

**APPLICATION OF GEOGRAPHY TEACHING METHODOLOGIES AIMED AT
BLIND STUDENTS: A SOCIAL INCLUSION PROPOSAL**

***APLICAÇÃO DE METODOLOGIAS DE ENSINO DE GEOGRAFIA VOLTADAS A
ALUNOS CEGOS: UMA PROPOSTA DE INCLUSÃO SOCIAL***

***APLICACIÓN DE METODOLOGÍAS DE ENSEÑANZA DE LA GEOGRAFÍA PARA
ALUMNOS CIEGOS: UNA PROPUESTA DE INCLUSIÓN SOCIAL***

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ABSTRACT: One of the great challenges for inclusive education is teacher training and practice, which often does not meet the demand and need for this type of teaching. An inclusive school must be understood in a broad sense and not just as an individual case, as it is a reality to be discussed. Therefore, the teacher must work with the entire school community; after all, inclusive education counts on the active participation of all so that this practice is effective. Therefore, this work aims to contribute to studies in the area, seeking to reduce the existing gap and help in the identification of teaching methodologies of Geography that improve the understanding of the blind. This article has an integrative research character, allowing a broad methodological approach based on experimental and non-experimental research to complete the understanding of the researched phenomenon. This research was carried out through articles published between 2016 and 2022, focusing on articles found in several databases, such as Google Scholar. From the review carried out where the results obtained by other authors were analyzed, it can be concluded that an inclusive education, in which everyone can enjoy knowledge is what we try to discuss through this present work. Exposing the immense challenge that involves the school-student-teacher tripod; It was presented as a result of this research questions that have in view the problem of inclusive education for blind and low vision students, because it was starting from a real situation of the school daily life that we opened the range of this very important variety of teaching, school inclusion.

KEYWORDS: Geography. Blind. Inclusive Education.

RESUMO: *Um dos grandes desafios para a educação inclusiva é a formação e a prática docente que, muitas vezes, não atende a demanda e necessidade desse tipo de ensino. Uma escola inclusiva deve ser entendida em sentido amplo e não apenas como um caso individual, pois é uma realidade a ser discutida. Portanto, o professor deve trabalhar com toda a comunidade escolar; afinal, a educação inclusiva conta com a participação ativa de todos*

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para que essa prática seja efetivada. Sendo assim, esse trabalho vem com o objetivo de contribuir aos estudos na área, buscando a diminuição da lacuna existente e ajudar na identificação de metodologias de ensino de Geografia que melhorem a compreensão de cegos. Este artigo possui um caráter de pesquisa integrativa, permitindo uma ampla abordagem metodológica baseada em pesquisas experimentais e não experimentais para completar a compreensão do fenômeno pesquisado. Esta pesquisa foi realizada por meio de artigos publicados entre 2016 e 2022, com foco nos artigos encontrados em diversas bases de dados, como Google Acadêmico. A partir da revisão feita em que foram analisados os resultados obtidos por outros autores, pode-se concluir que, uma educação inclusiva na qual todos possam desfrutar do conhecimento é o que tentamos discutir por meio deste presente trabalho. Expondo o imenso desafio que envolve o tripé escola-aluno-professor, foi apresentado como resultado desta pesquisa questões que tem em vista a problemática do ensino inclusivo para alunos cegos e com baixa visão, pois foi partindo de uma situação real do cotidiano escolar que abrimos o leque desta tão importante variedade de ensino, a inclusão escolar.

PALAVRAS-CHAVE: Geografia. Cegos. Educação Inclusiva.

