Salud, Ciencia y Tecnología - Serie de Conferencias. 2023; 2:517
doi: 10.56294/sctconf2023517

Categoría: Congreso Científico de la Fundación Salud, Ciencia y Tecnología 2023

ORIGINAL

Educational inclusion through the use of Information and Communication Technologies (ICT) for students with diverse educational needs in Santa Marta, Colombia

Inclusión educativa a través del uso de las Tecnologías de la Información y la Comunicación (TIC) para estudiantes con necesidades educativas diversas en Santa Marta, Colombia

Matilde Bolaño-García[1]

[1]Universidad del Magdalena. Facultad de Ciencias de la Educación. Santa Marta, Colombia.
[2]Universidad Simón Bolívar. Barranquilla, Colombia.

Citar como: Bolaño-García M. Inclusión educativa a través del uso de las Tecnologías de la Información y la Comunicación (TIC) para estudiantes con necesidades educativas diversas en Santa Marta, Colombia. Salud, Ciencia y Tecnología - Serie de Conferencias 2023; 2:517. https://doi.org/10.56294/sctconf2023517

Recibido: 15-06-2023 **Revisado:** 17-08-2023 **Aceptado:** 19-10-2023 **Publicado:** 20-10-2023

ABSTRACT

The purpose of this study was the creation of a comprehensive approach aimed at facilitating the educational inclusion of students with different educational needs, making use of Information and Communication Technologies (ICT). The methodology used was based on a quantitative approach and a descriptive field design, which involved the collection of data from 121 students and 81 teachers belonging to educational institutions in Santa Marta, Colombia. The results obtained indicated that both teachers and students do not adequately take advantage of ICT, and that educational inclusion for those with diverse educational needs is at an unsatisfactory level. Following these discoveries, a model designed specifically to address the circumstances of students and the inclusive policies in place in Colombia was developed.

Keywords: Diversity; Education; Inclusion; Technology.

RESUMEN

El propósito de este estudio fue la creación de un enfoque integral orientado a facilitar la inclusión educativa de estudiantes con diferentes necesidades educativas, haciendo uso de las Tecnologías de la Información y la Comunicación (TIC). La metodología utilizada se basó en un enfoque cuantitativo y un diseño de campo descriptivo, que implicó la recolección de datos de 121 estudiantes y 81 docentes pertenecientes a instituciones educativas de Santa Marta, Colombia. Los resultados obtenidos indicaron que tanto docentes como estudiantes no aprovechan adecuadamente las TIC, y que la inclusión educativa de quienes tienen necesidades educativas diversas se encuentra en un nivel insatisfactorio. A raíz de estos descubrimientos, se desarrolló un modelo diseñado específicamente para abordar las circunstancias de los estudiantes y las políticas inclusivas vigentes en Colombia.

Palabras clave: Diversidad; Educación; Inclusión; Tecnología.

INTRODUCTION

Educational inclusion has become a primary focus of the international debate on public policies in education Vásquez (2015);[1] With increasing force, it is a requirement that governments favor access to education as a fundamental right for all its citizens, without any limitation. Pérez (2016)[2] affirms that, in Colombia, social inclusion policies facilitate access to rights such as quality education and, therefore, the need to ensure equal conditions and social inclusion with the participation of the family and others. actors in the education system. It implies that people with Diverse Educational Needs (DEN) have accessible educational programs, spaces and resources that allow them to equalize opportunities with their peers, boys and girls.[3,4,5]

However, the access barriers have not yet been completely overcome, despite the legal protection provided by public policy in the equity of the educational offer for all children with or without diverse educational needs "...in many educational institutions the right to education is still violated" Saénz, 2012 cited by Vásquez (2015).[6] This barrier alerts us to the second and, even more critical, many educational institutions do not have the technical and operational capacities to carry out innovative, inclusive and inclusive training processes.[7]

Technology is a fundamental axis of these institutional capacities; however, currently not enough is being done so that people with NED can also benefit from it. It is important to note that the technologies applied to the classroom facilitate work with children, providing multiple alternatives to the traditional teaching-learning process.[8] But how can information and communication technologies favor the inclusion of people with SEN?

