



UNICOSTA COMPETENCY OBSERVATORY. Learning Outcomes: A Tool for Continuous Improvement in Curriculum Management and Teaching

877

Conde-Hernández, Marcial¹ ; Moreno-Gomez Gloria² ; Sánchez-Montero-Edgardo³ ; Rico-Ballesteros, Reinaldo⁴ ; García-Leyva, Diana⁵ ; Bolaño-Truyol, Jorge⁶ ; Fruto-Silva, Erick⁷ ; Corro-Martínez, Roberto⁸ ; Esquiaqui-Gonzalez, Marisel⁹. Martínez-Moreno, Sonyer¹⁰ ; Charris-Angulo, Felix¹¹ ; Miranda Acosta, Rober¹² ; Díaz-Jimenez, Arnold¹³

^{1,2,3,4,5,6,7,8} Department of Humanities, Universidad de la Costa, Barranquilla, Atlántico, Colombia.

⁹Department of Natural and Exact Sciences, Universidad de la Costa, Barranquilla, Atlántico, Colombia.

¹⁰Biffi LaSalle School, Barranquilla, Atlántico, Colombia.

¹¹Nazareth Olaya School, Barranquilla, Atlántico, Colombia.

¹²Polytechnic Educational Institution, Soledad, Atlántico, Colombia.

¹³ Institución Educativa Técnico Agropecuaria de Tubará, Tubará, Atlántico, Colombia

Abstract

This article unfolds the conception and implementation of the competency observatory of the Universidad de la Costa, establishing lines for pedagogical improvement based on the use of the results, to take action for the progress and performance of the academic programs of the institution. Within the structure, the basic referents of the observatory are proposed, and each of the different phases establishes multidisciplinary perspectives. The exercise reveals conclusions focused on the role of the professor as a fundamental agent of change in the teaching-learning dynamic in the context of higher education.

DOI Number: 10.14704/nq.2022.20.13.NQ88112

Neuro Quantology 2022; 20(13):877-883

Introduction

After international regulatory reforms, university teaching is focused on the core of both generic and specific competencies. In Europe, the Bologna model guided the successive modifications of all the curricula of university degrees, both in bachelor's and master's degrees and doctorates. In Latin America, this same process also took place, with a great debate on the possibilities and limitations of the subject, advocating that higher education students conquer a wide variety of competencies (Arias *et al.*, 2018; Barnett, 2001; Díaz-Florez, 2018). The case of Colombia illustrates this process very well, being this the focus of what students have to achieve within each university degree, that is, that learning outcomes are translatable into mastery and expertise in a complex network of generic and specific competencies.

In addition, since 2000, the Ministry of National Education has been conducting evaluations at the end of university studies, called Saber Pro (Calderón *et al.*, 2018). These tests evaluate the generic competencies of critical reading, written communication, citizenship skills, quantitative reasoning and English. Due to this, universities have turned their attention to the promotion of these competencies, taking into account their relevance in professional training. In this scenario, in higher education institutions, the concern is focused on university training, aimed at the search for elements from the pedagogical field, to promote relevant spaces and strategies that directly address this problem.

Therefore, Universidad de la Costa has been working since 2018 to strengthen the generic competencies of its students, which has made it possible to cover all subjects and adjust the



Learning Assessment Model (Conde *et al.* 2021). One of the strategies is the evaluation of generic competencies, initiated in the first semesters and to be successively extended to the rest (Sánchez *et al.*, 2019). Similarly, the strategy was accompanied by a process of analysis within the programs, which allowed strengthening the work of teachers of specific subjects, with the objective that students strengthen their comprehensive training process. Therefore, it became necessary to create a space that became a tool for monitoring, follow-up and implementation of all activities that goes beyond simple supervision, thus creating the competency observatory of the Universidad de la Costa.

