

PUBLIC POLICY OF THE SHORT CYCLE OF HIGHER EDUCATION IN CUBA

POLÍTICA PÚBLICA DEL CICLO CORTO DE LA EDUCACIÓN SUPERIOR EN CUBA

Reynaldo Velázquez Zaldívar *  <https://orcid.org/0000-0002-4590-9512>

Deysi Fraga Cedré  <https://orcid.org/0000-0002-7568-2777>

Francisco de la Caridad Lau Apó  <https://orcid.org/0000-0002-7134-720X>

Ministry of Higher Education, Havana, Cuba

* Corresponding author: rvelazquez@mes.gob.cu

Classification JEL: I21, I23, I28

DOI: <https://doi.org/10.5281/zenodo.7186271>

Received: 13/06/2022

Accepted: 20/09/2022

Abstract

The article aims to show the process of creating a Public Policy for the establishment of Short Cycle Higher Education (ESCC) in Cuba. This process has its antecedents in studies carried out over twenty years ago by groups of Cuban experts and which has borne fruit since 2015, with the intention of including among the transformations of higher education the possibility of offering young people a new way to access higher education through short-cycle training programs, as they exist in various nations. The methodology used by the central body of the Ministry of Higher Education for the elaboration of the policy, its institutionalization and implementation are exposed.

Keywords: public policy, higher education, short cycle

Resumen

El artículo tiene como objetivo mostrar el proceso de creación de una Política Pública para el establecimiento de la Educación Superior de Ciclo Corto (ESCC) en Cuba. Este proceso tiene sus antecedentes en estudios realizados desde hace una veintena de años por grupos de expertos cubanos y que ha fructificado a partir del año 2015, con la intención de incluir entre las transformaciones de la educación superior la posibilidad de ofrecer a los jóvenes una nueva vía para su acceso mediante programas de formación de ciclo corto, como existen en diversas naciones. Se expone la metodología empleada desde el organismo central del Ministerio de Educación Superior para la elaboración de la política, su institucionalización e implementación.

Palabras clave: política pública, educación superior, ciclo corto

Introduction

Among the sustainable development goals of the 2030 agenda¹, the formulation of number 4 stands out, which states: “Ensure inclusive, equitable and quality education and promote lifelong learning opportunities for all.”² The goals of this goal that are proposed to be achieved by the year 2030, include the purpose of ensuring equal access for men and women to quality technical, professional and superior training;³ as well as the increase in the number of young people and adults with “the necessary skills, in particularly technical and professional, to access employment, decent work and entrepreneurship.”² On the other hand, the complex international context and the dynamics of national economic development impose the need to accelerate the process of training and development of the workforce that is required to meet the goals set for 2030.⁴⁻¹¹

The main directors and advisors of the Ministry of Higher Education (MES) of the Republic of Cuba, together with the pedagogical groups of the universities, have made every effort to undertake a set of transformations that promote the rise to higher levels of quality and quantity in admission to Higher Education for young people and adults with a more diversified approach and a more comprehensive and relevant continuous training system for professionals, which includes undergraduate studies, preparation for employment in the first years after graduates and postgraduate education on a permanent basis, in line with the aforementioned objective of sustainable development.

Among the studies and investigations that have been carried out to take more solid steps and with scientific foundations, are the inquiries made around the ways for the diversification of higher education systems, which pointed, among other variants, towards the creation and existence in several countries of tertiary education institutions other than traditional universities or called non-university tertiary education (NTEs) in which short cycle programs of no more than three years duration are offered with a practical and vocational focus and new didactic methods that respond to the need for the massification of higher education and satisfy the demands of the labor market in the shortest time according to the demands,¹²⁻¹³ conceptions and ideas that were taken up since 2015.

The International Standard Classification of Education, by its acronym ISCED, constitutes a reference framework to serve as an instrument for the collection and presentation of national and international statistics and to order educational programs and their respective certifications by levels of education and fields of study; It was created by UNESCO in the seventies of the last century, it was the subject of a

first revision in 1997 and the updated version of 2011 contains more precise definitions and new categories of education levels. In it, ISCED level 5 is short-cycle tertiary education, which is the lowest level of tertiary education, aimed at acquiring knowledge, skills and professional competences within a maximum period of three years to access employment in specific occupations, based on a predominant practical component; and it can also facilitate entry into other tertiary education programs.¹⁴

These results led to the creation of a national working group in the central body of the MES to develop the proposal for this level in Cuban higher education. This article has the objective of presenting the methodology used from 2015 to the present to achieve the approval as a Policy of the country, of Short Cycle Higher Education (ESCC) as a subsystem of Higher Education and the actions undertaken to start its institutionalization and implementation.

