International Research Journal of Management, IT & Social Sciences
Available online at https://sloap.org/journals/index.php/irjmis/
Vol. 11 No. 5, September 2024, pages: 179-189
ISSN: 2395-7492
https://doi.org/10.21744/irjmis.v11n5.2467

The Bachelor's Degree in Science and its Admission to Higher Education in Ecuador

Magni Guiuselly Andrade-Palacios [a]
Alicia Ximena Baldeón-Zambrano [b]

Article history:

Submitted: 27 June 2024
Revised: 09 July 2024
Accepted: 18 August 2024

Keywords:

admission;
Bachelor's degree in science;
correlation;
curriculum;
higher education;

Abstract

This research is carried out to evaluate the preparation of the bachelor's degree in science for admission to higher education in Ecuador. The research has a mixed approach, the methodology includes descriptive analysis and correlations using SPSS software. The result was a low-moderate positive Pearson correlation of 0.272 between the two variables with a confidence level (bilateral significance) of 0.003. 64% of respondents indicated they had successfully entered higher education while 36% indicated they had not; Furthermore, the discrepancy between the perceptions of students and teachers is the most important finding, this suggests the curricular review of the baccalaureate in science guarantee its alignment with the demands of higher education in Ecuador.

Corresponding author:
Magni Guiuselly Andrade-Palacios
Dirección de Posgrado, Cooperación y Relaciones Internacionales
Universidad Laica "Eloy Alfaro" de Manabí, Extensión Chone, Manabí, Ecuador.
Email address: magni74@hotmail.com

[a] Universidad Laica "Eloy Alfaro" de Manabí, Extensión Chone, Manabí, Ecuador
[b] Universidad Laica "Eloy Alfaro" de Manabí, Extensión Chone, Manabí, Ecuador

1 Introduction

Education has been a fundamental tool in human evolution, currently, it has become the cornerstone of personal and social development, offering the opportunity for growth, improvement of living conditions and the formation of citizens with a perspective critical and aware of current challenges. In this context, access to higher education is a crucial step for young people, allowing the acquisition of specialized knowledge and advanced skills necessary for the current labor market (UNESCO, 2020).

Ecuador, like many other developing nations, faces considerable challenges to access to higher education. Although significant progress has been made in expanding access to education, notable critical points persist that require an in-depth review and thorough analysis, because various factors converge in achieving an effective process, such as: limitations economic, institutional and social barriers, among others.

Admission to higher education is a multifaceted process that involves a series of stages and requirements that applicants must meet to access higher education institutions (Machado, 2023). In Ecuador, as in many other countries, students must undergo aptitude and knowledge tests that evaluate their skills in various areas, these results being decisive for their acceptance into universities (Torres, 2016). To apply for this process, the student must complete his studies in high school since this is a type of secondary education that provides students with a solid academic foundation in key areas such as mathematics, natural sciences and technology.

The general objective of the present study entitled “The Bachelor's Degree in Science and its Admission to Higher Education in Ecuador” is to analyze the impact of the bachelor's degree in science on admission to higher education in Ecuador. Furthermore, among the specific objectives that will be addressed for the fulfilment of this research are to characterise the high school degree in Sciences in Ecuador and examine the admission process to higher education, this objective will focus on the intrinsic factors in the admission process of the students of the Eugenio Espejo Educational Unit of the city of Chone of the 2022-2023 promotions; evaluate the perspective of the main actors of the baccalaureate process.

In the current Ecuadorian context, where equitable access to higher education is a pending objective to be achieved, a study like the one presented becomes essential; since, the investigation of the factors that affect the admission process to higher education of high school students in science will allow in the first instance to provide clarity of the current reality, followed by an objective perspective for the implementation of strategies. , policies and guidelines regarding this particular topic. By focusing the research on the students of the Eugenio Espejo Educational Unit, a deep and contextualized analysis of a specific reality is provided.

The methodology proposed in this study is a mixed approach, combining both qualitative and quantitative methods to provide an exhaustive and multifaceted analysis of the bachelor's degree in science and its admission to higher education in Ecuador. A documentary analysis of the bachelor's degree in science will be carried out, examining the structure, subjects and course load to evaluate the academic preparation of the students. Subsequently, a survey will be carried out on a representative sample of high school graduates in science from the Eugenio Espejo Educational Unit, complemented with interviews directed at teachers (Heinesen, 2018; Luesia et al., 2023; De Donder & Martinez-Mora, 2017).