RESUMEN: Uno de los principales desafíos para la educación inclusiva es la formación y la práctica de los maestros, que a menudo no satisface la demanda y la necesidad de este tipo de enseñanza. Una escuela inclusiva debe entenderse en un sentido amplio y no solo como un caso individual, ya que es una realidad a discutir. Por lo tanto, el maestro debe trabajar con toda la comunidad escolar; después de todo, la educación inclusiva tiene la participación activa de todos para que esta práctica sea efectiva. Así, este trabajo pretende contribuir a los estudios en el área, buscando reducir la brecha existente y ayudar a identificar metodologías de enseñanza de geografía que mejoren la comprensión de los ciegos. Este artículo tiene un carácter de investigación integradora, permitiendo un amplio enfoque metodológico basado en la investigación experimental y no experimental para completar la comprensión del fenómeno investigado. Esta investigación se llevó a cabo a través de artículos publicados entre 2016 y 2022, centrándose en artículos encontrados en varias bases de datos, como Google Scholar. De la revisión realizada en la que se analizaron los resultados obtenidos por otros autores, se puede concluir que una educación inclusiva en la que todos puedan disfrutar del conocimiento es lo que intentamos discutir a través de este trabajo. Exponiendo el inmenso desafío que implica el trípode escuela-alumno-profesor, cuestiones que tiene en vista del problema de la enseñanza inclusiva para estudiantes ciegos con baja visión, se presentó como resultado de esta investigación, pues fue partiendo de una situación real de la vida escolar que abrimos el abanico de esta importante variedad de enseñanza, la inclusión escolar.

PALABRAS CLAVE: Geografía. Ciego. Educación Inclusiva.

Introduction

One of the major challenges for inclusive education is teacher training and practice, which often does not meet the demand and need for this type of teaching. This is due to





several factors, from working conditions such as the physical structure of the facilities, deficiencies in the training process and to the lack of continuous training to work with this public (ALVES, 2019).

However, despite the various challenges that are normally faced, it is important to emphasize that working with inclusive education cannot be seen as a problem or an insurmountable barrier to potential. It is necessary to see the other for who he is, not by labels (AGUIAR; COSTA, 2021).

An inclusive school should not be understood only as a school that accepts students with disabilities, because the concept of inclusion is not limited to the fact that the disabled person is enrolled in a regular school. This student must be inserted as a whole and actively participate in the teaching and learning process (COOK *et al.*, 2021).

In the teaching and learning process, the teacher has a fundamental role and should not only be a mere transmitter of finished knowledge, but a stimulator/mediator of knowledge and at the same time a researcher who contributes to the development of education (FERREIRA; SILVA; SILVA, 2021).

An inclusive school should be understood in a broad sense and not just as an individual case, as it is a reality to be discussed. Therefore, the teacher must work with the entire school community; after all, inclusive education has the active participation of all for this practice to be effective (RODRIGUES; SALDANHA; CORRÊA, 2017).

Thus, this work aims to contribute to studies in the area, seeking to reduce the existing gap and help identify geography teaching methodologies that improve the understanding of the blind.

Theoretical framework

Visually impaired people are people with total or partial visual impairment. In particular, visual impairment is divided into partial visual impairment, also called visual impairment or more correctly, visual impairment and blindness if the disability is complete. Individuals with visual acuity below 0.05 in the best eye without help are considered blind, which means they can see at ten feet what a person without visual impairment can see at sixty meters (ALVES, 2019).



This decrease in vision or blindness may have congenital causes, which can be acquired in prenatal care or after the first month of life or may be hereditary, causing a complete absence of reaction (blindness) (ALVES, 2019).

Article 58 of the National Education Guidelines and Bases Act (LDBEN) ensures that the regular school must provide specific disciplinary support to meet the needs of the target people of Special Education. If it is not possible to integrate into regular classes, this special educational achievement must be performed in special classes, the so-called resource rooms, through the Specialized Educational Service (AEE) (BRASIL, 1996).

In addition, Article 59 of LDBEN states that education systems will ensure that students with special needs have a curriculum, methodology, techniques, educational resources and special organization to meet their needs (BRASIL, 1996).

The teaching of geography for people with visual impairment is important for the development of spatial autonomy. Spatial autonomy is understood as the process of independent movement in the classroom in the sense of a mental consolidation of the school's spatial organization. Thus, visually impaired students can not only move more safely around the classroom, but also understand their life space in general (AGUIAR; COAST, 2021).