Theoretical references

Many contributions justify the development of this research concerning the competence observatory at the Universidad de la Costa. On the one hand, the background on the experiences in the creation, development and operation of these spaces in different areas and facets. And on the other, international contributions and advances in culminated and ongoing publications, which have served as a basis, justification and validation of the proposal, illustrated by the literacy across disciplines/content/curriculum (García *et al.*, 2019; Inciarte *et al.*, 2019; Marín *et al.*, 2019). Secondly, the diverse successful experiences are undertaken by the Universidad de la Costa in recent years, of great relevance and interest and with encouraging results and which are a reference (Sánchez *et al.*, 2019). And finally, the existence of other experiences in other institutions and can also provide relevant ideas.

There are observatories for all kinds of objects, events and situations. All of them have in common the research, analysis, recording, and monitoring of objects, events, and social situations of great importance and interest for the quality of life of people. Those in the educational field seem particularly relevant to us. In general, they aim to provide added value, carry out research, contribute to raising awareness of the variables involved, detect imbalances, provide ethical and civic value or contribute to the preservation of democratic values. They focus on specific axes or themes (for example, women, and children). And they are often of interest to

the community of professionals, researchers, students and future professionals.

The Local Management Observatory (Alcaldía Mayor Bogotá, 2020) pursues the search for information to improve informed decision-making and public transparency. The Observatorio Poblacional Diferencial y de Familias (Alcaldía Mayor Bogotá, 2020) focuses on this specific aspect of populations and families. An illustration of this type of observatory is the Observatorio de la Realidad Social (Gobierno Navarra, 2020), which implements specific studies; and provides databases on social services, employment, housing and demographics. Other observatories are located in higher education institutions and their role is diverse, focusing on the collection of information and monitoring of specific phenomena or objects to facilitate preventive and proactive, as well as reactive, decision making. Two observatories are illustrative: the Citizen Security Observatory and the Magdalena River Observatory. Likewise, a specific reference of great interest was the Coexistence Observatory of the Universidad de la Costa (CUC, 2018).

Interest in the mainstreaming of competencies has been growing in recent years at the international level. The case of Colombia illustrates the need for its empowerment, given the administrative requirements since it is necessary to sit for the national Saber Pro tests, which makes higher education institutions come developing various strategies that allow or contribute to improving the results in generic competencies. This, within the criticism of evaluation systems (Tamayo *et al.*, 2018), considering the situation of higher education in Colombia (OECD, 2016), the limitations of competency evaluation (Díaz-Flórez, 2018) and the complexity of initial teacher training and its relevance (Arias *et al.*, 2018).

In other cultural and academic spheres, although generic competencies are part of the Verification Reports of all degrees, there are no external or internal tests to evaluate their performance, as is the case in Spain and the European Union. In all areas, however, the concern for the mainstreaming of generic competencies is a fact, with different solutions. Three examples illustrate this growing concern, which can be generalized to the mainstreaming of other

competencies such as quantitative competencies. On the one hand, in the USA, recent systematic reviews note the precariousness and need to strengthen rigorous studies on the subject. In the case of literacy across content, both in the case of written communication or writing across disciplines (Miller et al., 2018) and reading and writing or literacy across disciplines (Scott et al., 2018) the data indicate a great weakness of the research and great concern.

In the analysis of studies on the subject in the training of future teachers in the last 50 years in the USA, they identified 3413 studies; after applying minimum quality criteria, only 29 studies conducted in the USA and English exceed the threshold, of which only three provide comparable quantitative quasi-experimental data (pre-post averages and a control group), the rest being analyses of experiences or other types of studies of quality but which do not allow comparison. In mainland China, a meta-analysis study of the last 20 years, identified 603 studies, meeting the criteria 59 conducted in China, of which only 4 used some control group (quasi-experimental), the rest being observational with a single measure; which reflects serious problems of generability and being able to make consistent statements, referring to the instructional models of self-regulation concerning the results in academic performance (Li et al., 2018).