The baccalaureate constitutes the third level of formal education that complements the skills developed in the three sublevels of Basic General Education. At this level, a complete and interdisciplinary education is manifested, linked to values such as justice, innovation and solidarity, allowing the student to connect with the Higher Education System, thus contributing to their life project.

This educational level integrates topics linked to the birth of social movements, liberal revolutions, expansion, growth, restrictions and rights, along with language use and linguistic variations, and the transformations of written culture in the digital age. and its repercussions (Ministry of Education, 2019).

Likewise, issues related to artistic production, mathematical models, physical, chemical and biological processes, and the technological, economic and scientific contributions of different cultures are addressed. All of this is to apply knowledge from various disciplines in making appropriate decisions in the face of intricate environmental, cultural, political and social problems.

2 Materials and Methods

The design of this research is mixed, combining quantitative and qualitative techniques. This allows us to holistically understand the intrinsic parameters in the higher education admission process. The combined use of surveys and semi-structured interviews provides a complete overview of the topic under study.

The population and sample of this study consists of students who graduated in the period 2022 and 2023 with a bachelor's degree in science at the Eugenio Espejo Educational Unit; The population of these two promotions is 279 students. This method provides representative and generalized results for the high school science student population. To characterize the Bachelor of Science, the collection of quantitative and qualitative data is chosen. Carrying out a documentary review of the study programs, as well as relevant agreements at the national level on the baccalaureate. In addition, interviews with educational authorities and teachers to obtain a complete and updated vision of the state of the Baccalaureate in Sciences in Ecuador (Strijbos et al., 2015; Leigh & Gill, 2003).

In addition, administered structured surveys to students in their final year of high school science at the Eugenio Espejo Educational Unit to explore their personal experiences, knowledge and perspectives on the admission process to higher education. The facilities and difficulties they face, their preparation for admission tests, and their choice of higher education institutions and careers are evaluated. The data collected is analyzed qualitatively to identify patterns, trends and emerging themes.

The sample rests on the principle that the parts represent the whole and therefore reflect the characteristics that define the population from which it was extracted, this indicates that it is representative. Therefore, according to the parameters subscribed by (Sampieri, 2018), the sample is non-probabilistic for convenience, because the survey is carried out on nursing students. For the analysis of the sample, equation 1 is applied

$$n = \frac{With^2 p*q*N}{and^2(N-1)+With^2*p*q} \qquad (1)$$

Where;
n → Sample size
N →Population size
p → Probability of success 50% (0.50)
and →Error Admitted 5% (0.05)
q →Probability of failure 50% (0.50)
With2→Distribution variable (1.96)

The margin of error or possibility is the result of the difference that may occur in the results obtained with the sample and what would have been obtained if the information gathering were applied to the entire population; therefore, a margin of error of 5% is used. Therefore, a sample of n= 115 (McDonough & Shaw, 2013).

3 Results and Discussions

The study plan, the workload and specific subjects are essential to understand the configuration of the Baccalaureate Education system in Ecuador, and these elements form the fundamental structure that determines the academic preparation of the students. Through this structural design of education, not only is a curricular structure or the subjects that will make up the training established but also the pedagogical methodology that ensures the goal of the program, which is to turn students into entities prepared to face professional challenges. or academic-related to your area of study. Table 1 shows the common core subjects of the first year of BGU Subsection 1.

Table 1
Common core subjects of the first year of BGU

Common core subjects	Class hours for the first year of BGU
Physical	4
Chemical	4
History and Social Sciences	4
Language and Literature	4
Mathematics	4
Foreign Language	5
Development of philosophical thought	4
Physical education	2
Art Education	2
Information applied to education	2
Total mandatory common hours	35

Use: This table shows the curricular framework for the first year of high school, which was prepared from information published by the Ministry of Education of Ecuador. According to (Ministry of Education, 2016), it indicates that students who opt for the science baccalaureate, in addition to the common core, must complete 5 weekly academic periods of subjects defined by the institution according to their project and institutional identity, leaving them with a burden schedule of 40 weekly academic periods, these are shown in table 2.

