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## ARCHITECTURAL ACCESSIBILITY FOR CHILDREN WITH MOTOR DISABILITIES IN ELEMENTARY SCHOOLS IN THE CENTER OF PARAISO, TABASCO

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Abstract: The research project will address the evaluation and importance of architectural accessibility in educational spaces, focusing on children with motor disabilities in elementary schools in the center of Paraiso, Tabasco. Through a detailed analysis of the regulations and laws on inclusive design and the right to education in children with disabilities. The research study indicates that accessibility not only implies the elimination of architectural obstacles, but also the creation of an environment that promotes autonomy and inclusion. Through direct observations, surveys to educators and interviews to students with motor disabilities, it was possible to identify the main difficulties faced by children in the facilities, such as stairs without ramps, bathrooms and classrooms without adaptations. Finally, the importance of inclusion in educational institutions is highlighted, promoting awareness, seeking to contribute to a more accessible and equitable school environment, where all children, regardless of their abilities, can exercise their right to education and develop to the fullest.

**Keywords:** Accessibility, Inclusion, Motor Disability, Primary schools, infrastructure, Adaptations.

### INTRODUCTION

This research project aims to analyze the current situation of architectural accessibility in elementary schools in the center of Paraiso Tabasco, through surveys to principals or managers of institutions and visits to schools to identify physical barriers and inclusion faced by children with motor disabilities in schools lack the necessary infrastructure and adaptations to identify physical barriers and inclusion faced by children with motor disabilities in regular public and private schools. Currently, many schools lack the necessary infrastructure and adaptations to facilitate the mobility of students with motor disabi-

lities. That is why it is intended to sensitize the facilities or educational authorities on the importance of contributing to the realization of accessible environments, through the laws and regulations of architectural accessibility alignments for the design and construction of educational infrastructure where measures and criteria were created for the design of spaces and furniture for accessibility and mobility in students with mobility disabilities. In order to allow all students, without exception, to reach their maximum academic, social and independent potential.

### **METHOD**

The main objective of this study method was to evaluate the architectural accessibility conditions for children with motor disabilities in elementary schools in the center of Paraíso, Tabasco. This allows us to obtain accurate and measurable data on the physical barriers faced by students with motor disabilities, as well as the effectiveness and measures implemented in the school infrastructure. The study method obtained a quantitative approach and field as it was based on data collection that facilitated the measurement of accessibility in the different educational institutions. Through direct visits to the educational infrastructures and digital surveys to the directors or managers of the institution by means of open and multiple choice questions oriented to identify the accessibility in their institutions related to the presence of ramps, accesses, adapted bathrooms, adequate signaling and other accessibility measures. This allowed obtaining direct and contextualized information on the current conditions of the schools in relation to architectural accessibility for children with motor disabilities. The results obtained were analyzed through descriptive and correlational statistics to identify the school infrastructure and the needs of students with motor disabilities for a good educational development. That is why a total of 10 regular schools were selected in a time of 3 days corresponding to October 3 to 5 of this year, for data collection, based on size, location and available resources. Both public and private schools were included, to ensure a broader mission of the accessibility situation in the schools in the center of Paraíso, Tabasco.

The technique used to collect data on architectural accessibility for children with motor disabilities was a questionnaire directed to regular schools through a digital survey and direct visits to educational institutions in the center of Paraíso, Tabasco.

The study site of the research project is the elementary schools in the center of Paraíso, Tabasco.

### **SUBJECT OF STUDY**

Architectural accessibility for children with motor disabilities.

### POPULATION AND SAMPLE

The population of the research study is focused on elementary schools in the center of Paraíso, Tabasco. In order to identify and see if they comply with the measures of architectural accessibility in the institutions.

The sample of the research project is based on digital surveys, obtaining samples of 10 elementary schools located in the center of Paraíso Tabasco, selecting public and private institutions.

## INCLUSION AND EXCLUSION CRITERIA

### **INCLUSION CRITERIA**

 The surveys are structured in an understandable way so that the user can perform them successfully, without any difficulty or limitation.

