory, and learning difficulties end up being associated, this points us to the urgency of forceful measures to prevent risk factors and to clearly confront this shameful and historic social stigma that afflicts most of our people and our children in the schooling phase.

Keywords

School, Race, Learning Difficulties, Social Inequality, Elementary School

1. Introduction

The Brazilian school scenario in which basic education stands out, the initial and fundamental stage of the subject's schooling, has been the object of study and debate for decades, surveys and statistical research demonstrate the abysses in the different education networks in the country, as well as the various problems in which the school and its community are involved, such as: age and grade distortion, lack of access to quality education in peripheral regions, themes about violence, racism, marginality, the devaluation of the professional education, school dropout rates and many others. Not unlike the other phenomena of education, there are learning difficulties and socio-racial issues that drag on in the country's history, which make up this universe of embarrassments and obstacles for a quality, egalitarian and inclusive education.

The concept of Learning Difficulties or Learning Difficulties has a range of interpretations, which aim to elucidate or point to scenarios that are considered atypical within the context of schooling, that is, the term, despite being broad, is often used to demonstrate that the subject does not follow income expectations when compared to their peers (Barbosa, 2015).

Thus, learning difficulties, according to Caixeta, Melo, Junior, & Pereira (2022), is a general term that describes deficits in the assimilation and development of competencies related to curricular components, without that causes are evidenced. Unlike when we use the term neurodevelopmental disorders and/or specific learning disorders, which indicate neurobiological disorder factors that

indirectly or directly affect learning (APA, 2014).

We can understand that learning difficulties present themselves as a complex phenomenon, considering that they correspond to the impairment of school skills, more strongly in writing, reading and mathematics and some of their characteristics can resemble those of specific learning disorders. Even so, it is worth noting what is defended by Rotta, Ohlweiler and Riesgo (2015), who, in a study prior to the pandemic and an emergency remote teaching model, presented a rate of 40% of Brazilian basic education students who, in some phase of their school lives, would present certain learning difficulties. Therefore, learning difficulties are transitory, and may appear in a school year or not and result from multiple factors extrinsic to the subject, such as: mistakes in the teaching model, emotional, socioeconomic issues, while disorders are permanent and may have lower risk rate, when identified early and receive the appropriate interventions (Relvas, 2020).

Research such as that of Carrara (2016) and Aro, Eklund, Eloranta, Ahonen, & Rescorla (2022) identified that poverty and social vulnerability are associated with learning difficulties and school failure of Brazilian students. Emphasizing what Lemos (2021) proposes, analyzing that in recent years we have witnessed the worsening of extreme poverty in Brazil and studies confirm that the majority of the population affected by this social tension is composed of black or brown people, accentuating the historical debt, ethics and morals of the country with this population.

Dialogue with the framework of these problems, de Carvalho-Silva, Batista and Alves (2014) analyzed the relationship of families living in areas of high social vulnerability with the school, considering the role of mothers of these families, who even in a situation of socioeconomic risk, made efforts to monitor and educate their children. In view of the methodological approach proposed by the authors, who, through interviews, investigated the sample composed of five self-identified Northeastern mothers, aged between 25 and 42 years who, with the exception of two, declared themselves to be black. The text dialogues and corroborates with this research, given that, in addition to confronting the idea that families living in peripheral and vulnerable areas, commonly present a distance from school, it also points to what several studies mention about the population, black or brown, which is the numerical majority in these territories.

The tensions that unfold over race relations and access to education in Brazil are widely discussed in academia. Among them, there is the theme of school dropout, which and with regard to the Afro-descendant population, this dropout is also supported by racism, its stigmas and stereotypes, produced at school. Reproducing a hostile school environment and based on the failure of the learner, evidencing the absence of the State in forceful actions against racism and in favor of the schooling of the black population (Aquino et al., 2019).

The study by Ceratti (2008) considers that in addition to the various social, economic and public health problems that permeate school dropout, its biggest motivator is the consolidated social inequality and the absence of assertive pub-

lic educational policies in the field of education. The school, which should be a democratic, inclusive environment for the development of formal knowledge, has been placed as a space for exclusion. According to the author, among the motivating forces for school dropout, there are learning difficulties and the school model antagonistic to the integral development of its subjects (Ceratti, 2008).