According to Cook *et al.* (2021), this is a very important step in cognitive development for people with disabilities, because to understand geographic information it is necessary to develop tactile-spatial skills. Touch is the direct experience of resistance, the direct experience of the world as a system of resistance and compulsions that convince us of the existence of a reality independent of our imagination.

In this perspective, the knowledge of the student's living space, whether at school or in places of his/her daily life, is not only recognized or understood from the visual sense, but is accessible through feeling, whatever form this feeling is present (COOK *et al.*, 2021).

The phenomenological perspective is still challenging in view of the teaching of traditional geography, because it refers to the presence in the national scenario since colonial times, focusing on pragmatism and not allowing the criticism or appreciation of students' experiences. This vision of geography, although ancient, is still present today. Sometimes allied to other proposals, such as criticism and phenomenology, the student acquires other possibilities when geography is connected to his life and gains meaning in his reality (FERREIRA; SILVA; SILVA, 2021).

The fact, however, is that regardless of the development of geography in the classroom, the content must be adapted so that students with visual impairment can be





included in the teaching and learning process. The simple physical presence of the visually impaired student at school does not mean that he is really involved. Thus, the environment should be fully adequate, with full accessibility, teachers should have adequate and specialized training and the teaching methods that meet these students should be carefully observed (RODRIGUES; SALDANHA; CORRÊA, 2017).

Another perspective to consider is the methodology of evaluation of these students, being clear that their evaluation may not coincide with that of other students because their learning is based on another time and rhythm. Therefore, an adequacy of the curriculum to make sense of each learning of the student with special needs is necessary (ALVES, 2019).

Often the student was evaluated in the traditional way, which required him to reproduce only ready and meaningless concepts with his experience, unless he was excluded from it because he was considered incapable of answering the questions raised in which a critical view was necessary (AGUIAR; COSTA, 2021).

One of the biggest challenges in terms of inclusive and even special education, in the case of Geography, is how teachers are formed in the visual logic of reading in the world, face the challenge of learning from their students the way of working other geographical meanings, which are not guided by the visuality of the landscape and territory, but determined by feeling like it. Teaching geography to these students can be challenging, but when society, school, science and teachers seek solutions, new methods change that (COOK *et al.*, 2021).