Materials and methods

The characteristics and advantages of including a new level and diversifying Cuban higher education have been the object of study since 1997, when the Minister of Higher Education commissioned an interdisciplinary group of experts from the MES and the University of Havana (UH) analyze the trends of higher education with a view to the 21st century, in preparation for the Cuban delegation to the UNESCO world conference in Paris. As one of the results of that study, the convenience of creating a new level in tertiary education in Cuba was proposed to the MES leadership, from that stage.

The study on the possibility of creating this level as part of higher education was restarted in 2014, at the request of the first deputy minister, Dr. C. José Ramón Saborido Loidi, who currently holds the position of minister in this same body, with the formation of a working group made up of advisors from the MES and professors from the University of Havana and the José Antonio Echeverría Technological University of Havana (CUJAE), which again studied the international scene and the background in Cuba.

In 2015, the horizon of the changes required by Cuban higher education was broadened when the then Minister of Higher Education, Dr. Rodolfo Alarcón Ortiz, created a commission made up of the deputy ministers, advisers to the Directorate of Professional Training (DFP), from other directorates of the MES and experts from the UH, CUJAE and the Agrarian University of Havana (UNAH) to propose the transformations that should be carried out in the training of higher education professionals, which were outlined in the document: “Policy for the improvement of the continuous training system of Cuban professionals”, as a strategic guide for the changes that have been implemented subsequently and in it the basic ideas for the creation of what later came to be called short-cycle higher education were contemplated.

Thus, the short cycle program becomes a transformation of Cuban Higher Education today,¹⁵ which is exposed in this article. The methods used include the preceding actions, socialization with teams of experts at the national level and internationalization.

Initial actions of the MONTH

- 1) The implementation of the strategic actions proposed in the aforementioned document advised the creation of temporary working groups (GTT) in the DFP and among them the first was dedicated to the creation of the new level.

- 2) Initially, the group had a “nucleus” whose mission consisted of preparing the draft Public Policy document and the base document for preparing study plans.
- 3) Later it was expanded with other specialists appointed by the UH, CUJAE, UNAH and the Ministry of Education (Mined) to discuss the documents prepared and make recommendations. Several versions of the projects were discussed in this commission: "Policy for the creation of the level of non-university higher education" and "Base document for the preparation of study plans for non-university higher education programs".

Expansion of actions with other national organizations

Due to the fact that this Policy required the approval of the country's top leadership, after the 2015-2016 academic year began, at a meeting held in the Executive Committee of the Council of Ministers (CECM), the creation of a TWG was agreed upon, chaired by the MES and made up of representatives of several national organizations. The following actions were performed:

- 1) The TWG focused on the elaboration of the draft Policy with the structure of the document:
 - a) Introduction and background
 - b) Diagnosis
 - c) Politics
 - d) Economic valuation
 - e) Possible risks
 - f) Goals and indicators
 - g) Legal regulations
 - h) Implementation schedule
- 2) At this stage, it was decided to identify the level as short-cycle higher education, in whose denomination the name "higher education" with which this subsystem is recognized in Cuba would be maintained, followed by the terms "short-cycle" used in UNESCO's ISCED 5.
- 3) Five meetings of the GTT were held between October 2015 and January 2016, in which a total of 11 agreements were adopted, aimed at fulfilling commitments by the representatives of the organizations in the group and the participants offered their assessments, opinions and suggestions, which were taken into account in the improvement of the draft document on the Policy. In the meetings, several international experiences were analyzed and those that existed in training courses that are developed by some organizations in Cuba.
- 4) At the same time, work continued on different versions of the base document project, the latest version of which was entitled "Base document for the design of the Short Cycle Higher Education study plans."

