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Inclusive and quality education development for the full growth of people with disabilities in Nicaragua



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Formación profesional inclusiva y de calidad para el desarrollo integral de las personas con discapacidad en Nicaragua

Abstract

The National Technical and Technological Institute has been guaranteeing the holistic development of people with disabilities in Nicaragua through inclusive and quality vocational training. This research presents results, with a qualitative approach, determined that people with disabilities have opportunities for technical training, which allows them to be active subjects in the labor market and in the country's entrepreneurship system. This has been possible thanks to national human development policies and plans, whereby establishing inclusive education as a work model that has been implemented since 2007. Interviews, focus groups and documentary analysis confirm sustained progress and achievements, with the perspective of continuing promoting care with quality and warmth of training programs and projects from inter-institutional coordination, for the greater wellbeing of people with disabilities and their families.

Keywords: human development, people with disabilities, vocational training, social inclusion, quality of life.

Resumen

El Instituto Nacional Técnico y Tecnológico ha estado garantizando el desarrollo integral de las personas con discapacidad en Nicaragua a través de la formación profesional inclusiva y de calidad. En este texto se presentan los resultados de una investigación con enfoque cualitativo en la que se determinó que las personas con discapacidad cuentan con oportunidades para su formación técnica, que les permite ser sujetos activos en el mercado laboral y en el sistema de emprendimientos del país. Esto ha sido posible gracias a políticas y planes nacionales de desarrollo humano, que establecen la educación inclusiva como un modelo de trabajo que se implementa desde el año 2007. Los datos obtenidos de entrevistas, grupos focales y análisis documental confirman los avances y logros sostenidos, con perspectiva de continuar potenciando la atención con calidad y calidez de programas y proyectos formativos desde la articulación interinstitucional, para mayor bienestar de las personas con discapacidad y sus familias en Nicaragua.

Palabras claves: Desarrollo humano, personas con discapacidad, formación profesional, inclusión social, calidad de vida.

Introduction

In Nicaragua, inclusive and quality vocational development for people with disabilities is guaranteed. According to Law 763, Law on the Rights of Persons with Disabilities (2011), they have the right to fully and effectively participate in programs and projects implemented by the National Technical and Technological Institute (Instituto Nacional Técnico y Tecnológico, INATEC), enhancing their labor and entrepreneurship competencies.

Results of a qualitative investigation analyzing advancements and achievements of the technical training of people with disabilities, during the period of 2007-2023, are presented. The formative model implemented and aligned to national and international policies is highlighted, as well as transformational experiences in protagonists' life, who, by having the chance

of training themselves, have gotten a job or started their own businesses.

Holistic development in this research is raised as positive changes in people with disabilities, including the adoption of thinking based in the enforcement of their rights, assuming knowledge, attitudes, and actions transferred in INATEC's vocational development model, engaging as active subjects, compromised with their own transformation.

In its National Competency-Based Model of Technical and Vocational Development Education (2018), INATEC established inclusion as a priority and transversal axis for the implementation of strategies guided to employment insertion of people with disabilities, through technical and vocational development in an individually and collectively (p. 5).

Epistemology of inclusive and quality vocational development in Nicaragua

Inclusive and quality vocational development has as strategic framework inclusive special education in Nicaragua. It demonstrates a holistic and compromised approach with inclusive education, encompassing national and international operationalized policies territorially, with the aim of ensuring equitable access to education for all citizens.

The Government of Reconciliation and National Unity (Gobierno de Reconciliación y Unidad Nacional, GRUN) prioritizes inclusion in all their policies and programs, reflecting a compromise with the population's integral wellbeing, substantiated in the Millennium Development Goals (MDGs), Sustainable Development Goals (SDGs), as well as the Convention on the Rights of Persons with Disabilities. These integrate a holistic approach with the goal of guaranteeing equality of opportunities in free education at all levels. National development plans from 2007, and 2026 projection, prioritize inclusive and quality education as a key

element of social transformation and full human development of Nicaraguans.