Table 2
Common core subjects of the second year of BGU

Common Core Subjects	Hours of Classes for the Second Year of BGU
Physical chemistry	4
Biology	4
History and Social Sciences	4
Language and Literature	4
Mathematics	4
Foreign Language	5
Entrepreneurship and Management	2
Citizenship education	4
Physical education	2
Art Education	2
Total mandatory common hours	35

Use: This table shows the curriculum for the second year of high school, which was prepared from information published by the Ministry of Education of Ecuador.

In this case, the subjects of the second year of high school are modified, and the subject of entrepreneurship and management has been included, which aims to develop the talent of entrepreneurial people, which is combined with values inherent to carrying out entrepreneurship: development leadership, innovation and creativity, risk tolerance, managerial capabilities and autonomy (Ministry of Education, 2015).

In addition, the subject of education for citizenship includes a workload of 4 hours per week, this subject according to (Ministry of Education, 2014) indicates that the subject of Education for Citizenship promotes students' clear knowledge of freedom, transcendence and responsibility so that they develop ethical attitudes and acquire the commitment to carefully examine the facts and the implications of your actions for other people.

Students who opt for the Baccalaureate in Sciences, in addition to the common core, must complete 5 weekly academic periods of subjects defined by the institution according to their project and institutional identity, shown in Table 2.

Table 3
Common core subjects of the third year of BGU

Common Core Subjects	Hours of classes for the third year of BGU
Language and Literature	4
Mathematics	4
Foreign Language	5
Entrepreneurship and Management	2
Citizenship education	3
Physical education	2
Total mandatory common hours	20

Use: This table shows the curriculum for the third year of high school, which was prepared from information published by the Ministry of Education of Ecuador.

At this level, it can be seen that the workload of the common core subjects is minimal, therefore, according to what is indicated in AGREEMENT No. MINEDUC-MINEDUC-2022-00010-A, published by (Ministry of Education, 2022), each institution, in response to its different particularities, may increase at its discretion based on its context and particular reality, seeking to comply with all hours. The educational institution will allocate the pedagogical periods, in the subjects, based on achieving the high school exit profile.

In short, educational institutions that offer a baccalaureate in Sciences have a minimum of five (5) hours, for each of the three (3) years of baccalaureate, in which they can include subjects defined by the institution, in the last year the workload is five (5) hours of subjects at the discretion of each school and 15 additional (optional) hours.

Admission to higher education

The admission process to higher education is a fundamental and decisive stage in the educational trajectory of students, which involves a series of steps, requirements and evaluations designed to determine the preparation of applicants to enter higher education institutions. In Ecuador, this process ranges from the preparation of academic and personal documents to passing admission exams that evaluate the capabilities, skills and knowledge of the candidates.

Furthermore, this process seeks to ensure that students who access higher education have the necessary skills to face academic challenges and contribute significantly to the educational community and subsequently, to society as a whole. A deep understanding of this process is essential to identify and address possible barriers and challenges that students face, the schedule is shown in table 4.

Table 4
SENESCYT 2023 Schedule - Admission Process

Admission Process	DATES
National Registry	From December 29, 2022, to January 12, 2023
Fill out the Social Registration Form	From January 30, 2023
Registrations	From February 1 to 5, 2023
Check evaluation date (Test)	From April 3 to 9, 2023
Assessment	From April 10 to 14, 2023
Second Session (Rescheduling)	April 19, 2023
– Evaluation from home	April 26 and 27
– Evaluation at headquarters	April 28
Consult Evaluation Score	May 7 and 8, 2023
Check Application Score	From May 21 to 23, 2023
Postulation	From May 21 to 24, 2023
Quota Acceptance	From June 1st to 10:00 p.m. on Friday, June 2nd
First Waiting List	June 3
Second Waiting List	June 4
Third Waiting List	June 5
Tuition	First Week of June

Note. The admission process for 2023 is defined by the governing institution Secretariat of Higher Education, Science, Technology and Innovation (SENESCYT, 2023a).

The admission process to higher education in Ecuador is a structured path that involves several stages to ensure the equitable and meritorious inclusion of applicants in higher education institutions. This process begins with registration on the SENESCYT online platform; this step is essential as it allows students to be officially recognized as applicants for higher education.

Subsequently, applicants must fill out a Social Registration Form, a tool used to collect relevant information about the applicant's socioeconomic background, which can influence their access and success in higher education. Registration is the next step, where students formalize their intention to participate in the admission process.