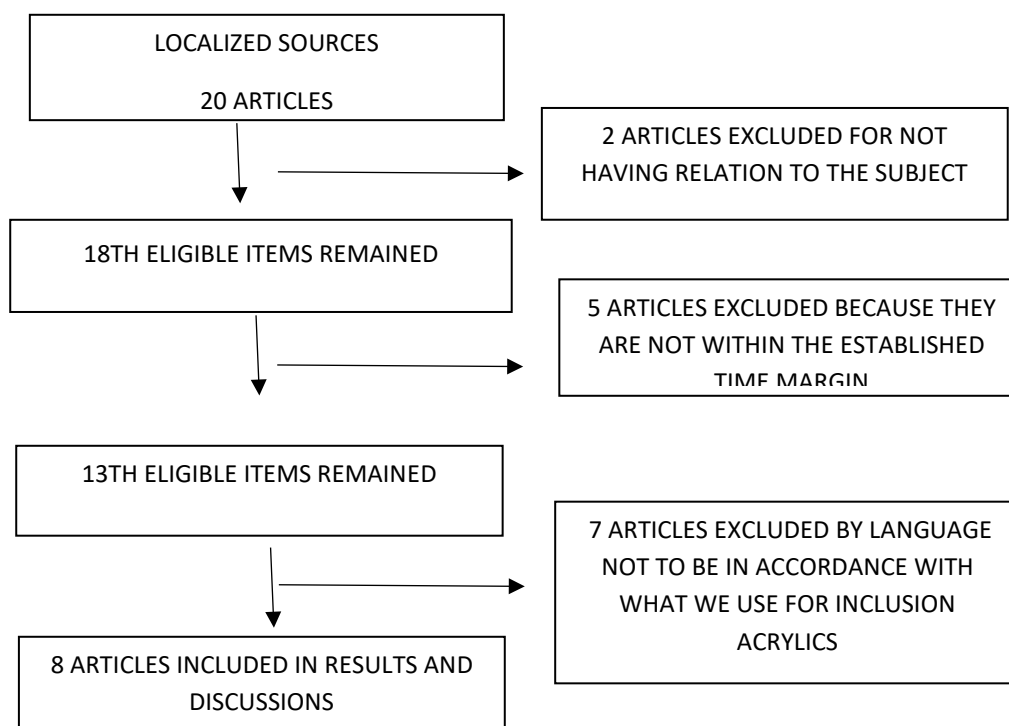
Methodology

This article has an integrative research character, allowing a broad methodological approach based on experimental and non-experimental research to complete the understanding of the researched phenomenon. This research was carried out through articles published between 2016 and 2022, focusing on articles found in several databases, such as Google Scholar.

Because it is an Integrative Review characterized as Qualitative Research, the methodology of this study sought to follow some of the stages of scientific research, such as: the search or sampling in the literature, data collection, critical analysis of the included studies, discussion of the results and, finally, presentation of the Integrative Review.



Figure 1 - Workflow of job search



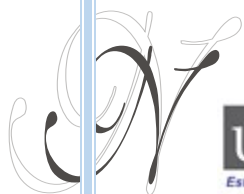
Source: Prepared by the authors

Findings

The analysis of the articles selected for review aims to understand the definition and importance of performing predictive maintenance by electromechanical professionals. By investigating the article, Table 1 can be constructed as follows:

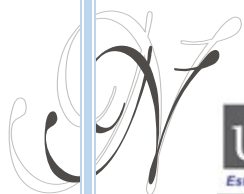
Table 1 – Summary of selected articles and main information about them.

AUTHOR /YEAR/ JOURNAL	METHODOLOGY	SAMPLE	RESEARCH OBJECTIVE	FINDINGS
SILVA. 2019. Federal University of Maranhão.	Pedagogical Intervention	School of the Blind of Maranhão - ESECEMA	This research aimed to build and apply tactile didactic resources in interventions in geography classes for blind students attending the 6th grade of elementary school, and, after the use of resources, prepare a notebook with methodological guidelines that could assist the teacher of this curricular	The results revealed that the pedagogical intervention using tactile didactic resources was satisfactory both for the learning of blind students and for the teaching of Geography in the context of inclusive education. It was evident that the use of tactile teaching resources contributed to



			component in his teaching activity aimed at achieving an inclusive practice.	expand teaching strategies and consequently geographic knowledge by blind students.
BESERRA. 2017. Federal University of Campina Grande	Action search	Geny Ferreira Integrated Special Education Center (CEEIGEF)	Develop and characterize a tactile make-up with Braille legend introduced with didactic resource in the Geography Teaching of CEEIGEF.	When composing the data analyzed in the questionnaires, a development was perceived in the learning of 2% of the students without impairment in vision, while for students with visual impairment, who had no perception of the representation and distribution of the forms of relief on Earth, a 10% advance in learning was achieved.
SOUZA. 2020. Federal University of Santa Catarina	The work uses the principles of exploratory research, based on bibliographies of tactile cartography, school geography, education and accessibility to analyze the existing teaching problems in inclusive education and bring results that can benefit future generations.	Federal University of Santa Catarina	The general objective of this research is to present a proposal for inclusive geography lesson plan, building and using the Tactile Terrestrial Globe.	It is in this context, based on the bibliographies about school geography with the use of inclusive pedagogy, that this work brings a collection of existing tactile globes, with a survey of the materials needed to make step-by-step a prototype and, finally, develops a lesson plan, followed by the final considerations, that the didactic resource creates for students with visual disabilities the possibility of having quality teachings regarding the mandatory contents of the school curriculum.