Inclusive and quality vocational development

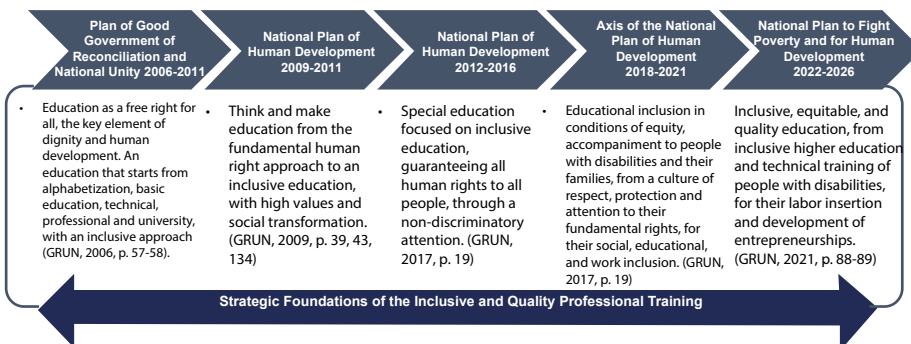
Vocational development aligns with the fourth SDG, guided to inclusive and equitable education for all. From this overall strategic approach, Law 1063, INATEC's regulatory law, are progressive initiatives applied from the qualification, complementation and technical specialization, as well as worker certification with experiences and without title.

Inclusive and quality vocational development are operationalized in the Institutional Strategic Plan 2022-2026, therefore, the INATEC defined reinforcing joint work with the Cabinet of Power of Persons with Disabilities, directed to labor insertion and entrepreneurship development (GRUN, 2021, p. 93).

Programs and strategies of vocational development answer to guidelines from the National Plan to Fight Poverty and for

Figure 1

National plans of human development and foundations of the inclusive and of quality vocational training



Own Work adapted from GRUN, 2006, 2009, 2013, 2017, 2021.

Human Development 2022 – 2026, which guide attention with quality and solidarity to people with disabilities from an essential focus, as a national priority, amplifying coverage and educational equity for their technical development and labor insertion and entrepreneurship (GRUN, 2021).

People with disabilities’ integral development

The National Competency-Based Model of Technical and Vocational Development Education states the formative process is an opportunity for holistic transformation, guided to becoming aware until improving levels and vocational quality to contribute to Nicaragua’s economic and social development (INATEC, 2018, p. 6).

This perspective answers to Venegas’s (2022) approach, who states education, as a vital process in people’s holistic development, must ensure conditions to

improve individual and social performance from basic needs to the motivation of applying and use of competencies and capacities with the aim of getting decent wellbeing levels.

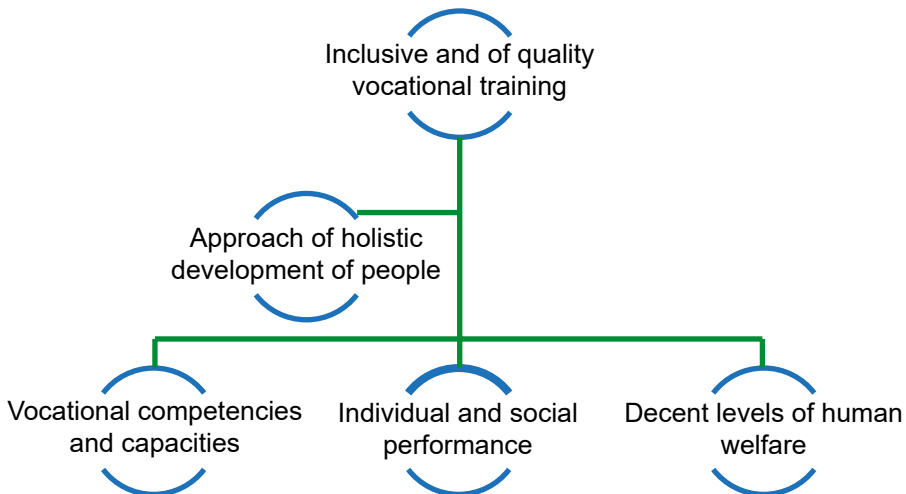
Programs and strategies of inclusive and quality vocational development have been guided from the perspective of people with disabilities’ holistic development, who have acquired competencies and capacities for a dignified life, allowing them to be achievement examples in their families and communities.