Advice from the Association of Directors of University Institutes of Technology (ADIUT) of France

As a result of the Action Plan between the Ministry of National Education, Higher Education and Research of the French Republic and the MES of the Republic of Cuba, regarding cooperation in the field of Higher Education signed in Paris on October 30, 2015, it was agreed to work together through the help and advice of directors of the ADIUT to the nascent ESCC project in Cuba.¹²

The IUTs are part of the university system, but they are distinguished by offering practical and short two-year courses that provide knowledge closely linked to the demands of the labor market. The steps that were followed were:

1) Preparation of the draft Administrative Agreement between the Ministry of National Education, Higher Education and Research of the French Republic and the MES of the Republic of Cuba regarding cooperation in the field of short-cycle higher education, which was signed finally by the parties in 2018, although collaborative actions were carried out based on the 2015 Action Plan.

2) Concretion of cooperation actions through different channels, among which the following stand out:

- Initial meeting in December 2015 of directors of the Le Havre and Saint Nazarie IUTs with members of the GTT and the DFP Directorate in Havana for an exchange on the French experiences in the IUTs and on the Cuban project to start the ESCC.
- Participation of French executives in the 2016 International University Congress.
- Visit of the Cuban delegation from the DFP to the IUTs of Le Havre and Saint Nazarie in November 2016 with the aim of expanding knowledge and experiences on short-cycle higher education at the IUTs of France.
- Mission of seven experts from the ADIUT of France in Havana in June 2017 with the aim of working on selected training programs of the IUT (Tourism, Informatics and Agronomy) to offer experiences with a view to the start of the ESCC in Cuba. and promote exchanges between French experts, directors of selected Cuban universities and representatives of the Gaviota tourism group.
- Development of the workshop on ESCC within the framework of the International University Congress 2018, organized jointly by the ADIUT and the DFP, with the participation of the European Association of Institutions on Higher Education (EURASHE), an association that represents polytechnic institutions and schools of higher education in Europe. The purpose of the exchange was to analyze the development of technological higher education as an instrument for successful job placement for youth; give priority to exchanges on educational policies in the sector in the different participating countries, as well as good practices already underway. In this workshop, in addition to the presentations by the directors of the French IUTs and the interventions on the experiences of Cuban delegates and guests about the training with a high school level that exists in Cuba with the intention of moving to the ESCC level, there were presentations by ministerial representatives and institutional networks from Mexico and Colombia.
- Visit of directors of the MES to French Technological Institutes to coordinate the development of the joint Cuba-France commission to be developed in the month of May 2019 and exchange with directors and professors of the programs that are designed with French advice.
- Development of the Cuba-France joint commission for the development of the ESCC in Cuba, where exchanges were held with Cuban teachers who work on the design of programs related to Tourism, Commerce, Logistics and Information Technology. Mobility of Cuban teachers was agreed in the month of November for exchange in French institutes and the delivery of teaching literature and computer equipment to support these programs.

3) Projection of internationalization in short-cycle higher education training programs. These programs in Cuba have been developed under the auspices of international collaboration, specifically the ADIUT,

France. This has also contributed to designing its international dimension through a group of strategies, among which the following stand out:

- Academic exchange with international partners with an emphasis on student and teacher mobility.
- Recruitment of foreign students, mainly from Latin America, the Caribbean and Africa to take these programs.
- Promotion of short cycle programs as offers for the export of academic services.
- Use of international literature as bibliographic material, as well as case studies of international contexts.
- Study of foreign languages facilitating the obtaining of language certifications.
- Offer of programs in non-face-to-face modalities with intensive use of information and communication technologies.

Results

On April 30, 2016, the draft document was presented by the national director of the DFP at a meeting chaired by Miguel Díaz-Canel Bermúdez, who on that date was serving as First Vice President of the Councils of State and Ministers. and in which valuable opinions and suggestions about the Policy that was being conceived were offered. As of that date, the document continued to be perfected pending presentation to the country's top management, for which the latest version was circulated between September and October 2017.

After receiving the opinions and recommendations of the different national agencies and agencies of the central administration of the Cuban State (OACE), in January 2018 a conciliation was carried out on each of the proposals made by their representatives with the DFP of the MES, from which a new version of the draft document on the Policy was derived. In February 2018, the Policy for the creation of the ESCC in Cuba¹⁶ was approved by the highest leadership of the country.