In order to better understand this phenomenon, it is worth reading the report that summarizes the 2020 School Census and published on January 29, 2021, on the Federal Government website (Cruz & Monteiro, 2021), under the following title: “Basic Education had 47.3 million enrollments in 2020”. In summary, the analysis of the numbers shown in the text, much more than an advance, clearly shows the hardships of education that have worsened in the context of the health, social and economic crisis resulting from the Covid-19 pandemic. According to the report, in 2020, there was a decrease in enrollments of 1.2% compared to 2019, corresponding to more than half a million enrollments, on the other hand, in the high school phase the numbers increased by 1.1%, contrary to the drop in previous years, however, the index is very timid due to the decreasing curve previously presented. In this sense, the analysis of the graphs released by INEP (Cruz & Monteiro, 2021), express the decreases in enrollments in the initial years of elementary school, indicating that the numbers decrease even more in the final years, regardless of the administrative dependencies (public or private).

Still in this discussion about the numbers presented by INEP, it can be seen that students declared as black in school enrollment occupy the highest percentiles in the teaching model of the EJA—Education for Youth and Adults, while the declared white population does not even reach the half of these numbers, configured as follows: 72% black students and 26.3% white students. Remembering that the EJA modality is intended for people who have an age/grade distortion, who are behind according to the age groups included in each school cycle.

Not least, the bulletin *Aprendizagem em Foco*, in its number 37, brings the article: “Evasion is still one of the biggest challenges in high school”, which discusses studies such as the report “Education at a Glance 2017”, developed by OECD—Organization for Economic Cooperation and Development, which reveals some nuances of school dropout, because even in the face of the universalization of primary education and the expansion of vacancies for admission to secondary education, aiming at the universalization of basic education. In 2017, 40% of the Brazilian population did not have a high school education, a rate much higher than the average of the other members of the Organization who had the 16% percentile. Furthermore, when listing the causes of school dropout, the article uses data from other analyzed studies that, among the factors linked to the school context, indicate learning difficulties as the first motivator, followed by the lack of meaning of the curriculum, low teaching quality, a hostile climate in relationships within the school, and the negative perception of young people in relation to education (Instituto Unibanco, 2017).

Gama and Ferracioli (2019) support the idea that the lack of knowledge about learning difficulties and neurodevelopmental disorders, on the part of educators,

contributes to the construction of myths, or “neuromyths”, in the school environment (Hughes, Sullivan, & Gilmore, 2020). Even so, the teacher, supported by the learning theories inherent to his training, by the pedagogical practice and in the relationship with his students, is sometimes the first to perceive the indicators, even if, in most cases, he is unaware of the neurobiological conditions, of learning, the causes of learning difficulties or the neurofunctional aspects of neurodevelopmental disorders.

As a result of the above scenario, in which data can be seen that denounce factors such as age and grade distortion, exclusion, vulnerability and school dropout, aimed at the black and/or brown population. The following question was raised: would there be any association between the color/race factor and learning difficulties in basic education?

Considering that, in advance, documents such as the LDB—Law of guidelines and bases of national education (Carneiro, Dall’Acqua, & Caramori, 2018), advocates the social role of the school and the relevance of elementary education in the process of school, work and subject’s practices. It is noticed that the demands of education are numerous, mirroring and multiplying the models of contemporary social problems. Therefore, broad and assertive discussions are necessary, as well as contributions from translational research, with adherence to the theme of education and the needs of practices that corroborate a new school paradigm, no longer focused on student failure, but on their potential, promoting an inclusive, anti-racist environment at school, under the understanding that every human being is capable of learning.

Therefore, this study seeks to cooperate with research in basic education, on an analysis of the phenomenon of learning difficulties and ethnic and racial relations at school, in view of all the uncertainties that surround this reality and the damage caused to the Throughout the life of these students who have difficulties in learning, we assume the possibilities of contributions from Neuropsychopedagogy, within the scope established by its theorists and official documents of SBNPp—Brazilian Society of Neuropsychopedagogy, giving it a transdisciplinary character, which encompasses in a dialogic way the knowledge of the theories of learning in a cognitivist bias, the approaches of human development and the discoveries of neurosciences applied to education. Therefore, its construction and approach has as its object of study the functioning of the nervous system and learning, with a view to the rehabilitation of the subject in educational, emotional, social aspects and the integration of all learners (Munck, Cardoso, & Loureiro, 2021).

Based on the comments, this study aimed to evaluate the existence of a possible association between factors related to race and learning difficulties in elementary school students in Brazil.