- Surveys were conducted equally and without restriction to all institutions in the center of Paraíso, Tabasco.
- The surveys are directed to the managers of the institutions without restriction in sex, educational level and gender.
- The surveys were conducted in an understandable, ethical and respectful manner.

### **EXCLUSION CRITERIA**

- It does not allow surveys to be conducted at different educational levels.
- It is not allowed to be directed to any other person who is part of the institutions other than the person in charge or personnel assigned by the educational management.
- Student and parent participation is not included.

### **DISCUSSION**

Architectural accessibility in educational centers in Paraíso, Tabasco is a fundamental factor to guarantee an inclusive and equitable education for all children with motor disabilities, allowing more accessible educational environments. That is why we tend to make it more relevant from different angles, considering the challenges and opportunities that exist in the educational centers of Paraíso, Tabasco.

Through the analysis obtained during the visits and surveys to those in charge of the institutions, statistical results were obtained that show a worrisome situation. Where one of the main obstacles are the infrastructures that are part of the educational institutions that still have structures that are not accessible that severely limit their ability to move, generating multiple architectural barriers that hinder or prevent adequate access for students with motor disabilities, such as stairs without adequate

ramps, railings or handrails that corresponds to 25% of adaptability, crosswalks with 90% without adaptation of accessibility for people with disabilities, 15% of non-adapted toilets and lack of signage corresponding to 90%. These obstacles or barriers not only prevent physical access to classrooms or school activities, but also affect the autonomy and social participation of children with motor disabilities.

This is why, as a result of structural deficiencies not only limit the mobility of children with motor disabilities, but also affect their social inclusion in the school environment. However, many schools in central paradise still face serious challenges in terms of accessibility, where the educational experiences of students with motor disabilities are compromised, as they face inequality in educational opportunities.

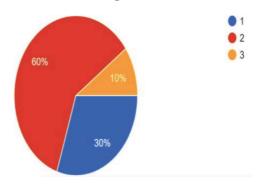
The dysfunction on this issue of architectural accessibility for children with motor disabilities in elementary schools, should promote reflection and awareness on the implementation of laws and public standards that promote accessibility at all levels of education. It is essential for the design of spaces that eliminate physical barriers and encourage the active participation of all students in the school environment, through an inclusive approach that can move towards a more equitable and egalitarian educational system based on the rights of children with disabilities, regardless of their limitations and abilities.

### **RESULTS**

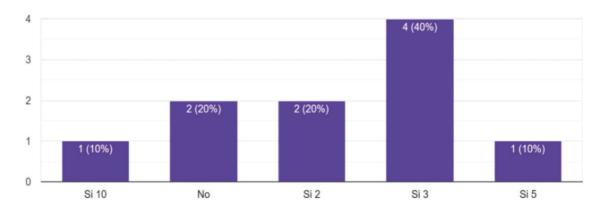
To achieve the results about the architectural accessibility for children with motor disabilities in elementary schools in the center of Paraíso, Tabasco. A survey was made to the 10 educational institutions for the identification of accesses that guarantee a school environment that favors the development and integration of all students with motor disabilities. Therefore, in order to assess the architectural accessibility of the educational institutions, two types of

surveys were conducted, one for the internal and the other for the external infrastructure.

1. How many levels does the institution have? 60% of the institutions have a second level, 30% have only one level, and 10% have three levels. It can be observed that most of the institutions have a second level in their educational facilities (Graph 1).

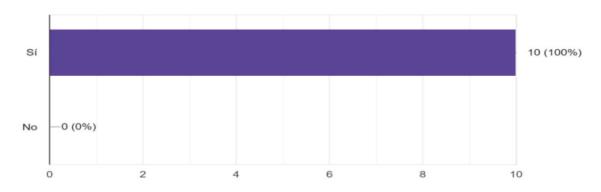


2. In the last 10 years, has your institution received children with motor disabilities? Approximately how many? The statistics show that 10% have had children with disabilities out of approximately 10 students, 20% have not had children with motor disabilities during the last, 20% of the institutions have had 2 students with motor disabilities, 40% have had approximately only 3 students and 10% have had 5 students. It is for this reason that through the statistical results it can be observed that most of the educational institutions have only had 3 students with motor disabilities, making the lowest index of 10 people during the last 10 years of education. (Graph 2.)