After the Policy was approved (MES, 2015), the corresponding steps were taken to prepare the legal norms that legalize the institutionalization of the new level and designate the MES as the governing body of the processes.¹⁷ Under the direction of the Executive Committee of the Council of Ministers and in coordination with the Ministry of Justice (Minjus) of Cuba, the following legal documents were proposed and approved:

- Decree-Law No. 359 of 2018 of the State Council, institutionalizes the Short Cycle Higher Education level.
- Resolution No. 98 of 2018 of the Minister of Higher Education that defines the Short Cycle Higher Education Level as a professional training with a terminal profile that is included as a subsystem of Higher Education.
- Resolution No. 18 of 2018 of the Minister of Labor and Social Security that establishes the aspects related to labor treatment and social service.

At the same time, the National Commissions in charge of designing the study plans for each of the training programs requested by the organizations and foreseen in the Policy to start in September 2018, worked on the preparation of the guiding documents based on the courses of training that were already being developed at a high school level and were going to be transformed into ESCC.

A workshop was organized and developed, led by the DFP, with representatives of the agencies and institutions in charge of preparing the designs, as well as other national agencies that had shown interest in joining the ESCC as of the 2019-2020 academic year.

From the DFP and, in coordination with the governing centers, acts of public defense of each of the training programs were planned and carried out to present and debate the curricular designs conceived by the commissions. In order to carry it out, tribunals chaired by the teaching or training vice-chancellors of the governing centers were formed, advisors from the DFP were appointed to review the documents and to prepare the opinion from a methodological assessment, as well as opponents of the employer organizations to evaluate the relevance of curricular designs. After making the corrections or adjustments that were agreed upon in the acts of defense, the final versions were delivered for the approval of the Minister of Higher Education.

Between the months of June and September 2018, the new demands of the OACE were presented based on national, provincial or territorial needs to propose training programs that can respond to them from the 2019-2020 academic year. In the Cuban experience, unlike others consulted, new institutions are not created to assume these short-cycle programs, but the existing universities manage them as part of the training offered by their faculties. Another difference lies in the fact that the programs that have been designed and implemented cover areas of knowledge that are not only technological, such as programs in the field of health, sports and teacher training for the basic secondary level under the budget of satisfying the demands that the economic and social development of the country imposes.

Implementation began in the 2018-2019 academic year, although in the second semester of the 2019-2020 academic year the programs were interrupted by the COVID-19 pandemic, which has affected the normal development of all university processes.

Until the 2020-2021 (2021) academic year, 45 study plans were approved for the daytime course and meeting course modalities, of which 9 are for secondary school teachers, 1 for Sports Trainer, and the rest for training of higher technicians : 17 from health technologies, 1 from Customs, 1 from Network Administration and Computer Security, and the other 16 that were sued by national organizations and entities, such as 2 from Mincin, 2 from Gaviota and Mintur, 3 from Mitrans, 1 requested by Minjus, Supreme Court and General Prosecutor's Office; 1 from Minag, 1 from Minem, 1 from CGR, 1 from OSDE for Construction and Assembly, 1 for Water and Sanitation, 1 from ANSOC; as well as the two designed at the request of the CAP of Pinar del Río and the CAP of Mayabeque.

Of these programs, the 13 planned to start in the 2021 academic year could practically not be developed due to the isolation stage by COVID-19, so the study plans had to be adjusted to start according to the modeling proposed by the MONTH. For those who are in the final year, the universities have prioritized the culmination exercises of the corresponding studies.

Seven other training programs for senior technicians were launched in the 2022 academic year, which respond to the needs of national entities that serve areas such as Agriculture, Tourism, Metrology, Social Work, Chemical Industry and the National Tax Administration Office (ONAT).

At the end of the 2019-2020 academic year, the first 214 students from that level graduated; out of them, a total of 131 correspond to the MES: 20 from Network Administration and Computer Security (ARSI) of the UCI and 111 from Basic Secondary Teachers, while the remaining 83 belong to the higher technician in Customs.

PUBLIC POLICY OF THE SHORT CYCLE OF HIGHER EDUCATION IN CUBA

At the end of the 2021 academic year, more than 300 students graduated from the training programs belonging to the MES, Customs, which are 352 graduates so far; and in addition, the first graduates of the MINSAP are incorporated, reaching a total of 1,812 students.

Table 1 shows the organizations and entities that have demanded this type of training and the different programs that are in execution or preparation.