2. Methodology

2.1. Ethical Aspects

The protocols used were approved by the UFRJ ethics committee (opinion No.

517,483). The children who participated in this research participated in a meeting, with the presence of their guardians, to become aware of all the procedures, taking into account bioethical principles. After the clarifications and free to choose to participate or not in the research, voluntarily, each person responsible signed the Free and Informed Consent Term.

All children participating in this study, experimental and controls, with or without learning difficulties, had access to the proposed activities and were in no way deprived of the activities relevant to the study, as recommended by the ethics committee, and could even cancel their shares at any time.

2.2. Study Universe

The universe of the present study consisted of 4186 children aged between 6 and 8 years (± 7.23), of both sexes (Girls = 1981; Boys = 2203), from the city of São Fidélis/RJ. Subjects with no complaints of visual or hearing acuity, no history of language or speech disorders, no use of neuropsychiatric medications, and no complaints of behavioral changes were considered as inclusion criteria. Subjects who did not meet the inclusion criteria were excluded. The students were selected based on their good academic performance in reading, writing and mathematics and without any complaints of learning or visual and hearing impairment, with behavioral changes or using neuropsychiatric drugs. Such aspects were verified by the teachers in the classroom and through the students' health records and school records.

2.3. Assessment Procedures

With the objective of identifying the specific characteristics of each child, a sociodemographic questionnaire was prepared, composed of 15 closed questions about physical, nutritional, family, social, sports characteristics and personal perception about the ND itself. When the sociodemographic questionnaire was applied, due to the age of the sample being incipient, in all classrooms there were students with difficulties in filling it out, and it was up to the researchers to guide and explain the doubts about the questions and activities.

To identify the children's school performance, we used the assessment itself and the Bulletin Report by Class/Discipline, prepared by the teachers of the respective classes, according to the criteria explained below. The Municipal Department of Education uses the parameter called Teaching by Activity as an indicator of school performance. The referred criterion of the SME does not use numerical grades, but reports of the performance in the activities, being classified in: Not Constructed (NC) referring to children with unsatisfactory school performance, and Under Construction (EC), referring to children with satisfactory school, and at the end of the school year, the closing was carried out with the EC classification, for students who did not reach full development and Constructed (C), for students who developed and performed school activities proficiently.

3. Results

Our results show that 1884 students were classified as having learning difficulties, 53.98% (n = 1017) were male and 46.01% (n = 867) were female, and 2,302 children without learning difficulties, being 52.47% (n = 1208) of the children were male and 47.52% (n = 1094) were female. When trying to establish a direct relationship between the variables sex and school performance, it can be seen that for an $r = 0.453$, $p < 0.05$ was obtained. Despite being significant, as the value of r is far from “1” or “-1”, this association can be considered weak.

Regarding the socioeconomic data of the 1884 children with learning difficulties, it can be seen that 11.00% (n = 226) belonged to class E; 6.26% (n = 118) belonged to class D; 17.25% (n = 325) belonged to class C; 44.42% (n = 837) belonged to class B and 20.06% (n = 378) belonged to class A. In relation to children without learning difficulties, 8.81% (n = 203) were belonging to class E; 17.68% (n = 407) belonged to class D; 30.49% (n = 702) belonged to Class C; 26.71% (n = 615) belonged to class B and 16.29% belonged to class A. To observe a possible association between socioeconomic level and a direct relationship with the situation of learning competence (children with and without learning difficulties), the Logistic Regression statistic was used, considering that socioeconomic level can be a predictive factor for learning difficulties, which was not significant because a $p > 0.05$ was revealed.

When evaluated in relation to ethnicity (color), we first have the following scenario represented in **Table 1**, in which the sample subjects are classified by color, gender, with learning difficulties and without learning difficulties.

By establishing a statistical correlation between the child’s ethnicity and the classification of their academic performance, a value of $r = 0.508$ and $p < 0.05$ was obtained in a unique way for the mixed race, which, despite being significant, due to the “ r ” value, this correlation can be considered weak, which is corroborated by the degree of intercorrelation between ethnicities and whether or not the child has learning difficulties through the SSA (Similarity Structure Analysis), which revealed a $p > 0.05$ for all possible subgroups possibilities of both analyzed data sets.

Table 1. Ethnic classification of groups.