The evaluation of skills and knowledge is carried out through a test scheduled on a specific date, which can be rescheduled in a second session if a need arises. Students, depending on their limitations, can choose to take the test at home or an assigned location, providing flexibility and adaptability to the process.

Once the evaluation is completed, students can consult their scores, which are crucial for the next stage: applying to the institution and career of their choice. Based on their score and other criteria, applicants are assigned a place at the university that they must accept to continue. It should be noted that, according to (SENESCYT, 2023b), the allocation of places will be carried out based on the following parameters following the principles of merit and equal opportunities: Academic offer of public Universities and Polytechnic Schools, Order of assignment, Application score, Freedom of career choice.

Finally, the enrollment stage seals the student's entry into the selected educational institution, marking the beginning of their career in higher education. Each of these stages is vital and requires the attention, preparation and commitment of students to ensure their success in accessing higher education.

3.1 Results

Table 5 shows the collection of qualitative data.

Table 5
Qualitative Compilation

Qualitative compilation (interview with teachers)	
Dimension	Criterion
Curricular preparation	Several teachers do not believe that the high school science curriculum adequately prepares students for the higher education entrance test. Problems are mentioned such as the generalized approach of the curriculum and the lack of alignment with the demands of the entrance tests.
Teaching methodology	The need for practical approaches, numerical and verbal reasoning, logic and reading comprehension is highlighted. In addition, some teachers emphasize the use of ICT and the use of simulators as additional tools.
Student Difficulty	Reading comprehension seems to be one of the main difficulties that students face. In addition, there is a recognition that students carry gaps in fundamental knowledge, which makes it difficult for them to face specific questions on tests.
Feedback and Methodological Changes	Some teachers have adapted their teaching methods based on feedback from former students. This adaptability is crucial to ensuring that students are better prepared in the future.
Recommendations	Most teachers advise students to prepare in advance, reinforce reading comprehension, and familiarize themselves with the specific areas that will be evaluated on the test.
Changes to the curriculum	There is a repeated suggestion to specialize the baccalaureate or adapt the curriculum to better align it with the demands of higher education. This may include areas of specialization such as physical-mathematical, social, and biological-chemical.

Use: Summary table of the data collected from the interview of 2 teachers of the “Eugenio Espejo” Educational Unit

Quantitative data collection is in Table 6.

Table 6
Scale statistics

Scale statistics	
Media	50,174
Variance	14,268
Typical Deviation	3,7773
N of Elements	12

Use: Scale statistics are measures used to describe and summarize the characteristics of a data set.

The scale statistics show a mean of 50.174, a variation of 14.268 and a standard deviation of 3.7773. These values are derived from 12 elements. These metrics provide an overview of the distribution and dispersion of the collected data shown in Table 7.

Table 7
Reliability statistics

Reliability statistics	
Alfa de Cronbach	0.830
Cronbach's alpha based on standardized items	0.835
N of Elements	12

Use: Reliability statistics refer to the measures used to evaluate the consistency, stability and reliability of a measurement instrument.

In this table, the Cronbach's Alpha coefficient is 0.830, which indicates good reliability of the questionnaire. However, when considering standardized items, the coefficient increases slightly to 0.835, suggesting that standardization marginally improves consistency. In total, 12 items are analyzed to determine these coefficients, as shown in Table 8.

Table 8
Pearson correlation

Correlations			
		Independent Variable	Dependent variable
Variable_ Independent	Pearson correlation	1	0.272
	One. (bilateral)		0.003
	N	115	115
Variable_ dependent	Pearson correlation	0.272**	1
	One. (bilateral)	0.003	
	N	115	115

Use: This data is the result of the SPSS software where the independent variable has been correlated with the dependent variable.

The Pearson correlation coefficient in Table 7 is 0.272 between the two variables, which indicates according to the parameters expressed by IBM (2019), that there is a low to moderate positive relationship. Since the bilateral significance value is 0.003, the evaluation is statistically significant at the 99.7% confidence level ($p<0.05$). Furthermore, the table shows that the analysis was based on 115 observations for both variables, shown in Table 9.

Table 9
I feel satisfied with the quality of education received in the bachelor's degree in science

I feel satisfied with the quality of education received in the bachelor's degree in science		
Scale	Nominal value	Percentage (%)
Agree	59	42.14
OK	79	56.42
Neither agree nor disagree	2	1.7
Total	140	100

Note: The frequency table is a result of SPSS software.