Materials and methods

The investigation took the qualitative approach. Escudero & Cortez (2018) mention this approach records studied events or phenomena, applying techniques like interview, focus groups, and documentary analysis. Likewise, the qualitative method was applied. Cadena-Iñiguez et al. (2017),

Figure 2

Perspective of the holistic development in the inclusive and of quality vocational training



Own Work complied by authors based on the database if INATEC, 2018.

express it analyzes the stage and people from a holistic perspective, considering aspects related to experiences and practices of study subjects, to understand from their own reference framework.

The research was supported by the interpretative paradigm, through phenomenon elucidation and situational analysis. This type of research is founded on the reality comprehension, deepening in the “meanings of subjects in mutual interaction and has full sense in the culture and in the peculiarities of everyday life” (Ricoy, 2006, p. 17). As of the present paradigm are analyzed “experiences for the world understanding and recognize in the configuration of subjectivities, the influence of historical, culture, and social aspects” (Beltrán & Ortiz, 2020, p. 9). Result analysis as from this paradigm allowed to identify changes in people with disabilities who have participated in programs and projects of inclusive and quality vocational development implemented by INATEC.

Results and discussion

Implementation of the model of inclusive and quality vocational training for people with disabilities in Nicaragua

Training and labor inclusion for people with disabilities.

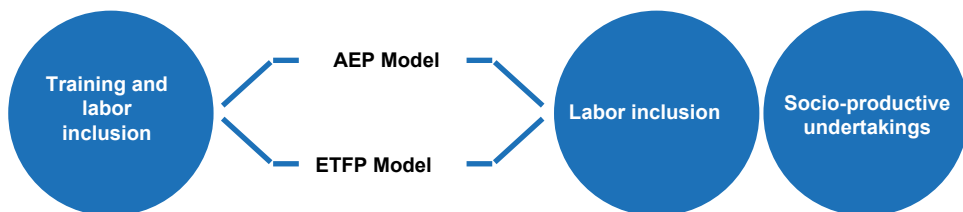
Training and labor inclusion for people with disabilities implemented by INATEC is over the base of the model of Learn, Innovate, Succeed (Aprender, Emprender, Prosperar, AEP) and Competency-Based Model of Technical and Vocational Development Education (Modelo de la Educación Técnica y Formación Profesional Basado en Competencia, Modelo ETFP), which requires training qualified technicians, both technically and in values enforced an entrepreneurial and peaceful culture, contributing to prosper as person, family and community (INATEC, 2018, p. 6), with programs for labor insertion and abilities growth for socio-productive undertakings (GRUN, 2023, p. 14).

INATEC ensures development and labor inclusion to people with disabilities in all the country through strategic partnerships with the Cabinet of the Power of Persons with Disabilities and State institutions, consistent with Law 763:

The State through the Ministry of Work, National Technological Institute, Nicaraguan Institute of Social Security and other public institutions, will support the labor insertion of people with disabilities, through the policies of technical and vocational training individually and collectively. (Ch. 4, art. 35)

Figure 3

Models of the training and labor inclusion of people with disabilities from INATEC



Own Work gathered from GRUN, 2023; INATEC, 2018.

To comply with this mandate, INATEC has competent and updated teachers who apply learning and special methods, and relevant pedagogical tools. Also, curricula and syllabuses are ensured for inclusive practices enabling actors' engagement and protagonism in the educational process, endorsing competencies enhancement for people with disabilities employability and allows them to get job opportunities or boost their socio-productive entrepreneurships.

According with the interview results, it was identified experiences of protagonists who; after going through their development process, they have started small businesses such as barbershops, wardrobes elaboration and design, piñatas, jewelry, fruit-based wine and vinegars, among other products. Labor inclusion of people with disabilities has been a personal and family positive experience.