The initial response could be in the availability of many tools, materials and infoproducts capable of helping teachers generate favorable responses to optimize access, processing and retrieval of information, breaking paradigms on the situation of disability.[9-11] For this reason, there is interest in implementing initiatives that promote comprehensive development and research on the subject so that the transition of children with SEN to school not only fosters the development of personal and social skills but also so that they can comply with the proposed academic goals by the Ministry of National Education (MEN).[12]

According to Mendivil, Chinchilla and Portillo (2013),[13] in the District of Santa Marta, concrete actions must be observed to improve lifestyle, access to education and the incorporation of technology for people with diverse educational needs.[14] Based on the above considerations, the specific case of the District Educational Institutions (IED) is presented, located in the city of Santa Marta, in the Department of Magdalena, Colombia, attended by children with ENE from the area, some of whom Others from high school are inserted in it, coming from the banana zone.[15,16,17,18,19]

Consequently, this article aims to propose a model based on the use of ICT for the inclusion of students with diverse educational needs (SEN) from a research exercise in the IED of Santa Marta, initially designed for the region.[20] but that can be replicated in other territorial entities and even countries. In addition to the theoretical contribution, this comprehensive model is concerned with generating strategies that increase the levels of permanence and promotion in the regular educational system of this population group.[21,22,23,24]

Educational inclusion is a concern that has become increasingly relevant globally, and Colombia is no exception.[25] Guaranteeing equal access to education for all citizens, regardless of their differences or educational needs, is a fundamental objective of public policies in the country. However, despite the regulatory advances, there are significant challenges in the implementation of effective strategies that promote inclusion in a comprehensive manner.[26,27] In this context, Information and Communication Technologies (ICT) have emerged as a valuable resource to overcome existing barriers and create a more inclusive and accessible educational environment.[28] In this article, A comprehensive approach based on the use of ICT is presented to improve the educational inclusion of students with diverse educational needs in Santa Marta, Colombia. Below is a table that lists and describes the key elements related to this approach and the sources that support its rationale.

Table 1. Elements related to education and Inclusion.

Item	Description	Sources
Use of ICT	This item refers to the conceptual basis that supports the use of Information and Communication Technologies (ICT) in education. The cited sources	Marqués (2002); Cabero-Almenara,

	offer key perspectives and approaches to understand how ICTs can be applied in various educational contexts, highlighting their relevance and effectiveness in promoting interest, communication, self-learning, and visual-motor development, especially in students with disabilities. The importance of teacher preparation in the implementation of ICTs is also emphasized.	Fernández-Batanero & Córdoba-Pérez (2016)
Personal skills	This item addresses personal skills that are developed throughout education, in addition to cognitive skills. These skills include practical skills necessary to function in today's society. The cited sources offer a complete perspective of these skills, relating them to autonomy, the application of knowledge and the role of the family in their development.	Marqués (2004); Saramona (2007); Kings (2015)
ICT access	It refers to the importance of access to Information and Communication Technologies in education. The cited sources highlight how access to ICTs is related to the construction of knowledge and how this accessibility has become increasingly universal. The need for an adequate approach is also underlined, which is not limited to the mere availability of technology, but rather considers the specific learning needs and the demands of the knowledge society.	Severin (2010); Bolaño-García, M. (2022); González (2008); Sánchez (2009)
educational inclusion	This item explores the concept of educational inclusion, which implies providing equal educational opportunities and avoiding exclusion. The sources cited offer varied approaches to how inclusion in education can be achieved, including aspects such as teacher preparation and pedagogical strategies.	Booth & Ainscow (2011); Céspedes A. and et al. (2013); Escribano & Martínez (2013)
Inclusive culture	The inclusive culture focuses on creating an educational community based on the collaboration and appreciation of all members. The cited sources define how this inclusive culture can contribute to academic achievement and how ICT can be a tool in this process.	Booth & Ainscow (2011); Soriano, González & Cala (2014)
inclusive policies	Inclusive policies refer to regulations that promote participation and attention to diversity in education. The cited sources describe the key aspects of these policies, including the creation of a school for all and the organization of attention to diversity. It also highlights how these policies can contribute to improved learning and engagement for all students.	Booth & Ainscow (2011); Soriano et al (2014); Bolaño and Duarte (2019)