All this is important because as pointed out by (Conde et al. 2018): Education is a constant and changing process. These changes in education lead to permanent studies and transformations in the designs of educational practices in institutions, from the macro aspects to the didactic elements of the task, taking into account the educational reality.

Implementation of the Competency Observatory.

The Observatory of Competencies of the Universidad de la Costa is a teaching project, whose primary function is to systematically monitor the results of performance in the appropriation and development of learning that occur in the Academic Programs from internal and external tests, using technical-scientific tools such as Research, Social Appropriation of

Knowledge and Pedagogical Intervention, to generate improvements in the substantive function of Teaching.

Taking into account the above, the following phases are established in the design of the process, which contribute to and are articulated with the research macro-project, which seeks to provide answers and in-depth analysis of the learning results of the summative evaluation for the generic and specific competencies of each of the academic programs.

These phases will be recursive for each of the actions and projects that are developed based on the data obtained: e.g., innovations on good practices; studies on quantitative reasoning skills; citizenship skills; English; digital skills; innovation on mainstreaming digital skills in the promotion of generic or specific skills.

Each one of the moments contemplated in the design of the macro project is expanded below and constitutes a reference for the research processes stimulated by the different academic programs of the Universidad de la Costa. Planning the research route is determined by three phases:

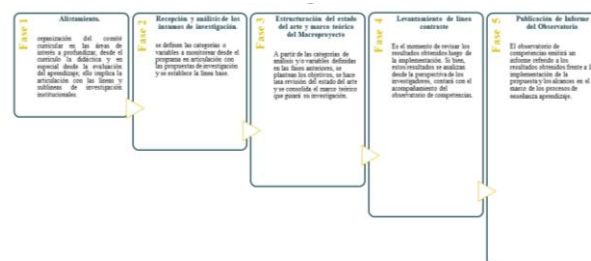


Figure 1. Phases of implementation of the research macroproject.

Phase 1: Enlistment.

The work in this phase will be oriented by the consolidation of the following aspects: organization of the curricular committee in the areas of interest to deepen, from the curriculum, didactics and especially from the evaluation of learning; this implies the articulation with the institutional lines and sublines of research.

Phase 2: Receipt and analysis of research inputs.

The results are received by the competency observatory and the Evaluation Unit. The suggested research axes are considered. Based on

these inputs, the categories or variables to be monitored from the program are defined in articulation with the research proposals and the baseline is established, which becomes the reference point for reflection on the University's situational framework in terms of competencies.

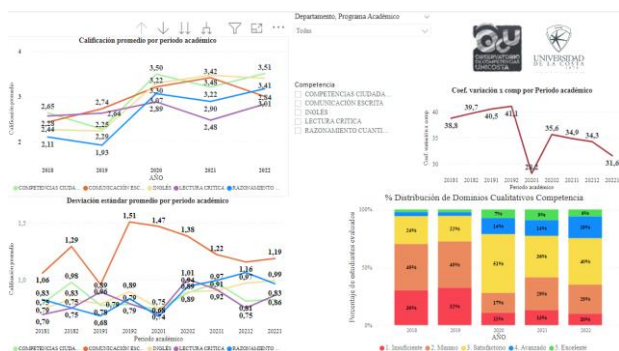


Figure 2. Performance of the generic competencies of Universidad de la Costa 2018 - 2022.

Phase 3: Structuring of the state-of-the-art and theoretical framework of the macro project.

Based on the categories of analysis and/or variables defined in the previous phases, the objectives are established, the state of the art is reviewed and the theoretical framework that will guide the research is consolidated. At this stage, collaborative work is required among the participants leading the research process, since the methodology for processing the data provided by the Observatory is defined.

Phase 4: Contrast line survey

It is time to review the results obtained after implementation. Although these results are analyzed from the perspective of the researchers, they will be accompanied by the competency observatory.