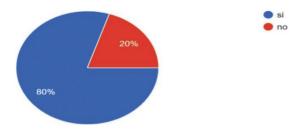


3. Is the main entrance of the school accessible for a child with motor disabilities (minimum of 1.20m to 1.50m wide)? The statistical results show that 100%

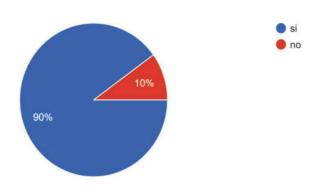
of the institutions have the necessary adaptations for access to a child with motor disabilities.



4. Does the institution have ramps that allow access to spaces for a child with motor disabilities (minimum at the beginning of 120 cm to 150 cm x 150 cm at the end of the ramp)? The results obtained show that 80% of the educational facilities do have ramps that allow access to a child with motor disabilities, while 20% do not have accessible ramps and adequate alignments for a student with motor disabilities. accessibility in the educational facilities.



5. Is the school free of obstacles for the displacement of a child with motor disabilities? Through analysis it was observed that 90% of the educational institutions are obstacle allowing the safety and displacement of a child with disability facilitating the integration and educational development, since 10% of the educational infrastructure is not suitable for students with accessibility since they have obstacles that do not facilitate the displacement and safety of the child with motor disability.



### CONCLUSIONS

The research project on architectural accessibility for children with motor disabilities in elementary schools in the center of Paraíso, Tabasco, has shown that the inclusion of students in the educational environment is still a significant challenge. That is why, through surveys and visits to educational facilities, the findings obtained through statistics indicate that some schools have made efforts to adapt their infrastructure, although currently there are physical limitations or barriers that hinder the access and mobility of these children with motor disabilities.

That is why it is essential to know that architectural accessibility is not only limited to the installation of ramps or handrails, but also implies a comprehensive approach based on universal design, awareness to educational institutions and inclusion for a good academic development. Through this research project we addressed the proper implementation that should be used by all those educational institutions through regulations and laws of architectural accessibility for educational institutions allowing adaptability to develop without any limitation in the educational environment.

This research project also allows us to know about the auxiliary devices for people with motor disabilities, the causes and types of motor disabilities to get a broad overview of the subject being addressed and thus know the different motor impairments and support tools for mobility in different areas.

### REFERENCES

- Anatolievna Zhizhko, E. (2020). Inclusión de los niños con capacidades diferentes en escuelas regulares en México: propósitos y realidad. Andamios, Revista de Investigación Social, 17(43). https://www.scielo.org.mx/scielo.php?script=sci\_arttext&pi-d=S1870-00632020000200249.
- Vega Muytoy, M. I. (2021). Dos experiencias históricas de inclusión educativa: siglos XIX y XXI. Anuario Mexicano de Historia de la Educación, 2(2), 213–221. https://doi.org/10.29351/amhe.v2i2.341
- Pérez-Castro, J. (2019). Entre barreras y facilitadores: las experiencias de los estudiantes universitarios con discapacidad. Sinéctica, Revista Electrónica de Educación, 53, 1–22. https://doi.org/10.31391/s2007-7033(2019)0053-003
- $\bullet$  Salas, M. J. S. (2013). Espacios accesibles en la escuela inclusiva. 17, N° 1, 89–103. https://www.scielo.sa.cr/pdf/ree/v17n1/a06v17n1.pdf
- La Inclusión de las Personas Con Discapacidad, C. N. P. E. D. Y. (2016). Hablemos de diseño universal. https://www.gob.mx/conadis/articulos/diseno-universal
- Arranz, E. (2023, abril 11). Discapacidad Motora: Qué es y sus tipos. El Blog de empleo de Fundación Adecco. https://fundacionadecco.org/blog/que-es-la-discapacidad-motora/
- Aguilar V. L (2022) Discapacidad Motriz Colección: Juntos trabajamos por la inclusión https://getindya.com/antropometria-que-es-que-mide-y-para-que-sirve/