Table 1. Short-cycle higher education training programs under development or preparation in Cuba

OACE National Entity	Training Programs
TRAINING PROGRAMS STARTED IN THE 2018-2019 YEAR	
MINED	1-Mathematics Teacher for Secondary School
	2- Physics Teacher for Secondary School
	3- Chemistry Teacher for Secondary School
	4- Biology Teacher for Secondary School
	5- Geography Teacher for Secondary School
	6- Teacher of Labor Education for Secondary School
	7- Spanish Language Teacher for Basic Secondary
	8- Professor of History and Moral and Citizenship Education for Secondary School
MINSAP	1-Superior Technician in Nursing
	2- Senior Technician in Clinical Analysis and Transfusion Medicine
	3- Superior Technician in Cytohistopathology
	4- Superior Technician in Radiology
	5- Senior Technician in Medical Biophysics
	6- Superior Technician in Physical Rehabilitation
MINSAP	7- Superior Technician in Occupational Therapy
	8- Superior Technician in Optometry and Optics
	9- Superior Technician in Nutrition and Dietetics
	10-Técnico Superior Technician in Logophonoaudiology
	11- Superior Technician in Hygiene and Epidemiology
	12- Superior Technician in Stenomatological Prosthetics
	13- Senior Technician in Pharmaceutical Services
	14- Superior Technician in Electromedicine
	15-Superior Technician in Social Work in Health
Minint – AGR	1-Técnico Superior en Aduana1- Superior Technician in Customs
Mincom	2- Senior Technician in Network Administration and Computer Security
TRAINING PROGRAMS INCREASED IN THE 2019-2020 COURSE	
MINSAP	1- Senior Technician in Clinical Neurophysiology
	2- Senior Technician in Surveillance and vector control
MINED	3- Art Education Teacher for Secondary School
Mincin - Gaviota - Mindus	1- Superior Technician in Logistics
Mincin	2- Senior Technician in Sustainable Trade
Mintur-Gaviota	1- Superior Technician in Tourist Assistance
INDER	2- Higher Technician in Sports Training (captive) for graduates of the Higher Training Schools for Athletes

PUBLIC POLICY OF THE SHORT CYCLE OF HIGHER EDUCATION IN CUBA

TRAINING PROGRAMS FOR 2020-2021 (2021) COURSE	
Mintur-Gaviota	Superior Technician in Maintenance for Tourism
Construction and Assembly	Superior Technician in Industrial Assembly
TS – Minjus – FGR	Superior Technician in Legal Assistance
Mitrans	Superior Technician in Automotive Transport
	Superior Technician in Electromechanics of Railway Equipment
	Senior Technician in Railway Infrastructure Management
Minem	Superior Technician in Geology
CGR	Higher Audit Technician
ANSOC	Senior Technician in Cuban Sign Language Interpretation
CAP de Pinar del Río	Higher Technician in Management of Sustainable Local Development (captive in CPE)
Water and Sanitation	Superior Technician in Water and Sanitation (captive in CPE)
Minag	Superior Technician in Irrigation and Drainage (captive in CPE for Sur de Jíbaro, SS)
CAP de Mayabeque	Superior Technician in Irrigation and Drainage (captive in CPE for Sur de Jíbaro, SS)
NEW TRAINING PROGRAMS IN THE 2022 COURSE	
MTSS	TS in Social Work
CITMA-INIMET	TS in Metrology
GRUPO GAVIOTA	T.S. at Risk of Default in Tourism
GEIQ	TS in Chemical Processes (only for Villa Clara)
MFP-ONAT	TS en Gestión Tributaria (CPE cautivo)
Minag	TS in Tax Management (captive CPE)
Minag-Acopio	Agro-industrial TS in Tobacco (captive CPE)
New Agribusiness TS in Tobacco (captive CPE)	
Minal	TS in Agriculture
CAP LAS TUNAS	ST in Aquaculture CAP LAS TUNAS
	Minag 4- ST in Agricultural Innovation Management
Minag	TS TS in Management and Cooperative Development Mindus
Mindus (GER)	TS in Urban and Industrial Solid Waste Management MEP
MEP	TS in Investment Process Management
Minsap	ST in Stomatological Care

Source: self-made

Discussion

The implementation and putting into practice of the ESCC subsystem imply a real challenge for the professional training system as it constitutes a new level within universities and other higher education institutions. With the ESCC program, it is confirmed that education is a training process whose objective is to prepare graduates, regardless of the level they acquire, for their insertion in the reproduction processes that are demanded in society¹⁸⁻¹⁹; in response to the competency profiles of managers²⁰ and workers.