METHODS

The study was carried out using a descriptive methodology whose main objective was to identify and characterize the use of Information and Communication Technologies (ICT) to promote educational inclusion in the context of basic education teachers and students in Santa Marta, Colombia. A transectional and non-experimental field design was used, which implied the collection of data in a single moment without manipulating variables. The study population included primary school teachers and students from different district educational institutions in Santa Marta, Colombia. From this population, a representative sample was selected using probabilistic and stratified sampling. The main data collection technique was observation through surveys based on a questionnaire with 36 items and a Likert scale. The questionnaire was validated by experts in Educational Sciences and was subjected to a reliability test that yielded a high level of reliability (0,98). Interpretation scales were established for the two study variables: "Use of ICT" and "Educational Inclusion", which allowed the responses obtained to be categorized into qualitative categories.[29,30,31]

Table 2. Variable Interpretation Scale Use of ICT

Interval	Category
4,20 < x < 5	Very Effective
3,40< x < 4,20	Effective
2,60 < x < 3,40	Moderately Effective
1,80 < x < 2,60	Ineffective
1 < x < 1,80	Very Ineffective

Table 3. Variable Interpretation Scale Educational Inclusion.

Interval	Category
4,20 < x < 5	Very Enough
3,40< x < 4,20	Enough
2,60 < x < 3,40	Moderately Sufficient
1,80 < x < 2,60	Insufficient
1 < x < 1,80	Very Insufficient

RESULTS

The results of the study yielded significant findings in relation to two key variables: "Use of ICT" and "Educational Inclusion". In the context of the "Use of ICT", deficiencies were identified both in the personal skills of teachers and students, with scores of 2,13 and 1,64 respectively, which indicates limitations in the ability to work with presentations and in the ability to socialize information effectively. In addition, a restriction in access to ICTs was evidenced since both teachers and students lacked Internet connectivity for communication and access to online resources.

These general results led to a general categorization of "Ineffective" in the variable "Use of ICT", with a mean of 2,21. These results are surprising in the context of ICTs, which are considered tools with significant potential to improve education and communication, especially for people with disabilities. However, a certain similarity was found with previous research that highlighted that students have little access to ICTs but show interest in accessing them.[32]

Regarding the "Educational Inclusion" variable, the results also revealed weaknesses in the inclusive culture, inclusive policies and inclusive practices, with means of 1,99, 2,20 and 2,44, respectively. This indicates that both teachers and students face difficulties in building a school community based on mutual respect and do not provide opportunities for students to actively interact with their environment. In addition, families are not adequately involved in the formation of an inclusive educational community.[33]

These results led to a general categorization of "Insufficient" in the variable "Educational Inclusion", with a mean of 2,21. This contradicts the idea that educational inclusion should be a dimension that involves all actors in the school community and highlights the importance of addressing factors such as government support and technical training to improve inclusive culture and educational policies.

Table 4. Results of Means of the variables Use of ICT and Educational Inclusion.

Variable	Dimension	Teachers	Students	Half	Analysis Category
Use of ICT	Personal skills	2,13	1,64	1,89	ineffective
	ICT access	2,92	2,15	2,54	ineffective
	Variable	2,52	1,89	2,21	ineffective
Educational Inclusion	Inclusive Culture	2,20	1,78	1,99	Insufficient
	inclusive policies	2,40	2,00	2,20	Insufficient
	inclusive practices	2,78	2,10	2,44	Insufficient
	Variable	2,46	1,96	2,21	Insufficient

These results underline the urgent need to develop a model based on the use of ICT to improve the educational inclusion of students with diverse educational needs in the District Educational Institutions of commune 4 of Santa Marta, Colombia. These deficiencies identified in the studied population underscore the importance of addressing and overcoming challenges in promoting a truly inclusive and accessible education for all students.

Educational Inclusion Model through the Use of ICT for students with diverse educational needs

The model based on the use of ICT for the inclusion of students was designed based on the management of educational inclusion of all the actors involved in the process through the institutional culture,

establishing universal values such as respect, solidarity and camaraderie, aspects that have a transversal impact on educational intervention and the processes of mediation and evaluation. This means, respecting the school inclusion policies aimed at students with different conditions to learn; adapting the aspects in contents, objectives, methodology and evaluation, to consolidate an interactive learning that tends to improve and innovate the educational praxis.[34]

The purpose of this model is to provide the teachers of the district educational institutions of commune 4 of the city of Santa Marta-Colombia, theoretical references that guide the use of ICT for the inclusion of students with diverse educational needs, emphasizing the personal skills that favor access to ICTs; as well as educational inclusion through the leading participation of all educational actors, strengthening the process of appropriation of the application of inclusive practices towards the academic and successful performance of students.