- Instituto de Seguridad y Servicios Sociales de los Trabajadores del Estado (2021). Hablemos de Discapacidad. https://www.gob.mx/issste/articulos/hablemos-de-discapacidad?idiom=es
- Velástegui-Toro, M., Mera-Mosquera, A. L., Proaño-Shiguango, E. F., & Shiguango- Shiguango, Z. L. (2021). Accesibilidad arquitectónica para personas con discapacidad. Ciencia Ecuador, 3(4), 18–26. https://cienciaecuador.com.ec/index.php/ojs/article/view/53
- La importancia de la accesibilidad en la arquitectura. (2023). Babel Arquitectos. https://www.babelarquitectos.com/importancia-accesibilidad-arquitectura
- Maturana, M. B. (2023, diciembre 1). Adaptaciones Y Accesibilidad: ¿Cuál es la diferencia? https://medium.com/@miguelbo-nales/igualdad-adaptaci%C3%B3n- accesibilidad-67395fc75f1a
- $\bullet \ Bonales, M. \ (2023, octubre \ 4). \ Igualdad, adaptaci\'on, accesibilidad. Miguel Bonales. \ Medium.https://medium.com/@miguelbonales/igualdad-adaptaci\%C3\%B3n-accesibilidad-67395fc75f1a$
- Convención de las Naciones Unidas sobre los Derechos de las Personas con Discapacidad. (2023). Manual de Educación En los Derechos Humanos Con Jóvenes https://www.coe.int/es/web/compass/convention-on-the-rights-of-persons-with-disabilities#:~:text=Las%20personas%20con%20discapacidad%20tienen%20derecho% 20al%20trabajo%2C%20incluido%20el,de%20 las%20personas%20con%20discapacida d.
- Nueva Ley Publicada en el Diario Oficial, de la F. el. (2023). Ley General De Educación.https://sep.gob.mx/work/models/sep1/Resource/15131/4/images/ley\_general\_educacion\_4t\_01\_2023.pdf
- UNESCO. (2023). La reforma educativa en América Latina y el Caribe: Un análisis de las reformas más recientes [PDF]. Instituto Internacional de Planeamiento de la Educación (IIPE).
- Cámara de Diputados del H. Congreso de la Unión. (2017). Reglamento de la Ley General de Inclusión de las Personas con Discapacidad. https://www.diputados.gob.mx/LeyesBiblio/regley/Reg\_LGIPD.pdf.
- Universidad Europea. (2023). Tipos de actividades recreativas y el porqué de su importancia. https://universidadeuropea.com/blog/actividades-fisicas-recreativas/
- Delgado, P. (2022). La educación inclusiva: un proceso complicado pero necesario. Observatorio / Instituto para el Futuro de la Educación; Instituto para el Futuro de la Educación. https://observatorio.tec.mx/edu-news/la-educacion-inclusiva-un-proceso-complicado-pero-necesario/
- Viero, S. (2024, 15 agosto). Seguridad vial ¿Qué es y por qué es importante? Trimble Transportation. https://tl.trimble.com/es/blog/seguridad-vial-que-es.
- Universidad Europea. (2023b, septiembre 28). Tipos de actividades recreativas y el porqué de su importancia. https://universidadeuropea.com/blog/actividades-fisicas- recreativas/
- Procuraduría Federal del Consumidor. (2022). Aparatos auxiliares para la movilidad de personas. gob.mx. https://www.gob.mx/profeco/documentos/aparatos-auxiliares-para-la-movilidad-de-personas?state=published
- UNIR México. (2023, February 14). Discapacidad motora en el aula. Universidad Internacional de La Rioja. https://mexico. unir.net/noticias/educacion/discapacidad- motora-en-el-aula/
- Arranz E. (2023b, abril 11). Discapacidad Motora: Qué es y sus tipos. El Blog de Empleo de Fundación Adecco. https://fundacionadecco.org/blog/que-es-la-discapacidad-motora/
- Forma infantil. (2020, 13 enero). Cuáles son las principales causas de la discapacidad motriz. Formainfancia. https://formainfancia.com/discapacidad-motriz-tipos-causas/