Phase 5: Publication of Observatory Report

The competency observatory will issue a report on the results obtained from the implementation of the proposal and its scope within the framework of the teaching and learning processes. It will recommend the relevance to act in the institutional context.



Figure 3. Sample reports generated by the Competency Observatory.

A look at the 2022 results

1. General characterization of those evaluated in the generic competencies test

In 20221, 11252 students were evaluated with the assessment of generic competencies, which corresponds to 91.76% of the total enrollment (11252), a value that was 2% lower than that recorded in 20212, however, it should be noted that the number of students enrolled was much higher than the period in comparison. It is worth noting that the highest annual growth in the number of students evaluated occurred between 20201 and 20202, reaching 96.6% and 96.7% respectively (Figure 4 and Table 1).

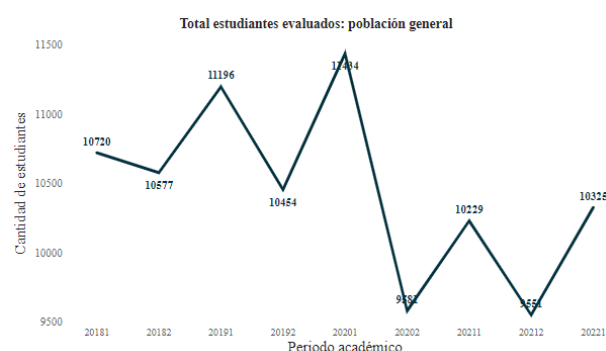


Figure 4. Total population of students assessed in the generic competencies test between 20181 and 20221.

2022, by the academic program in which they are enrolled, which are distributed as follows:

Academic period	Students enrolled	Students Evaluated	% share
20181	11497	10720	93.2%
20182	11028	10577	95.9%
20191	11641	11196	96.2%
20192	11028	10454	94.8%
20201	11833	11434	96.6%
20202	9913	9581	96.7%
20211	10758	10229	95.1%
20212	10197	9551	93.7%
20221	11252	10325	91.8%

Regarding the type of tests applied, Figure 2 presents the percentage of students evaluated between 2018 and 2022. In 2022, the proportion of students is concentrated in type A tests (35%), while students evaluated in type B tests are located, to a greater extent, at 24.5%. For their part, in 2018, students evaluated of test type D were mainly concentrated in 15% and those of type C with 22.41%. In the case of evaluated students, in 2022, it was 16.93% for type D and 23, 52% for test type D. Therefore, the proportion of students evaluated in the last 4 years increased by 13%.

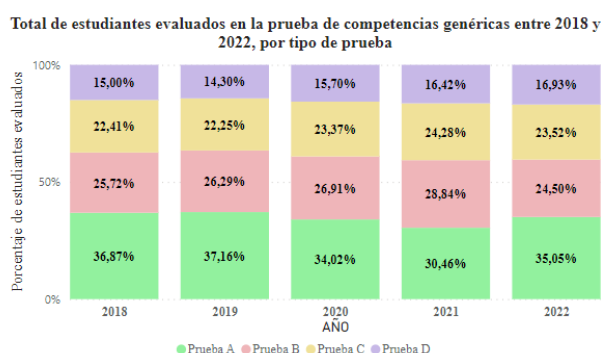


Figure 5. Proportion of students assessed in the generic competencies test between 2018 and 2022, by type of test.

The following characterizes the students evaluated in the generic competencies test in

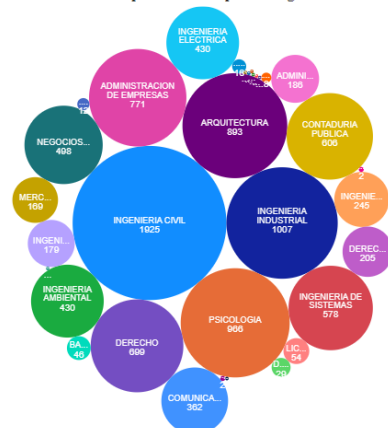


Figure 6 Total number of students assessed in the generic competencies test in 2022, by the program.