Graphically, this model is represented according to figure 1. Next, figure No. 1 is presented.

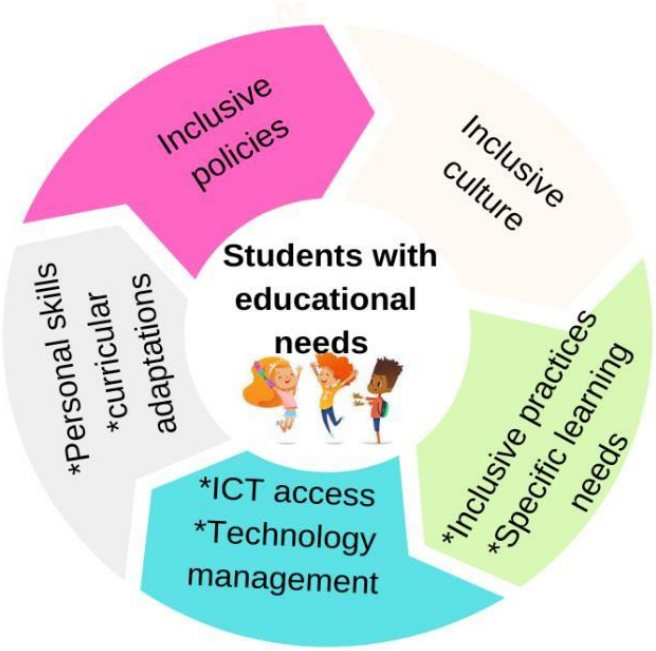

Figure 1. Model-based on the use of ICT for the Inclusion of Students with SEN

The use of information and communication technologies (ICT) can be a key factor to improve the educational inclusion of students with various educational needs (NED), such as cognitive, sensory or motor. These tools can help overcome limitations, foster autonomy, and provide feedback in both real-time and asynchronous communication. In addition, they allow individualized training that adapts to the pace, style and needs of each student, which is essential for those with NED.

ICTs involve the five senses of students and can arouse their interest, improve their attention and facilitate the development of visuo-motor skills. However, it is essential to highlight that the success of its implementation depends not only on the availability of technology, but also on the preparation and awareness of the teacher in this transformative era.

The personal skills of teaching staff are crucial to carry out effective teaching with the support of ICT. These skills go beyond practical knowledge and encompass personal attitudes and commitments. They imply the ability to apply knowledge and skills in different contexts and require cognitive processes such as understanding, reflection and discernment.

Access to ICT is essential for teachers to be able to plan and develop their classes effectively, taking advantage of the information resources available in educational institutions. Access opportunities in schools can lead to new educational management practices and interactive pedagogical methodologies.

An inclusive culture, based on values shared by all educational actors, is essential to ensure that each student is valued and accepted in the school community. This means respecting the individuality of each student and ensuring that their diverse educational needs are addressed.

ICTs can play a crucial role in the educational inclusion of students with NED, but their effective implementation requires both adequate access and the development of personal skills and an inclusive culture in educational institutions. However, the current results indicate that challenges remain in this regard, which underlines the importance of addressing this issue at the level of policies, practices and inclusive culture to ensure quality and meaningful education for all students.