<p>JUNIOR <i>et al.</i> (2017). Roteiro</p>	<p>Case Study</p>	<p>Application College of the Federal University of Santa Catarina (UFSC).</p>	<p>In this bias, we sought to reflect on visual impairment based on the conceptual reference of Vygotsky's studies, particularly with regard to mediation, compensation, concepts and superior psychological functions. In the light of this context, we highlight an experience that sought to investigate the potential of the workshop pedagogical in the teaching of Geography</p>	<p>The results of the research showed, in general terms, that students with disabilities build their learning through tasks their potential, their way of learning, their rhythm, their skills and their talents. that promote and value.</p>
<p>MEDEIROS. 2019. Federal University of Mato Grosso</p>	<p>This research is theoretical in nature, bibliographic and documentary in nature,</p>	<p>Federal University of Mato Grosso</p>	<p>The general objective of this work is to understand the importance of the inclusion of the visually impaired and their implications in the teaching of geography. In this sense, the research is organized into seven sections, contemplating memorial, introduction, development, considerations and bibliographic references.</p>	<p>The initial research allows demonstrating the importance of tactile cartography in order to ensure an inclusive education for students with visual impairment, thus ensuring the appropriation of the concepts of geography and cartography.</p>
<p>HAMUD. 2021. Federal University of Santa Catarina</p>	<p>Literature review</p>	<p>Federal University of Santa Catarina</p>	<p>The present work aims to develop tactile didactic resources, adapted for students with visual impairment (blindness), being developed from contents of climatology that contemplate the set of thematic units of the 6th year of elementary school.</p>	<p>Finally, as a result of all the research, the work performs the combination of what has been most debated today, in order to present tactile resources for people with visual impairment, having as a cut, the one in which it has total blindness, in which the process of visual loss can happen before or during the birth of the baby, as well as for psychics, focused on the teaching of climatology.</p>
<p>Junior and Costa. 2017. Geography, Teaching & Research</p>	<p>Case Study</p>	<p>Benjamin Constant Institute</p>	<p>This article aims to demonstrate how geotechnology tools can contribute to geography teaching to students with low vision.</p>	<p>As results, the material applied with such methodology will definitely be implemented in the academic activities of the students in the geography course of the Benjamin Constant Institute (RJ).</p>



<p>GENUINO. 2018. Federal University of Paraíba</p>	<p>This research is categorized as applied research as to its nature, qualitative approach to its exploratory and descriptive approach to the objectives, bibliographic and documentary studies, besides being a case study and action research by its technical procedures.</p>	<p>General Rodrigo Otávio Municipal Elementary School, in the Neighborhood of the States, in the city of João Pessoa - PB,</p>	<p>The general objective of the work is to promote the reduction of the difficulties of students with visual impairment in the school environment, strengthening their understanding and bringing the student closer to geography and its contents, through tactile cartography.</p>	<p>As results, it was perceived that tactile cartography, when applied in the assists the students' understanding, enabling the visualization of that map by tact, making the teaching of Geography effective and more complete.</p>
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Source: Prepared by the authors

Discussion

Beserra (2017), in his study, proposes the use of a tactile model, which corroborates with Medeiros (2019) and Genuino (2018). The analysis of the data obtained from the post-model questionnaires indicated that in the item "*Understanding the Theme from the model*", 92% of the seer students stated that there was favoring the understanding of the theme and were able to relate it to the real landscape, as well as seen in photos arranged in books, magazines, TV, internet, among others.

When compared to the development of the learning of seers and people with disabilities, there was an increase in the understanding of 10% in people with visual impairments (hereinafter PVDs), and 2% in the seers, considering the research time in the classroom. Satisfactorily, 100% of the PVDs and 92% of the seers were didactically stimulated with the use of the model (BESERRA, 2017).