The history of a 19-year-old young man with psychomotor cerebral palsy, Illustration Techniques protagonist in the Cultural and Polytechnic Center José Coronel Urtecho, Managua is an outstanding case. He shares "this experience of studying and acquiring abilities will allow me to find a job, which is great". Also, states: "my goals are getting to be a graphic design professional" (personal communication, July 20, 2023).

In the research, another experience of a man of 45-year-old with physical motor disability was identified, Maintenance of Auxiliary Engine Systems protagonist on the Francisco Rivera "El Zorro" Technological Center, Estelí. He shares his motivation: "the one who doesn't study is because they don't want to, but to me nothing stops me from studying, because I like this". He highlights: "Nothing prevents me from anything, because I can get under a car to

work, there is no need for me to have two legs" (Personal communication, May 5, 2021). The protagonist manifests his future project is to install his own mechanical workshop to support more families by giving jobs to people. Likewise, expresses his interest to keep studying.

It also stresses a woman's experience, senior citizen and with visual impairment, different courses protagonist: Nectar and preserves production, marmalades, chillies, pickles, Wines elaboration and chiropractic massages, as well as Basic computation with Jaws application for blind people, in the Monseñor Benedicto Herrera Technological Center in Managua. Regarding this, she expressed: "These courses have not only helped me to be independent, but also in the organizational and politic development, because I received computer science, very important for my personal life and the councilor work I'm currently performing" (Personal communication, March 5, 2020).

This example reflects the determination of people with disabilities, who take advantage of the opportunities offered by INATEC to grow and excel in life.

A curriculum suitable for people with disabilities

The National Technical and Technological Institute has been in an evolutionary transformation process, aiming to answer the demand of national population and productive sectors. Between the most significant aspects achieved in the last 16 years are the elaboration of formative modules, didactical guides, primers, and vocational development offer manuals, with contributions and demands from sectors of people with disabilities in the country.

The institution has been creating an inclusive curriculum applied to people with disabilities' context, which requires characteristics part of the surroundings and daily activities for the dignification from their rights restitution enabling them to labor and productive inclusion.

Delors (1994) arises a curriculum must address cognitive, emotional and creative aspects above the foundation of:

Learning to know, namely, acquiring comprehension instruments; learning to do, to being able to influence over their own surroundings; learning to live together, to participate and cooperate with others in all human activities; lastly, learning to be, a fundamental process includes elements from the three above. (p. 1)

These aspects, referred by Delors, have been retaken in the curricular process and applied on different professional development programs and strategies for the attention of people with disabilities with quality and warmth, originating from the countryside and city.

The curriculum pertinence has been guaranteed by the institutional compromise of addressing people with disabilities' needs, who participate not only in the development, but also courses design identified collaboratively, consistent with the *National Competency-Based Model of Technical and Vocational Development Education*, guiding curricular updating, inclusion of disability as transversal axis and attention to diversity (INATEC, 2018).

Empirical workers with disability certification

The certification of labor competencies is a free process INATEC develops to assess and certify abilities, skills and knowledge a person must meet for a function or specific labor. Particularly, the institution has referents and evaluation instruments, and certification implemented for people with disabilities.

Among its results, instructors and interpreters in Nicaraguan sign language have been certified in reading and writing in Braille system, orientation and mobility for blind people, visual guide for blind people from different territories. All these efforts have been accompanied by the Cabinet of the Power of Persons with Disabilities. The evaluators' additions to the guild have been determinants in instruments creation for their application.

Among the conducted interviews, a mother's experience with hearing impairment is mentioned, certified as instructor of Nicaraguan Sign Language, who shares: "I feel joyful for receiving this certificate to work in the future already accredited, but I also have the desire to continue studying" (personal communication, December 19, 2018).

Specialization for the attention with quality and warmth to people with disabilities

In 2023, Nicaragua has been placed in the vanguard on attention to people with disabilities. This is displayed on the creation of the new Centro de Capacitación Comandante Carlos, national referent center for specialized development on quality and warmth attention for people with disabilities, where public workers, territory and Sandinista Youth are being taught to

contribute to inclusion in educational and community programs.

A teacher of the Centro Tecnológico Simón Bolívar was interviewed, trained on Support Tools for People with Visual Impairment, who states the value of having a guide to support people with disability who study in the center (personal communication, October 26, 2023).