DISCUSSION

Based on the findings made and presented in this article, which takes ICT and influence in the inclusive field of people with diverse abilities as a starting point, the information collected was contrasted with the arguments presented by Bolaño-García (2022),[35] who urges the implementation of these tools to support educational work in classrooms and guarantee educational equity.[36] However, the panorama found exposes an x-ray in which ICTs, despite being present, are seen only as palliatives and passive resources that do not transcend their most basic use.[37]

Likewise, Alba & Zubillaga (2012)[38] specify that the interest of students in achieving self-incorporation into the social and educational field is constant, in this scenario the quality and access to ICT is a predominant characteristic, this means that the culture of inclusion in which the student develops has a significant influence, but the data once organized shows that this weighting is equal to 1,99 %, which is insufficient, making clear the existing problems in terms of communication , collaboration and coordination of activities.[39]

In summary, the existing panorama is complex, this situation is exacerbated for people who have a special condition, due to the low development of a culture, policies and practices that promote and guarantee the maintenance of inclusion, the existing pedagogy is rooted in trends disjointed from the reality and particular needs of the student community, this agrees with Escribano & Martínez (2013),[40] pointing out that an inclusive educational environment guarantees educational quality.[41,42,43,44]

In this sense, it is worth saying that classrooms must be environments for the student and the teacher to experience and live reality. Technology helps in this interaction.[45] This maxim is being left aside in many cases, since by not incorporating it in effective and recurring way to address the problems that may arise, the existence of individuality is ignored.[46]

Taking into account the reality presented, in the future if something is not done in terms of policies, practices and inclusive culture, the situation could worsen, it is reasonable to imagine that the number of students with disabilities as well as income increases, therefore, the scenario in which it is developed, if it is maintained it is not adequate, the guarantees are few, quality training would be a utopia that recedes with the passing of the days.[47] Guaranteeing an education that acquires social meaning originates from the changes made at the institutional level, the diversity that exists in the classroom requires the staff and teachers to seek and innovate in their pedagogical praxis.

CONCLUSION

When characterizing the personal skills in the use of ICT of students with NED belonging to the IED of commune 4 of the city of Santa Marta-Colombia, it was found that in general these skills are ineffective both in teachers and in students, the Handling tools such as spreadsheets and presentations were the least favorable for both groups, to a lesser extent, but in the same category, their personal skills for handling Internet browsers were inefficient.

After identifying that access to ICTs, it is concluded that it is ineffective, both for the ICT devices used, as well as for the place of Internet connection and the conditions of access to the network, which limits the possibility of establishing effective communication. between teachers and students.

In this sense, permanent and quality access to ICTs is essential to guarantee the incorporation of the population in a situation of vulnerability, since the programs and software specialized in the individual characteristics of these groups are posted on the network, therefore, the action of generating inclusion ceases to make sense, without use, endowment and adequate infrastructure, ICTs are configured as palliatives before the problems that afflict public institutions.

Regarding the inclusive culture, it is present that both the construction of communities oriented to principles and the establishment of inclusive values in the educational intervention were insufficient, that is, there are few efforts by teachers and students to build a school community with the philosophy of respect. for the others.

Which shows a scenario in which change is presented as an alternative that little has been taken into

account, due to precarious efforts on the part of the teacher, therefore, it is estimated that the curriculum and guidelines that the educator follows do not conceive inclusion. or if they do it barely borders on this constant. Keeping in mind that the student is influenced by the teacher who orchestrates the classroom climate, the situation is repeated in the behavior of his pupils.

Inclusive policies, participation and support actions to address diversity were also insufficient, making it difficult for teachers and students, their opportunities to interact harmoniously with the environment where they operate.

On the inclusive practices applied in the IED of commune 4 of the city Santa Marta-Colombia, the indicators of organization of learning for the improvement and innovation of educational praxis and mobilizing resources for endowment and educational investment, were insufficient, weakening the possibilities of teachers and students in the integration of the family to the conformation of school for parents by school grade.

REFERENCES

1. Aguilar AE, Saavedra MO, Ruíz GCR, Lepez CO. Research competencies in nursing teachers. Salud, Ciencia y Tecnologia 2024;4. https://doi.org/10.56294/saludcyt2024705.

2. Alba C, Zubillaga A. La Utilización de las TIC en la Actividad Académica de los Estudiantes Universitarios con Discapacidad. Rev Complut Educ. 2012;23(1):23-50. https://doi.org/10.5209/rev_RCED.2012.v23.n1.39100.

3. Araújo CAÁ, González-Valiente CL. Towards an Ibero-American informational thinking. Bibliotecas, Anales de Investigacion 2019;15:137-9.

4. Bispo FD, Vital LP. The use of controlled vocabulary to combat organized crime in the Federal Police. Advanced Notes in Information Science 2023;4. https://doi.org/10.47909/anis.