The vast majority of respondents, a total of 98.56% (adding the percentages of "Totally agree" and "Agree"), express satisfaction with the educational quality of the bachelor's degree in science. Only a very small fraction, 1.7%, lean neither towards satisfaction nor dissatisfaction. There are no respondents who express dissatisfaction. The total number of participants is 140, which indicates that all participants chose one of the options provided, shown in Table 10.

Table 10
I successfully entered higher education after completing my bachelor's degree in science

I successfully entered higher education after completing a bachelor's degree in science		
Scale	Nominal value	Percentage (%)
Agree	89	64
Disagree	51	36
Total	140	100

Note: The frequency table is a result of SPSS software

64% of respondents (89 out of 140 people) said they "Strongly Agree" that they successfully entered higher education after completing a bachelor's degree in science. 36% (51 of 140 people) strongly disagreed with the statement, indicating that they did not feel successful in entering higher education. Table 11 shows the non-parametric correlation

Table 11
Non-parametric correlation

Non-parametric correlations				
			Independent_Variable AND	Variable_dependienteX
Spearman's rho	Variable_IndependienteY	Correlation coefficient	1.000	0.236
		One. (bilateral)		0.011
		N	115	115
	Variable_dependienteX	Correlation coefficient	0.236	1.000
		One. (bilateral)	0.011	
		N	115	115
	X1_Curricular_Content	Pearson correlation	,612**	,240**
		One. (bilateral)	,000	,010
		N	115	115
	X2_Skills_develop	Pearson correlation	,787**	,156
		One. (bilateral)	,000	,095
		N	115	115
	Y1_Admission_Process	Pearson correlation	,200*	,904**

Non-parametric correlations				
			Independent_Variable AND	Variable_dependienteX
		One. (bilateral)	,032	,000
		N	115	115
	Y2_Choice_career	Pearson correlation	,239**	,922**
		One. (bilateral)	,010	,000
		N	115	115
	Y3_Expectation_vs_reality	Pearson correlation	,246**	,872**
		One. (bilateral)	,008	,000
		N	115	115

Use: The table shows non-parametric correlations between different dimensions and the dependent and independent variables.

The correlation between these two is 0.236, which indicates a mild to moderate positive relationship. In addition to this, the bilateral significance is 0.011, which suggests that this correlation is statistically significant at the 98.9% confidence level ($p < 0.05$).

Furthermore, relationships are observed that vary from slight to strongly positive. Specifically, "Y1_Admission_Process" and "Y2_Career_Election" present strong positive correlations with the dependent variable, with high statistical significance. However, "X2_Skills_develop" shows a correlation that is not significant at the standard 95% level. In general, most correlations are statistically significant, indicating notable relationships between the variables analyzed.

3.2 Discussion

The data collected through the surveys suggests that, from the student's perspective, the baccalaureate in science process is aligned with the needs required to enter higher education in Ecuador. These results suggest that students feel that their high school education provides them with a solid foundation and adequately prepares them for the demands and expectations of higher education. However, this positive perception contrasts with the concerns expressed by teachers, who point out concerns about the alignment of the high school curriculum with the specific demands of entrance tests and higher education in general (Chan et al., 2017; Shawer, 2010).

The discrepancy between students' perceptions and teachers' opinions highlights the complexity of the educational process. While students may feel prepared and confident in their training, teachers, with a broader vision of the educational system and possibly more experience in transitions between levels, can identify areas of improvement and challenges not recognized by students. This disparity underscores the importance of effective communication between educators and students to ensure a mutual understanding of the expectations and realities of the postsecondary transition process.

To address these concerns, it is essential to consider a collaborative review of the curriculum, where both teachers and students can contribute their perspectives and experiences. This rethinking is largely shared with what was expressed by (Cabezas, 2021), who mentions that the national curriculum is based on proposals from other countries with similar or different realities to those presented in our country, which is why it does not apply effectively given that it is not fully contextualized to the needs of the student population and the country.

This criterion is also reflected in the research by (Erreyes et al., 2019), titled “Entry of High School Students into Ecuadorian Higher Education from a Student Perspective”, where the perspective of the sample of 270 students; These indicated that students believe and are often convinced that there is a low quality in university education, this thanks to the deficiency in reading comprehension and the low level of development of intellectual operations, emotional problems and family dysfunctions.