- Secretaría de Educación Pública. (2023). Tomo 6: Discapacidad motriz. Secretaría de Educación Pública. https://educaciones-pecial.sep.gob.mx/storage/recursos/2023/07/uOSIf43OO4230301\_T omo6\_DiscapacidadMotriz.pdf
- Schenone, M. (2024, 16 octubre). Las barreras sociales en la inclusión educativa y los desafíos de las escuelas argentinas. Infobae. https://www.infobae.com/opinion/2024/10/16/las-barreras-sociales-en-la-inclusion- educativa-y-los-desafios-de-las-escuelas-argentinas/
- Pérez-Castro, J. (2020). Entre barreras y facilitadores: las experiencias de los estudiantes universitarios con discapacidad. Sinéctica Revista Electrónica de Educación, 53, 1-22. https://doi.org/10.31391/s2007-7033(2019)0053-003
- Secretaría de Educación Pública. (2020). Tomo 2: Accesibilidad [PDF file]. Gobierno de México. Retrieved November 10, 2024, from https://www.gob.mx/cms/uploads/attachment/file/89279/Tomo2\_Accesibilidad.pdf
- Libre Acceso. (2021). Título del documento [PDF file]. Libre Acceso. https://libreacceso.org/wp-content/uplo-ads/2021/09/9786074175929.pdf
- García-Vázquez, J. R., & Martínez-Castilla, F. E. (2020). Barreras en el entorno físico y su impacto en la accesibilidad a la educación para estudiantes con discapacidad motriz. Revista de la Educación Superior, 49(4), 61-77. Recuperado de https://www.scielo.org.mx/scielo.php?script=sci\_arttext&pid=S0185- 26982020000400007
- DOF Diario Oficial de la Federación. (2022). https://dof.gob.mx/nota\_detalle.php?codigo=5640405&fecha=10/01/2022
- Secretaría de Educación Pública. (2023). Recomendaciones para la accesibilidad en el entorno educativo [PDF file]. Secretaría de Educación Pública. https://educacionespecial.sep.gob.mx/storage/recursos/2023/05/nOvocdOmKM- 4Recomendaciones\_Accesibilidad.pdf
- Gobierno del Estado de México. (2018). Guía básica de accesibilidad. https://edomex.gob.mx/sis/newweb/pdf/guia\_basica\_accesibilidad.pdf
- Gestinet. (2021, octubre 22). Andadores para niños con discapacidad: mayor movilidad y autonomía. Supace. https://supace.com/andadores-para-ninos-con-discapacidad- mayor-movilidad-y-autonomía/
- Muletas: Tipos y uso correcto de las mismas. (2023). Ortopedia.com. https://ortopedia.com/blog/muletas-tipos-y-uso-correcto-de-las-mismasb52.html?srsltid=AfmBOop6DJYSvS9g0qhLNk7UZpDFbOgT9b1l1BVPSSH1Cw ZE19ydADn6
- Social, C. (2022, marzo 2). La silla de ruedas y su importancia. Juntos AC; Juntos, una experiencia compartida A.C. https://www.juntos.org.mx/2022/03/la-silla-de-ruedas-y-su-importancia/
- UNICEF. (2019). El derecho a la educación inclusiva: Una guía para la implementación de la educación inclusiva en América Latina y el Caribe. https://www.unicef.org/lac/media/35051/file/DUA-I.pdf
- Sistema Educativo Nacional. (2023). Tomo 6: Discapacidad motriz [PDF]. Secretaría de Educación Pública. https://educacionespecial.sep.gob.mx/storage/recursos/2023/07/uOSIf43OO4- 230301\_Tomo6\_DiscapacidadMotriz.pdf
- Arellano, R. (2019). Las políticas de inclusión en educación en América Latina: Retos y perspectivas [Artículo]. Revista Mexicana de Investigación Educativa, 24(2), 369-389. https://www.scielo.org.mx/scielo.php?script=sci\_arttext&pid=S1665-109X2019000200003