5. Bolaño García M, Duarte Acosta N. Competencies in the use of ICT of students with diverse educational abilities (CED); 2019.

6. Bolaño García M. Educational technologies for inclusion. 1st Edition. Editorial Unimagdalena; 2022. ISBN: 978-958-746-474-0.

7. Booth T, Ainscow M. Index for Inclusion: developing learning and participation in school. 3rd edition. Bristol: Center for Studies in Inclusive Education (CSIE); 2011.

8. Cabero-Almenara J, Fernández-Batanero JM, Córdoba-Pérez M. Knowledge of ICT applied to people with disabilities. Construction of a diagnostic instrument. Magis Int J Res Educ. 2016;8(17):157-176. doi: 10.11144/Javeriana.m8-17.ctap.

9. Casani PPP. Crónica del desastre: el terremoto de 1868 en Moquegua. Sincretismo 2020;1.

10. Céspedes A, et al. Road to an inclusive school. 1st Edition. Look at me foundation Chili. Accessed online June 11, 2017. http://www.upla.cl/inclusion/wp-content/uploads/2014/07/2014_0731_inclusion_documentos_interes_escuela_inclusiva.pdf.

11. Chaparro-Montoya EE, Vera-Alcázar MM, Herrera-Córdova FB, Barahona-Sánchez JC. Utilización de microorganismos eficientes para la elaboración de compost a partir de residuos orgánicos. Sincretismo 2020;1.

12. Contreras JG, Rodríguez AU, Gaviño AS. Comportamiento Organizacional para el Balance Integral Humano desde la NOM-035 en escenario post-pandemia COVID-19. Revista Científica Empresarial Debe-Haber 2023;1:41-57.

13. Escribano A, Martínez A. Educational Inclusion and Inclusive Teachers: Learning Together Learning to Live Together. Editions Narcea SA Madrid Spain; 2013. Accessed online 06/11/2017 at https://books.google.com.co/books?id=78i2cjCiNooC&printsec=frontcover&dq=inclusi%C3%B3n+educativa&hl=es-419&sa=X&redir_esc=y#v=onepage&q=inclusi%C3%B3n%20educational&f=false.

14. Filho JFP. Information Management Applied to Police Sciences: a perspective of organizational culture and innovation for public safety. Advanced Notes in Information Science 2023;4. https://doi.org/10.47909/anis.

15. González J. ICT and the Transformation of Educational Practice in the Context of Knowledge Societies. Univ Knowl Soc Mag. 2008;5(2):1-8. Available at http://www.raco.cat/index.php/RUSC/article/viewFile/253964/340751.

16. Gonzalez-Argote J, Lepez CO. Strategies to raise the standards of quality, standardization, visibility and scientific impact of the Master's Degree in Integrated Management of Nursing Services. Salud, Ciencia y Tecnologia 2022;2. https://doi.org/10.56294/saludcyt202247.

17. González-Valiente CL, Costas R, Noyons E, Steinerová J, Šušol J. Terminological (di) Similarities between Information Management and Knowledge Management: a Term Co-Occurrence Analysis. Mobile Networks and Applications 2021;26:336-46. https://doi.org/10.1007/s11036-020-01643-y.

18. González-Valiente CL, Pacheco-Mendoza J, Arencibia-Jorge R. A review of altmetrics as an emerging discipline for research evaluation. Learned Publishing 2016;29:229-38. https://doi.org/10.1002/leap.1043.

19. González-Valiente CL, Sariol Roque DL, Sánchez Rodríguez Y. Scientific production on e-learning in Latin America, a preliminary study from SciELO database. Revista Cubana de Educacion Medica Superior 2015;29:155-65.

20. Gupta BM, Kappi M, Walke R, Bansal M. Covid-19 research in Bangladesh: A scientometric analysis during 2020-23. Iberoamerican Journal of Science Measurement and Communication 2023;3. https://doi.org/10.47909/ijsmc.445.

21. Hernandez B, Vital LP. Déjàvu Project as a digital solution to help the appraisal of documents focused on digital humanities. Advanced Notes in Information Science 2023;3:22-46. https://doi.org/10.47909/anis.978-9916-9906-1-2.45.