Civil Engineering with a total of 1925 students (19%); Industrial Engineering with 1007 (10%); Psychology with 966 (9%), Architecture with 893 (8%), Business Administration with 771 (7%), Law with 699 (6%). The remaining percentage is distributed among the 17 other programs.

Figure 7 shows that the average overall score for the last 4 years was 3.43 points in 20201, while the lowest (2.32 points) was in 20181. The standard deviation was between 0.43 and 0.65 points and the coefficient of variation (Table 2) was between 15% and 23%. These results show that the average overall score and the indicators of variation are similar across the periods analyzed.



Figure 7. Average rating between 2018 and 2022.



Table 2. Coefficient of variation (%) of global results

Periodo Académico	Desv. St general	Coef. variación general
20181	0,43	18,41
20182	0,50	20,03
20191	0,46	19,79
20192	0,58	23,25
20201	0,54	15,62
20202	0,61	18,14
20211	0,51	16,38
20212	0,65	21,29
20221	0,60	19,56

As can be seen in Figure 8, in 2022, 58% of those evaluated were placed in performance level 3 (Satisfactory), in which an increase of 47 points was presented compared to the 2018 results and, concerning 2019, 2020 and 2021 data, the percentage of those evaluated in this level increased by an average of 46 points. Regarding performance level 1 (Insufficient) for the 2022 application, 5% of those evaluated were placed at this level, a percentage that decreased by 22% presented in 2018. It is noteworthy that, in 2020, the lowest proportion of those evaluated in performance level 2 (Minimum) reached (18%), compared to the period 2018-2019 (67%) and 2016 (62%).

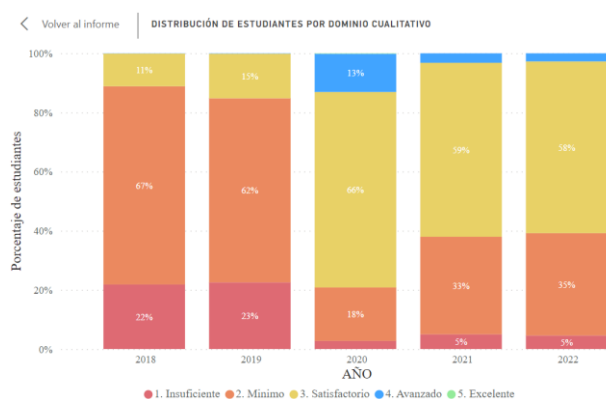


Figure 8. Performance levels by qualitative domain of overall generic competency test scores between 2018 and 2022.

In closing, this systematization responds to the challenge of higher education to make use of the results in academic management, so that an intelligent treatment of the information leads to the configuration of strategic decisions, with a view to continuous improvement in the learning processes of students, where generic competencies erect the professional with a global

and competitive view of the different economic environments.