Likewise, a public worker with disability, who has participated on the coordination of the education in this center, during an interview manifested:

This work, that we have been doing for the center's operation and strengthening of public workers' capacities, has been very important. We thank the government for guaranteeing these rights and facilitating growth and technical development. It is a step forward to improve the attention of people with disabilities. (personal communication, July 3, 2023)

Study results show the integral growth progress towards public workers, who expressed their compromise of sustaining attention to people with disabilities, applying the acquired knowledge from instances where there is an opportunity to serve.

Vision of collaborative work for attention to people with disabilities

The Inclusive Professional and Quality Education is aligned with the growth line and transformation, rooted on the integral model to reduce poverty and inequalities. It has human beings, families and communities at the center. Likewise, it is grounded on the model of shared responsibility, through the collaboration

between educational subsystems, which promote, manage and develop educational inclusive plans and projects.

INATEC enacts programs and strategies of professional growth, aiming to answer people with disabilities' needs, coordinated with the Cabinet of Citizens Power for Persons with Disabilities and GRUN institutions, from which can be mentioned the National Education System conformed by the National Technical and Technological Institute (Instituto Nacional Técnico y Tecnológico, INATEC), Ministry of Education (Ministerio de Educación, MINED), Regional Autonomic Educational Subsystem (Subsistema Educativo Autonómico Regional, SEAR), and National Council of Universities (Consejo Nacional de Universidades, CNU), along with Ministry of Health (Ministerio de Salud, MINSAL), Ministry of Youth (Ministerio de la Juventud, MINJUVE), Ministry of Family (Ministerio de la Familia, MIFAM), Ministry of Work (Ministerio del Trabajo, MITRAB), Ministry of the Interior, Procuracy Office for the Defense of the Human Rights (Procuraduría para la Defensa de los Derechos Humanos, PDDH), and other institutions to comply with Law 763, Law of the Rights of People with Disabilities.

Advances and achievements of inclusive and quality educational learning in Nicaragua

Attended population: in the period 2007-2020, 25,000 people with visual, auditory and physical motor disabilities were attended (El 19 Digital, August 25, 2020). Between 2022 and 2023, a total of 28,252 persons with different disabilities and public servers of the country received training.

Didactic documents created and applied for the attention of people with disabilities, instructors, interpreters, and public servers: On the literary review the identification of training modules, didactic guides, passbooks, manuals and audios for the development of courses and certification of work competencies were found, which comply with needs and expectations of people with disabilities requirements. Requested themes are mainly guided to commerce and agricultural sectors and forestry services, as well as specific development offer for public workers and certification of working competencies for people with disabilities.

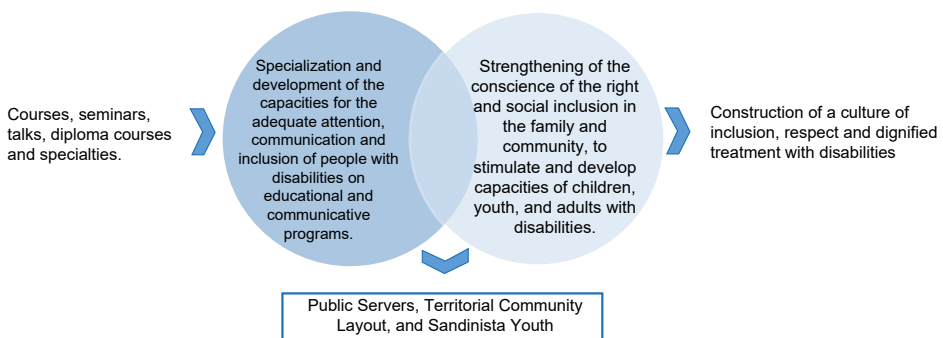
Strengthening the creative, entrepreneur and victorious economy of people with disabilities. Complying with the National Plan to Fight Poverty and for Human Development 2022-2026, INATEC advances with “vocational training people with disabilities for their labor insertion and entrepreneurship development” (GRUN, 2021, p. 93). Interviews and literary review show results of the creative, entrepreneurial

and victorious economy of people with disabilities, once strengthened their competencies, they have entrepreneurship which ensure an income and improved their personal and family economy.