The shared responsibilities between universities and organizations-companies and entities in the development of training constitute a requirement for the achievement of quality and relevance and this implies the joint contribution of human, financial and material resources that include various facilities, workshops, laboratories and scenarios that are part of the spheres of action of future graduates.

The constant search for the essentiality of the contents that are taught and learned in short cycle higher education must ensure a rational differentiation with respect to the level of medium technician that should continue to exist for the source of ninth grade graduates, and in relation also with university careers when it comes to similar profiles.

An adequate implementation of the public policy of Higher Education in Cuba referring to the short cycle was achieved, with broad participation and acceptance by employers and students. A favorable development is maintained and the proposed objectives are met and at the same time work continues on its systematic improvement.

Conclusions

The investigations carried out from the MES determined several ways for the diversification of higher education systems, which pointed, among other variants, towards the creation and existence in several countries, of tertiary education institutions different from traditional universities and that led to the proposal to include the short-cycle higher education level in Cuba, as part of the improvement of the continuous training system for Cuban professionals.

The methodology used in Cuba to conceive and implement the ESCC included: initial actions of the MES, the expansion of actions with other national organizations, the advice of the Association of Directors of University Institutes of Technology (ADIUT) of France, the presentation process, discussion and approval of the project document of the Policy and the legal norms for the institutionalization of the level and the beginning of the implementation of the ESCC.

The implementation and implementation of the short-cycle higher education subsystem implies a real challenge for the professional training system as it constitutes a new level within universities and other higher education institutions; because there are no known antecedents in short-cycle tertiary or higher education for the training of teachers and health technologists; because it is necessary to maintain a very close and permanent link between the university and the company based on the quality of training and achieve the differentiation of the new level with that of intermediate technician and that of university careers.

The advice of the Association of Directors of University Institutes of Technology (ADIUT) of France has been a decisive factor in the development of this type of program in Cuba, initially with support in the design of four programs (based on the experience of more of 50 years that they possess). The programs satisfy the particularities of the demands of the economic and social development of Cuba, but it is ensured from the beginning with this accompaniment, to bring them closer to the standards that are internationally required in short-cycle higher education and, on the other hand, the programs of the ESCC in the country contributes to the satisfaction of needs for employment and the demands for competency profiles of managers and workers.