Although this could lead to adjustments in the curriculum or teaching methodology, an improvement in the demands of higher education may be evident while maintaining students' positive perceptions of their preparation. The combination of both quantitative and qualitative feedback provides a unique opportunity to strengthen the educational process and ensure a smooth and effective transition of students from high school to higher education (Lambrechts et al., 2013; Garrison & Kanuka, 2004; Lozano et al., 2013).

Teachers express concerns regarding the current teaching methodology, highlighting the need to incorporate technological tools and practical approaches to improve students' understanding and skills. From the perspective of teachers, reading comprehension is identified as one of the main difficulties faced by students, which suggests the need to reinforce this area in the curriculum to ensure a successful transition to higher education.

64% of respondents (89 out of 140 people) said they "Strongly Agree" that they successfully entered higher education after completing a bachelor's degree in science. 36% (51 of 140 people) said "Totally disagree" with the statement, indicating that their entry has not been successful. From the perspective of the teachers of this institution, there is a general feeling that there is a misalignment between the content of the baccalaureate in science and the expectations and requirements of higher education, as reflected in the responses related to curricular preparation and the entrance tests (Gurat et al., 2018).

Limitations and Recommendations

The limitation identified in this research is the variability in student responses, that is, although the surveys may be subject to variations based on individual experiences, they cannot fully represent the population of students who have entered the system. of Higher Education in the years of study.

Likewise, it is identified that the lack of historical context limits the ability to carry out a holistic and comprehensive evaluation of the previous perspectives of the admission processes in Higher Education.

Given the divergent perceptions between students and teachers regarding the alignment of the high school curriculum with the demands of entering higher education, a collaborative review of the curriculum is recommended. This allows for the incorporation of both student expectations and teacher-expert opinions to identify and address areas for improvement.

The implementation of practical approaches is a core part of these recommendations, since, by incorporating interactive tools and methodologies in the baccalaureate process, such as simulators and digital tools, they can reinforce complex concepts that are necessary to advance more decisively in the transition from high school to higher education.

To address concerns about curriculum alignment, consideration could be given to specializing or diversifying the baccalaureate science curriculum so that it is more aligned with areas of specialization in higher education.

Finally, it is recommended to implement a continuous evaluation system to monitor the effectiveness of the changes implemented in the curriculum and teaching methodology. This allows for timely adjustments based on constant and updated feedback.

4 Conclusion

In the collection of quantitative data, there is a consensus among respondents regarding the preparation and relevance of the bachelor's degree in science offered by the “Eugenio Espejo” Educational Unit to admission to higher education in Ecuador. The categories with high frequency in “totally agree” and “agree” reflect a positive perception about the alignment and effectiveness of the bachelor's degree in science to facilitate the transition to higher education. The non-parametric correlations show that there are significant relationships between the variables and several dimensions, especially between them. Finally, there is a general recommendation to consider changes in the high school science curriculum, to better align with the demands of higher education in Ecuador, including the possibility of introducing specific areas of specialization.

Conflict of interest statement

The authors declared that they have no competing interests.

Statement of authorship

The authors have a responsibility for the conception and design of the study. The authors have approved the final article.

Acknowledgements

We are grateful to two anonymous reviewers for their valuable comments on the earlier version of this paper.

References

Cabezas, D. (2021). Replantamiento de Currículo. Labmovil.

Chan, C. K., Fong, E. T., Luk, L. Y., & Ho, R. (2017). A review of literature on challenges in the development and implementation of generic competencies in higher education curriculum. *International Journal of Educational Development*, *57*, 1-10. https://doi.org/10.1016/j.ijedudev.2017.08.010

De Donder, P., & Martinez-Mora, F. (2017). The political economy of higher education admission standards and participation gap. *Journal of Public Economics*, *154*, 1-9. https://doi.org/10.1016/j.jpubeco.2017.07.004

Erreyes, H. M. B., Murgueitio, E. D. Q., Flores, J. A., & Tapia, F. A. F. (2019). Ingreso de estudiantes del bachillerato a la educación superior ecuatoriana desde una perspectiva estudiantil. *Polo del Conocimiento: Revista científico-profesional*, *4*(5), 3-20.