Breeds	With Learning Difficulties		Without Learning Difficulties	
	Girls	Boys	Girls	Boys
Yellow	-	-	-	-
White	377 (37.06%)	373 (43.02%)	444 (36.75%)	438 (40.03%)
Indigenous	63 (6.19%)	32 (3.69%)	84 (6.95%)	52 (4.75%)
Brown-skinned	492 (48.37%)	392 (45.21%)	593 (49.08%)	532 (48.62%)
Black	85 (8.35%)	70 (8.07%)	87 (7.20%)	72 (6.58%)
Total	1884		2302	

Source: (Elaborated by the authors).

Table 2. Ethnic profile of the sample considering blacks and Black and Brown-skinned in a single group.

Breeds	With Learning Difficulties		Without Learning Difficulties	
	Girls	Boys	Girls	Boys
White	377	373	444	438
Indigenous	63	32	84	52
Black and Brown-skinned	577	462	680	604

Source: (Elaborated by the authors).

In order to trace the ethnic profile of those surveyed, we present the following graph, which, a priori, establishes the white population as the majority of students in 48% of the sample.

However, when we consider that this study deals with learning difficulties and possible relationships with the exclusions experienced by the black population in Brazil, given that sometimes the records of color are expanded under terms such as pardo, in order to allow a better reading of the analysis, the researchers chose to include blacks and browns in a single group, as shown in **Table 2**.

When comparing the indices, the black population has the largest number of subjects in the sample and what can be suggested, which consequently are the ones with the highest proportion in the indices of learning difficulties. Our results are consistent with American studies that report that black students are disproportionately classified by schools as having a disability.

Therefore, we can infer that the evidence of correlation between learning difficulties and ethnicity is insipid. However, they are not insignificant, since the data from this study corroborate the other studies mentioned in relation to the discussion about the black population as a demographically numerical majority, however, the most exposed to socioeconomic vulnerability and consequently with less access to quality curricula.

Thus, the ethnic disparities in Brazil are portrayed and how timid the policies implemented so far are in a historical context in which, after 133 years of abolitionism, the marks of this shameful construction of the country at the cost of lives and, in this case, the enslaved, marginalized, annulled and forgotten black lives are daily imprinted in the most diverse social environments and at school.

4. Discussion

In its initial phase, the study by [Cardoso et al. \(2021\)](#) showed that factors such as gender, socio-economic level and the level of education of parents or caregivers, are influencers of low proportion and relevance in relation to learners with learning difficulties, suggesting that the issues inherent to the school history worked in the early years of elementary school are more relevant indicators, that is, the quality of the education offered.

However, in this second phase, when we aimed to understand possible rela-

tionships between learning difficulties and ethnic-social tensions in which the black population is exposed, the results allow us to conclude that, according to the studies presented here, the black population measures the majority of Brazilian citizens, thus, in proportional numbers, the majority in the survey of this study.

A fact that demands greater attention and study is the percentage predominance of learning difficulties in relation to gender in the black population, since, while the index related to girls comprises 11% with regard to the total sample and 25% of children with learning difficulties, boys make up 14% of the 4186 surveyed and 31% of the 1884 students with difficulties. This index remains high, even when adding the white and yellow populations with learning difficulties, which, corresponding to the total of the research universe, account for 11% for boys and 10% for girls, corresponding to the scenario of those with learning difficulties, boys reach 23% and girls 21% (Morgan, 2020).

5. Conclusion

Therefore, from the results presented, it can be concluded that learning difficulties are included in the scope of social and educational problems in Brazil, considering that the theme is among the generators of school dropout. This corroborates with the first phase of this study, by indicating the relevance of early assessment and intervention with students with learning difficulties, resulting in reduced risk rates and low school performance.

It is worth mentioning that, even though it is not directly related to the phenomenon of difficulties, racism and exclusion of the black population, affects students of basic education too much, considering that vulnerability unfolds in so many other factors such as insecurity, food shortage, inaccessibility to quality schools, negative socio-emotional factors, which interfere in the biopsychosocial development of these students. So, as evidenced earlier, the curricular problem, in which the school was based on student failure, reproducing even more the stresses and problems of social vulnerability that sadly have color in Brazilian territory, and the learning difficulties end up being associated, this points us to the urgency of forceful measures in the prevention of risk factors and in the clear confrontation of this shameful and historical social stigma that afflicts most of our people and our children in the schooling phase.