REFERENCES

1. Alcaldía Mayor de Bogotá D.C. (2020). Observatorio de Gestión Pública Local y Participación. Bogota D:C, CO.: Secretaría Distrital De Gobierno. Recuperado de <https://www.gobiernobogota.gov.co/observatorio/que-es-el-observatorio#:~:text=El%20observatorio%20de%20Gestión%20Pública,las%20Alcaldías%20Locales%20%2C%20ayudando%20por>
2. Arias, D. H., Díaz, O. C., Garzón, I., León, A. C., Rodríguez, S. P., y Valbuena, E. O. (2018). Entre las exigencias de calidad y las condiciones de desigualdad: Formación inicial de profesores en Colombia. Bogotá: UPN.
3. Barnet, R. (2001). Los límites de la competencia. El conocimiento, la educación superior y la sociedad. Barcelona: Gedisa.
4. Calderón, A., Parra, C. A., y Piñeros, M. A. (2018). Guía de orientación Saber Pro: Módulos de competencias genéricas. Bogotá, Colombia: Instituto Colombiano para la Evaluación de la Educación (Icfes).
5. Conde, M. E.; Frías, O.; Sánchez, E. R. & Rico, R. (2018). Dominio de lineamientos pedagógicos en el modelo desarrollista. Una experiencia desde la enseñanza universitaria. Opción: Revista de Ciencias Humanas y Sociales. 34(18), 2407-2442.
6. CUC. (2018). Autoinforme de Acreditación. CUC
7. Díaz-Flórez, O. C. (2018). Las competencias en la educación superior. Debates contemporáneos. Tesis Doctoral. Bogotá: UPN
8. Gloria, MG, Rico-Ballesteros, R., Martínez-Palacio, U., Bolaño-Truyol, J., Ramos-Barrera, L., Fruto-Silva, E., & Miranda Acosta, R. (2021). Implementación del modelo de evaluación del aprendizaje a partir del uso de resultados: Estudio de caso Universidad de la Costa. Revista de Educación Geográfica Internacional en Línea, 11 (10), 2523-2533.
9. Gobierno Navarra. (2020). Observatorio de la Realidad Social, Pamplona, Departamento de Derechos Sociales del Gobierno de

- Navarra, 2021, 10 p. Recurado de <https://www.observatoriorealidadsocial.es/es/>
10. Inciarte, A. J., García, J. N., Sánchez, E. R., Marín, F. V., Conde, M. E., Castillo, J. S. & García-Martín, J. (2019). Incidencia de la evaluación y las metodologías docentes en el desarrollo de competencias genéricas, *International Journal of Developmental and Educational Psychology*, 31, 1(2), 221-230. <http://dx.doi.org/10.17060/ijodaep.2019.n1.v3.1475>
 11. Li, J., Ye, H., Tang, Y., Zhou, Z., y Hu, X. (2018). What are the effects of self-regulation phases and strategies for Chinese students? A 119 meta-analysis of two decades research of the association between selfregulation and academic performance. *Frontiers in Psychology*, 9, 1-13. <https://doi.org/10.3389/fpsyg.2018.02434>
 12. Marín, F. V., García, J. N., Inciarte, A. J., Sánchez, E. R., Conde, M. E. & García-Martín, J. (2019). Evaluación y metodologías docentes y su incidencia en las competencias genéricas: perspectivas teóricas, *International Journal of Developmental and Educational Psychology*, 31, 1(2), 187-198. <http://dx.doi.org/10.17060/ijodaep.2019.n1.v3.1469>
 13. Miller, D. M., Scott, C. E., y McTigue, E. M. (2018). Writing in the secondary-level disciplines: A systematic review of context, cognition and content. *Educational Psychology Review*, 30(1), 83-120. doi: 10.1007/s10648-016-9393-z
 14. OECD. (2016). La educación en Colombia. MEC: OECD. Recuperado de: https://www.mineducacion.gov.co/1759/articulos-356787_recurso_1.pdf
 15. Sánchez, E. R., Conde, M. E., Marín, F. V., Inciarte, A. J., García, J. N. & García-Martín, J. (2019). Antecedentes exitosos propios – valor añadido para la educación superior en colombia, *International Journal of Developmental and Educational Psychology*, 31, 1(2), 109-120. <http://dx.doi.org/10.17060/ijodaep.2019.n1.v3.1455>
 16. Scott, C. E.; McTigue, E. M.; Miller, D. M., y Washburn, E. K. (2018). The what, when, and how of preservice teachers and literacy across the disciplines: A systematic literature review of nearly 50 years of research. *Teaching and Teacher Education* 73, 1-13. doi: 10.1016/j.tate.2018.03.010
 17. Tamayo, L. A., Niño, L. S., Cardozo, L. S., y Bejarano, O. (2018). ¿Hacia dónde va la evaluación? Aportes conceptuales para pensar y transformar las prácticas de evaluación. Bogotá: IDEP