22. Kappi M, Biradar BS. Quantifying the influence of Indian optics research: An index based on three citation indicators. Iberoamerican Journal of Science Measurement and Communication 2023;3. https://doi.org/10.47909/ijsmc.39.

23. Kings U. Development of Personal and Social Skills of People with Personal Needs. Editorial Narcea SA Madrid Spain; 2015. Retrieved from https://books.google.com.co/books?id=4fbCCgAAQBAJ&printsec=frontcover&dq=habilidades+personales&hl=es-419&sa=X&redir_esc=y#v=onepage&q=habilidades%20personales&f=false.

24. Lepez CO, Eiguchi K. Managerial vision of the professional competencies of nursing graduates and their relationship with job placement. Data and Metadata 2022;1. https://doi.org/10.56294/dm202266.

25. Lepez CO. Argentine higher education in the COVID-19 pandemic and in the postpandemic period. Salud, Ciencia y Tecnologia 2021;1. https://doi.org/10.56294/saludcyt202116.

26. Lizcano PAC, Quintero YCM, Cano CAG. Análisis del impacto en la implementación de la facturación electrónica en el sector automotriz en la ciudad de Florencia, Caquetá. Revista Científica Empresarial Debe-Haber 2023;1:25-40.

27. Lopez, Yotadri. ICT as mediators of learning in boys and girls with diverse educational needs in transition and first grades. Pedagogical Trails. 2019;10:121-143. Available at: https://ojs.tdea.edu.co/index.php/senderos/article/view/660.

28. Marqués Graells P. Posibilidades de las TIC en Educación Especial. Recuperado de http://www.peremarques.pangea.org/; 2002.

29. Marqués P. Educational Evaluation and Research: Basic Competences in Information and Communication Technologies (ICT). Ministry of Education, Culture and Sports of the Government of the Canary Islands. Canarian Institute for Educational Evaluation and Quality (ICEC). Canary Islands; 2004.

30. Martínez LC, Rodríguez AU, Mendoza VVS, Cañarte BJS. Turismo y actividad económica estratégica para el desarrollo local en México. Revista Científica Empresarial Debe-Haber 2023;1:75-86.

31. Mendivil E, Chinchilla G, Portillo N. Analysis of the Labor Inclusion of the Orda Population in Santa Marta. Solidarity Engineering. 2013;9(16):39-48. Accessed online 12/27/2016. http://revistas.ucc.edu.co/index.php/in/article/download/526/500.

32. Milagros APC, Jesús MLP. Nivel de articulación del plan estratégico regional exportador - PERX Puno con el cuarto eje estratégico del Plan Bicentenario 2012-2014. Sincretismo 2020;1.

33. Naveros JI, Vasquez RM, Lima YD. Contaminación por metales pesados (As, B, Cd, Cr, Cu, Fe, y Pb) en sedimentos superficiales del estuario Boca del Río, Ilo, Moquegua, Perú 2021. Sincretismo 2021;2.

34. Perez T. The school climate, a key factor in quality education. Colombia: National Ten-Year Education Plan, 2016; 2006.

35. Sánchez O. ICT, Human Rights and Development: New Scenarios of Social Communication. Analisi. 2009;38(1):55-69. Retrieved from http://www.raco.cat/index.php/analisi/article/viewFile/142472/194027.

36. Sarramona J. Basic Competences at the End of Compulsory Schooling. Rev Educ. 2007;(322):0255-288. Consulted online on February 11, 2017. https://scholar.google.es/scholar?hl=es&q=COMPETENCIAS+B%C3%81SICAS+AL+T%C3%89RM+OF+COMPULSORY+SCHOOL&btnG=&lr=.

37. Severin E. Information and Communication Technologies (ICTs) in Education. Editorial Technical Notes #6, Colombia; 2010. Retrieved from https://publications.iadb.org/bitstream/handle/11319/3641/Tecnolog%C3%ADas%20de%20La%20Informaci%C3%B3n%20y%20La%20Comunicaci%C3%B3n%20%28TIC%29%20en%20Educaci%C3%B3n.pdf?sequence=1.

38. Shettar I, Hadagali GS, Timanaykar R. Scientometric mapping of global publications on pulmonary embolism in Covid-19 research. Iberoamerican Journal of Science Measurement and Communication 2023;3. https://doi.org/10.47909/ijsmc.524.