Promotion of people with disabilities wellbeing through innovative initiatives. Development of an inclusive and quality professional training is implemented simultaneously with INATEC’s permanent process, which promotes equality and opportunities for everyone, with the teachers and students’ engagement of technological centers, generating ideas of creative and innovative projects to address people with disabilities’ reality.

It was identified the platform of Innovation and Technologies Hackathon Nicaragua, in 2017, 2020 and 2023, multidisciplinary teams participating included the theme of disability. Interviewing a first-place student of the winner project Elemental Brainers, in 2017, expressed: “We developed a virtual interpreter for deaf people so they can, with this application, record what is being said by

Figure 4
Approach to the creation of the Training Center Comandante Carlos



Own Work

Table 1

Themes demanded by people with disabilities, instructors, interpreters and public workers.

Themes with demand by people with disabilities from the commerce and service sector	Themes aimed to public workers of the GRUN institutions
<ul style="list-style-type: none"> Administration of Small Businesses 	<ul style="list-style-type: none"> Right and dignity of people with disabilities
<ul style="list-style-type: none"> Paper and foamy crafts 	<ul style="list-style-type: none"> Promotion, prevention and integral attention to people with disabilities
<ul style="list-style-type: none"> Computation with Jaws application 	<ul style="list-style-type: none"> Introduction to professional rehabilitation
<ul style="list-style-type: none"> Haircut 	<ul style="list-style-type: none"> Assertive communication with people with Down Syndrome
<ul style="list-style-type: none"> Creation of floral arrangements 	<ul style="list-style-type: none"> Accompaniment and social inclusion to people with autism spectrum disorder
<ul style="list-style-type: none"> English A1 Breakthrough 	<ul style="list-style-type: none"> Nicaraguan sign language
<ul style="list-style-type: none"> English A2 Waystage 	<ul style="list-style-type: none"> Tools of support
<ul style="list-style-type: none"> Frame plating 	<ul style="list-style-type: none"> Basic course of reading-writing of the Braille System
<ul style="list-style-type: none"> Camba handcraft 	
<ul style="list-style-type: none"> Operational system and office automation 	
<ul style="list-style-type: none"> Embossing techniques on aluminum 	
<ul style="list-style-type: none"> Relaxing massage 	
<ul style="list-style-type: none"> Massotherapy 	
<ul style="list-style-type: none"> Application of office automation with screen reader 	
Themes with demand of people with disabilities on the agricultural and forestry sector	Themes for the certification of labor competencies to instructors and interpreters
<ul style="list-style-type: none"> Vegetable cultivation 	<ul style="list-style-type: none"> Braille System instructor
<ul style="list-style-type: none"> Soy-based food processing 	<ul style="list-style-type: none"> Orientation and mobility instructor
<ul style="list-style-type: none"> Elaboration of wine and vinegars from tropical fruits 	<ul style="list-style-type: none"> Nicaraguan sign language instructor
<ul style="list-style-type: none"> Fruit and vegetable processing 	<ul style="list-style-type: none"> Nicaraguan sign language communication system interpreter
<ul style="list-style-type: none"> Nectars and canned food processing 	
<ul style="list-style-type: none"> Organic fertilizer and bio-fertilizing elaboration 	

Own Work

speakers and this application translates it to sign language” (personal communication, Novembre 27, 2017).

Other projects were identified as “Mi expresión cuenta”, consists on facilitating learning the language and literature of people with hearing impairments. This won the second place of the Starup category in 2020. Also, Tux Boy project can be quoted, which consists in a Web and Android application. It allows people with disabilities to find a space to receive psychological attention, therapy and information about clinical pictures before a disease. It was the third-place winner in the Amateur category.

Conclusions

Since 2007, improvement actions for the attention to people with disabilities have been implemented, related to national coverage, offer growth, updating formative offers in attention to demands of people with disabilities’ associations and organization.