Medeiros (2019) found in his bibliographic review that tactile cartography is created in order to provide the PDVs with knowledge about geographic spaces. Thus, with regard to tactile cartography, the questions are the same, guarding their specificities because their products are designed for people with visual impairment.

According to the author, the principle of cartography remains the same for tactile cartography, which is to provide a means of establishing communication and transmitting information about geographic space to readers, taking into account the subjectivities of users of the material (MEDEIROS, 2019).



Genuino (2018), in his applied research, made several maps of various regions of Brazil and South America. Subsequently, the production of the material presented was all applied, together with the contents addressed in the classroom, so that the theory would approach a representation adapted for these students.

Finally, after the application of the interview with the student with disabilities, with the teacher from the regular room, in addition to a teacher from the resource room of the school in which the research was conducted, one can perceive the importance of the adapted materials used and the need for their continuous production and application (GENUINO, 2018).

In another research, Souza (2020) elaborated an inclusive proposal for students with visual impairment, in which the idea was to make a tactile globe to work the location of continents. The lesson plan with the use of the prototype created is directed to high school, in which textbooks are directed to understand the planetary system and interpretation of maps, and work in an integrated and complementary way to other disciplines, such as Physics and Biology. The schedule of classes is divided into five, in which the objective is to understand the petrological cycle, origin of the planet, gravity and pressure, cartography, mineralogy, geology, environmental preservation. The forms of evaluation are two: the first, two tests and a recovery and the second is to propose the making of the tactile terrestrial globe in the classroom (SOUZA, 2020).

In order to relate the teaching of climatology and the inclusive education of blind people, Hamund (2021) aims to make the preparation and adaptation of educational resources for this public. The first feature is called "Climate Trail" and the second is called "Tactile Climatological Pot". The author concluded that tactile resources then guarantee the possibility of developing an inclusive geographical education for blind students, valuing, above all, the contents.

Junior and Costa (2017) conducted research that aimed to understand how geotechnologies help students with visual impairment to have a better use of classes. Therefore, it can be seen that the students had a lot of acceptance in relation to the use of the *Google Earth* and *Google Maps applications*, in addition to the use of the interactive portal of the Brazilian Institute of Geography and Statistics (IBGE).

In an attempt to understand the process of teaching and learning in Geography for visually impaired subjects, the methodological approach of the investigation by Junior *et al.*





(2017) was inspired by a qualitative approach, in the modality of case study, involving students of a elementary school class of a Public School in Florianópolis, SC.

The results collected in the research showed, in general terms, that students with disabilities build their learning through differentiated tasks that promote and value potential, way of learning, rhythm, their own skills and talents (JUNIOR *et al.*, 2017).

Silva (2019) conducted research to build and apply didactic and tactile resources in interventions in geography classes for blind students of the 6th year of elementary school. The geography teacher and the students were exposed to two semi-structured interviews and two questionnaires, respectively. These two instruments were used before and after the use of tactile resources. The resources used were three: a tactile model of the Brazilian territory in South America, Tactile Roses of the Winds and a low model of the classroom. The results of the questionnaires revealed that the pedagogical intervention using tactile didactic resources was satisfactory both for the learning of blind students and for the teaching of geography in the context of inclusive education (SILVA, 2019).

Conclusion

From the review, the results obtained by other authors were analyzed and it can be concluded that an inclusive education, in which everyone can enjoy knowledge, is what we try to discuss through this work.

Exposing the immense challenge that involves the school-student-teacher tripod; issues were presented as a result of this research that aims at the problem of inclusive teaching for blind and low-vision students, because it was from a real situation of daily school life that we opened the range of this important variety of teaching, school inclusion.

The educational process of blind or low-vision students is based on many challenges, but it becomes extremely necessary for the construction of a citizen education in which everyone can grasp differences, leaving aside prejudice and recognizing everyone with their particularities and limitations both possible to be overcome. It is in this scenario that geography teaching exposes its relevance as part of the development of this inclusive teaching, aiming at its geographical space at your fingertips.

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