39. Soledispa GBL, Cañarte BJS, Soledispa VAC, González ORF. Análisis de la Cadena de Suministros en las empresas industriales de Guayaquil, Ecuador. Revista Científica Empresarial Debe-Haber 2023;1:3-24.

40. Soriano E, González A, Cala V. Challenges of Education and transcultural health. Publishing University of Almería Spain. Retrieved from https://books.google.com.co/books?id=gnrMAwAAQBAJ&pg=PT785&dq=cultura+inclusiva&hl=es-419&sa=X&redir_esc=y#v=onepage&q=cultura%20inclusiva&f=true ; 2014.

41. Tiwari P, Chaudhary S, Majhi D, Mukherjee B. Comparing research trends through author-provided

keywords with machine extracted terms: A ML algorithm approach using publications data on neurological disorders. Iberoamerican Journal of Science Measurement and Communication 2023;3. https://doi.org/10.47909/ijsmc.36.

42. Toza JFP, Paniagua DGC. Responsabilidad social empresarial y calidad de servicio en una Caja Municipal de Ahorro y Crédito de la región Tacna. Sincretismo 2021;2.

43. Uchôa AP de M, Sales R de. The importance of using ontologies as a tool for organizing and representing knowledge in police investigation. Advanced Notes in Information Science 2023;4. https://doi.org/10.47909/anis.

44. Uman JMM, Arias LVC, Romero-Carazas R. Factores que dificultan la graduación: El caso de la carrera profesional de contabilidad en las universidades peruanas. Revista Científica Empresarial Debe-Haber 2023;1:58-74.

45. Vaishya R, Gupta BM, Kappi M, Vaish A. Fracture research from India between 1989 to 2022: A scientometric study. Iberoamerican Journal of Science Measurement and Communication 2023;3. https://doi.org/10.47909/ijsmc.35.

46. Vasquez-Orjuela D. Educational inclusion policies: a comparison between Colombia and Chile. Educ Educators. 2015;18(1):45-61.

47. Viola HH de G, Pinto MD de S. Digital humanities and visual project management: Use of tools in libraries. Advanced Notes in Information Science 2023;3:47-65. https://doi.org/10.47909/anis.978-9916-9906-1-2.47.

RECOMMENDATION

To the teachers:

- It is recommended to plan and participate in continuous training programs to improve skills in the use of ICT and develop new pedagogical strategies that integrate these technologies effectively in the learning of students with NED.
- Consider individuality: Recognize that each student is unique and adapt teaching strategies to address their specific needs.

To management staff:

- Improvement of resources and access: Work to improve the available technological resources and Internet access in educational institutions to ensure that ICTs are effective inclusion tools.
- Inclusive Policies: Promote inclusive educational policies that support appropriate care and support for students with NED.
- To Teachers and Administrative Staff: Guarantee that teaching staff implement inclusive practices in their teaching, coordinating actions to promote learning for all students, regardless of their educational needs.
- Awareness-raising and training: Carry out awareness-raising and training activities on inclusion aimed at both teachers and students and parents to promote a more inclusive school environment that is respectful of diversity.

To the community, in general:

- Promote an inclusive culture in educational institutions, promoting values shared by the entire educational community. In addition, it is crucial to ensure that all members of the community are informed about the inclusive laws and policies that govern the care of students with NED.

FINANCING.

The authors did not receive funding for the development of this research.

CONFLICT OF INTEREST.

The authors declare that there is no conflict of interest.

AUTHORSHIP CONTRIBUTION.

Conceptualization: Matilde Bolaño-García.
Data curation: Matilde Bolaño-García.
Formal analysis: Matilde Bolaño-García.
Acquisition of funds: Matilde Bolaño-García.
Research: Matilde Bolaño-García.
Methodology: Matilde Bolaño-García.
Project management: Matilde Bolaño-García.
Resources: Matilde Bolaño-García.
Software: Matilde Bolaño-García.
Supervision: Matilde Bolaño-García.
Validation: Matilde Bolaño-García.
Visualization: Matilde Bolaño-García.
Drafting - original draft: Matilde Bolaño-García.
Drafting - proofreading and editing: Matilde Bolaño-García.

https://doi.org/10.56294/sctconf2023517