Bibliographic references

1. Organización de las Naciones Unidas. (2018). Agenda 2030 para el Desarrollo Sostenible. ONU. https://repositorio.cepal.org/bitstream/handle/11362/40155/24/S1801141_es.pdf
2. CEPAL. Agenda 2030 y los Objetivos de Desarrollo Sostenible. Una oportunidad para América Latina y el Caribe. Naciones Unidas: Santiago de Chile; 2016.
3. Velázquez R, Pérez M, Ortiz A. Planificación Estratégica y Gestión de la Calidad: Caso de una Institución de Educación Superior Cubana. *Revista Cubana de Administración Pública y Empresarial*, 2017;1(1):39–50. [Consulted 5 april 2022] Available in <https://apye.esceg.cu/index.php/apye/article/view/5>
4. Alpízar M, Velázquez R. La universidad cubana, su desarrollo y acción en tiempos de COVID19. *Universidad y Sociedad*. 2021;13(5):112-123. [Consulted 3 april 2022] Available in <https://rus.ucf.edu.cu/index.php/rus/article/view/2217>
5. Alpízar M, Villavicencio MV. Cuba desde una perspectiva regional sobre el futuro de la Educación Superior. *Universidad y Sociedad*, 2022; 14(4): 56-68. [Consulted 25 march 2022] Available in: <https://rus.ucf.edu.cu/index.php/rus/article/view/3014>
6. IESALC. Pensar más allá de los límites Perspectivas sobre los futuros de la educación superior hasta 2050. ISBN: 978-980-7175-59-3; 2021 [Consulted 27 march 2022] Available in: <http://creativecommons.org/licenses/by-sa/3.0/igo/>
7. Lemaitre MJ, et al. La educación superior como parte del sistema educativo de América Latina y el Caribe; 2018. [Consultado 27 marzo 2022] Disponible en: <http://www.iesalc.unesco.org>
8. Partido Comunista de Cuba. 7mo Congreso del PCC. Documentos del 7mo. Congreso del Partido aprobados por el III Pleno del Comité Central del PCC el 18 de mayo de 2017 y respaldados por la Asamblea Nacional del Poder Popular, 1 de junio 2017. La Habana: Tabloides, septiembre;2017. pp. 2-32. [Consulted 21 march 2022] Available in: <http://www.granma.cu/file/pdf/gaceta/tabloide%202%20%C3%BAltimo.pdf>.
9. PCC. Conceptualización del modelo económico y social cubano de desarrollo socialista. Lineamientos de la política económica y social del Partido y la Revolución para el período 2021-2026. VIII Congreso. Partido Comunista de Cuba (PCC). La Habana, Abril; 2021. p. 86.
10. Díaz-Canel MM, Delgado M. Modelo de gestión de gobierno orientado a la innovación. *Revista Cubana de Administración Pública y Empresarial*. 2020;4(3):300-321. [Consulted 27 march 2022] Available in: <https://apye.esceg.cu/index.php/apye/article/view/141>.
11. Díaz-Canel M. Gestión de Gobierno basada en ciencia e innovación: avances y desafíos. *Anales de la Academia de Ciencias de Cuba*. 2022;12(2). [Consulted 27 march 2022] Available in: <http://www.revistaccuba.cu/index.php/revacc/article/download/e1235/1357>
12. Benítez F, Hernández D, Pich B. Las transformaciones en la formación de profesionales. *Panorama internacional. Congreso Universidad*. 2016; 5 (1): 171-186. [Consulted 25 march 2022] Available in: <http://www.congresouniversidad.cu/revista/index.php/congresouniversidad/index>
13. Velázquez R, Fraga D, Lau F. El Caso de Programas de Ciclo Corto en Cuba en Internacionalización de las Instituciones Técnicas y Tecnológicas en el Caribe. Un informe del Instituto Tecnológico de Las Américas (ITLA) y Center for International Higher Education, Boston College (CIHE); 2019. p. 53.
14. UNESCO. Clasificación Internacional Normalizada de la Educación. CINE 2011. Montreal: Instituto de Estadística de la UNESCO; 2021

15. Diaz-Canel M, Alarcón R, Saborido JR. Potencial humano, innovación y desarrollo en la planificación estratégica de la educación superior cubana 2012-2020. *Revista Cubana de Educación Superior*. 2020; 39 (3). [Consulted 5 march 2022] Available in: <http://scielo.sld.cu/pdf/rces/v39n3/0257-4314-rces-39-03-e1.pdf>
16. Comisión Permanente para la Implementación y Desarrollo. Política para la creación del nivel de Educación Superior de Ciclo Corto. La Habana; 2018.
17. Ministerio de Educación Superior. Política para la creación del nivel de Educación Superior de Ciclo Corto (ESCC); 2015.
18. Calderón DCG, Zamora DC, Medina LG. La Educación Superior en el contexto de la globalización. *Universidad Y Sociedad*, 2017; 9(3): 310-319. [Consulted 5 march 2022] Available in: <https://rus.ucf.edu.cu/index.php/rus/article/view/647>
19. Lau F. Implementación y evaluación de un reto: la educación superior de ciclo corto en Cuba. *Órbita Científica*, 2021; 26 (111). [Consulted 7 april 2022] Available in: <http://revistas.ucpejv.edu.cu/index.php/rOrb/article/view/1380>
20. Delgado M, Muriel J, Polo JC, Padilla D. Perfil de competencias de los directivos en Cuba y su aplicación en la agricultura. *Revista Cubana de Administración Pública y Empresarial*, 2020;6(1): e194. [Consulted 7 april 2022] Available in: <https://doi.org/10.5281/zenodo.5821770>

Conflict of interests

The authors declare no conflicts of interest

Authors contribution

- Reynaldo Velazquez Zaldivar: General Writing. Conceptualization, Formal Analysis, Methodology, Project Management, Resources, Validation, Visualization, Original Writing-Draft, Writing: review and editing.
- Deysi Fraga Cedré: Data Curation, Resources, Original Writing-Draft, Writing: Proofreading and Editing.
- Francisco de la Caridad Lau Apó: Data curation, Writing: review and editing.