Finally, education has an urgent need for the elaboration of public educational policies and pedagogical practices based on evidence and discussed with the various social actors, which make the school an inclusive and egalitarian environment, understanding each student in their integrity and valuing everyone under the guarantee of an education focused on neurodevelopment, social inclusion and human well-being.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

- American Psychological Association (APA) (2014). *Manual diagnóstico e estatístico de transtornos mentais—DSM* (5th ed.). Artmed.
- Aquino, S. R. O. et al. (2019). *Nada consta: Uma revisão sistemática de literatura sobre evasão escolar e a população negra. Anais VI CONEDU*. Realize Editora.
- Aro, T., Eklund, K., Eloranta, A.-K., Ahonen, T., & Rescorla, L. (2022). Learning Disabilities Elevate Children's Risk for Behavioral-Emotional Problems: Differences between LD Types, Genders, and Contexts. *Journal of Learning Disabilities, 55*, 465-481. <https://doi.org/10.1177/00222194211056297>
- Barbosa, P. S. (2015). *Dificuldades de aprendizagem*. UemaNet.
- Caixeta, C. A. D., Melo, H. C. S., Junior, G. A., & Pereira, S. G. (2022). Transtornos e dificuldades de aprendizagem: Conceitos, diferenças e atuação do professor. *Revista Acadêmica Faculdade Progresso, 7*.
- Cardoso, F. B. et al. (2021). The Effects of Neuropsychopedagogical Intervention on Children with Learning Difficulties. *American Journal of Educational Research, 9*, 673-677. <https://doi.org/10.12691/education-9-11-3>
- Carneiro, R. U. C., Dall'Acqua, M. J. C., & Caramori, P. M. (2018). The 20 Years of the Law of Guidelines and Bases and Special Education: Considerations and Reflections. *Ibero-American Journal of Studies in Education, 13*, 190-206. <https://doi.org/10.21723/riaee.v13.n1.2018.11154>
- Carrara, M. L. (2016). *Dificuldade de aprendizagem e vulnerabilidade social sob a percepção da co-munidade escolar*. Universidade do Sul de Santa Catarina. Pós graduação em Educação e Direitos Humanos.
- Ceratti, M. (2008). *Evasão escolar: Causas e conseqüências* (pp. 2-18). SEED/PR: PDE, No. 3.
- Cruz, P., & Monteiro, L. (2021). *Anuário Brasileiro da Educação Básica*. Moderna.
- de Carvalho-Silva, H. H., Batista, A. A. G., & Alves, L. A. (2014). Escola e famílias de territórios metropoli-tanos de alta vulnerabilidade social: Práticas educativas de mães “protagonistas”. *Revista Brasileira de Educação, 19*, 123-139. <https://doi.org/10.1590/S1413-24782014000100007>
- Gama, D. T., & Ferracioli, M. C. (2019). Neurociência na educação especial: Dos neuromitos às práticas pedagógicas baseadas em evidências. *DOXA: Revista Brasileira de Psicologia e Educação, Araraquara, 21*, 285-296. <https://doi.org/10.30715/doxa.v21i2.13101>
- Hughes, B., Sullivan, K. A., & Gilmore, L. (2020). Why do Teachers Believe Educational Neuromyths? *Trends in Neuroscience and Education, 21*, Article ID: 100145. <https://doi.org/10.1016/j.tine.2020.100145>
- Instituto Unibanco (2017). Evasão ainda é um dos maiores desafios do ensino médio. *Boletim Aprendizagem em foco, 37*, 115-128.
- Lemos, L. H. S. D. (2021). *Perspectivas históricas sobre o agravamento da extrema pobreza no Brasil*. 128 f. Trabalho de Conclusão de Curso (Graduação em História)—Universidade Federal de Uberlândia, Uberlândia.
- Morgan, H. (2020). Misunderstood and Mistreated: Students of Color in Special Education. *Voices of Reform, 3*, 71-81. <https://doi.org/10.32623/3.10005>
- Munck, D. R., Cardoso, F. B., & Loureiro, V. S. (2021). Estudo relativo a instrumentos de avaliação da linguagem em uma bateria Neuropsicopedagógica em crianças de 6 e 7 anos, do Ensino Fundamental I. *Brazilian Journal of Development, 7*, 61909-61924. <https://doi.org/10.34117/bjdv7n6-528>

- Relvas, M. P. (2020). *Neurociência e transtornos de aprendizagem*. Digitaliza Conteúdo.
- Rotta, N. T., Ohlweiler, L. S., & Riesgo, R. (2015). *Transtornos da aprendizagem: Abordagem neurobiológica e multidisciplinar*. Artmed Editora.