Likewise, together with MINED, it has been promoted the attention to people with hearing impairment through in-person courses development, such as Basic Course of Nicaraguan Sign Language aimed at administrative teachers and directives of technological centers.

Inclusive professional training and quality is simultaneous with the implementation of talks about sensibilization about Law 763, Law for the Rights of People with Disability, for the strengthening of the conscience to the attention of protagonists and appropriation of this legislation, aiming to create inclusive spaces on technological center.

Formational programs and projects show

positive results in people with disabilities’ life, who, after learning, have found opportunities for work or created an entrepreneurship for their family economy’s improvement.

Advances and formational present their alignment with national policies and plans of human development, aimed at inclusive education as a transversal model of all the National Education System’s task. Also, it is established on Law 1063, INATEC’s Regulatory Law, the National Competency-Based Model of Technical Education and Professional Training and the Institutional Strategic Plan 2022-2026.

The research refers it exists a perspective of persistent programs and projects of inclusive and quality professional training strengthening, with the goal of boosting their participation and ensure educational continuity on the country’s educational subsystems.

References

- Beltrán, S., & Ortíz, J. (2020). Los paradigmas de la investigación: un acercamiento teórico para reflexionar desde el campo de la investigación educativa [Investigation paradigms: A theoretic approach to reflect from the field of educational investigation]. *RIDE, Revista Iberoamericana para la Investigación y el Desarrollo Educativo*, 11(21).
- Cadena-Iñiguez, P., Rendón-Medel, R., Aguilar-Ávila, J., Salinas-Cruz, E., Cruz Morales, F., & Sangerman-Jarquín, D. (2017). Métodos cuantitativos, métodos cualitativos o su combinación en la investigación: un acercamiento en las ciencias sociales [Quantitative methods, qualitative methods or

- their combination in investigation: An exploration on the social sciences]. *Revista mexicana de ciencias agrícolas*, 8(7), 1603-1617.
- Delors, J. (1996). *Los cuatro pilares de la educación. La educación encierra un tesoro [Four pillars of education. The education hides a treasure]*.
- El19Digital. (2020, 25 de agosto). Inateccapacitó a 25 mil personas con discapacidad visual, auditiva y fisicomotriz [INATEC trained 25 thousand people with visual, hearing, and physio-motor disabilities]. https://www.el19digital.com/articulos/ver/titulo:106616_inatec-capacito-a-25-mil-personas_con-discapacidad-visual-auditiva-y-fisicomotriz
- Escudero, C., & Cortez, L. (2018). *Técnicas y métodos cualitativos para la investigación científica [Qualitative techniques and methods for scientific investigation]*. Machala: Universidad Técnica de Machala.
- GRUN. (2021). *Plan Nacional de Lucha Contra la Pobreza y para el Desarrollo Humano 202-2026 [National Plan to Fight Poverty and for Human Development]*. Gobierno de Reconciliación y Unidad Nacional.
- GRUN. (2023). *Cartilla Atención y Cuido a las Personas con Discapacidad [Attention and Care for People with Disabilities Passbook]*. Gobierno de Reconciliación y Unidad Nacional.
- INATEC. (2018). *Modelo Nacional de la Educación Técnica y Formación Profesional Basado en Competencias [National Competency-Based Model for Technical Education and Professional Training]*.
- INATEC. (2021). *Plan Estratégico Institucional 2022-2026 [Strategic Institutional Plan 2022-2026]*. Managua, Nicaragua:
- INATEC. Ley 763 (2011). *Ley de los Derechos de las Personas con Discapacidad [Law of Rights with People with Disabilities]*. August 01 & 02, 2011. D. O. No. 143 y 143
- Ricoy, C. (2006). Contribución sobre los paradigmas de investigación [Contribution about investigation paradigms]. *Revista do Centro de Educação*, 31(1), 11-22. <https://www.redalyc.org/pdf/1171/117117257002>
- Vanegas, S. (2022). Educación para el desarrollo humano pleno: un proceso de evolución disruptiva [Education for full human development: a process of disruptive evolution]. *Índice Revista de Educación de Nicaragua*, 2(4), 21-27.