Garrison, D. R., & Kanuka, H. (2004). Blended learning: Uncovering its transformative potential in higher education. *The internet and higher education*, *7*(2), 95-105. https://doi.org/10.1016/j.iheduc.2004.02.001

Gurat, M. G., del Rosario, F. Y. G., Dizon, P. K. L., & Saludarez, M. U. (2018). Assessment of research faculty development program efficacy in writing research proposals. *International Research Journal of Management, IT and Social Sciences*, *5*(4), 1–17. https://doi.org/10.21744/irjmis.v5n4.238

Heinesen, E. (2018). Admission to higher education programmes and student educational outcomes and earnings–Evidence from Denmark. *Economics of Education Review*, *63*, 1-19. https://doi.org/10.1016/j.econedurev.2018.01.002

IBM. (2019). Análisis de fiabilidad.

Lambrechts, W., Mulà, I., Ceulemans, K., Molderez, I., & Gaeremynck, V. (2013). The integration of competences for sustainable development in higher education: an analysis of bachelor programs in management. *Journal of Cleaner Production*, *48*, 65-73. https://doi.org/10.1016/j.jclepro.2011.12.034

Leigh, D. E., & Gill, A. M. (2003). Do community colleges really divert students from earning bachelor's degrees?. *Economics of Education review*, *22*(1), 23-30. https://doi.org/10.1016/S0272-7757(01)00057-7

Lozano, R., Lozano, F. J., Mulder, K., Huisingh, D., & Waas, T. (2013). Advancing higher education for sustainable development: international insights and critical reflections. *Journal of Cleaner Production*, *48*, 3-9. https://doi.org/10.1016/j.jclepro.2013.03.034

Luesia, J. F., Benitez, I., Company-Córdoba, R., Gomez-Gomez, I., & Sanchez-Martin, M. (2023). Assessing the relevance of academic competencies in college admission tests from a higher-order thinking perspective: A systematic review. *Thinking Skills and Creativity*, *48*, 101251. https://doi.org/10.1016/j.tsc.2023.101251

Machado, J. (2023). Estos son los tres pasos para el ingreso a la universidad en 2023. *PRIMICIAS. Obtenido de https://www. primicias. ec/noticias/sociedad/acceso-registro-ingreso-universidades*.

McDonough, J., Shaw, C., & Masuhara, H. (2013). *Materials and methods in ELT: A teacher's guide* (Vol. 2). John Wiley & Sons.

Ministerio de Educación. (2014). Precisiones metodológicas y curriculares para el bachillerato general unificado.

Ministerio de Educación. (2015). Currículo de bachillerato emprendimiento y gestión.

Ministerio de Educación. (2016). Malla Curricular – Bachillerato General Unificado [Comunicativo].

Ministerio de Educación. (2019). Bachillerato General Unificado.

Ministerio de Educación. (2022). ACUERDO Nro. MINEDUC-MINEDUC-2022-00010-A.

Sampieri, R. H. (2018). *Metodología de la investigación: las rutas cuantitativa, cualitativa y mixta*. McGraw Hill México.

SENESCYT. (2023a). Cronograma SENESCYT 2023 – Proceso Admisión. https://ecuadorec.com/cronograma-snna-senescyt-examen-transformar/

SENESCYT. (2023b). Preguntas frecuentes proceso de acceso a la educación superior. https://www.registrounicoedusup.gob.ec/media/2023/09/PREGUNTAS-FRECUENTES_PROCESO-DE-ACCESO_DAU.pdf

Shawer, S. F. (2010). Classroom-level curriculum development: EFL teachers as curriculum-developers, curriculum-makers and curriculum-transmitters. *Teaching and teacher education*, *26*(2), 173-184. https://doi.org/10.1016/j.tate.2009.03.015

Strijbos, J., Engels, N., & Struyven, K. (2015). Criteria and standards of generic competences at bachelor degree level: A review study. *Educational Research Review*, *14*, 18-32. https://doi.org/10.1016/j.edurev.2015.01.001

Torres Gómez, H. P. (2016). *El desarrollo del sistema de educación superior analizado desde las figuras jurídicas de suspensión y extinción de universidades y escuelas politécnicas* (Master's thesis, Universidad Andina Simón Bolívar, Sede Ecuador).

UNESCO. (2020). Hacia el acceso universal a la educación superior: Tendencias internacionales.