

PERCEPTION OF SKILLS STUDENTS OF UNIVERSIDAD PUBLICA IN POST-PANDEMIC

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Abstract

This project analyzes the skills required by the scenarios generated in the post-pandemic in a university program as the factors that influence labor development that help decision-making and influenced by the globalization and internationalization of education by generating new challenges. A survey was conducted with items validated and supported in the literature for the collection of information and analyzed by means of a structural equation - method of estimating the least squares-, with a sample of 419 university students who participated through the descriptive survey method. Students have the perception about the need to obtain skills and how the work situation affects the acquisition of these to which they recommend that the directives of the program have a significant input that allows to acquire these skills.

Keywords: Skills, post-pandemic, management, learning, business

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Introduction

The skills that a person may have are a key factor for competitive development within a company which help to obtain good results combined with technological advances. However, combining the knowledge and skills that a person has will facilitate the development of their work regardless of their drawbacks. For this reason, the education provided by higher education institutions plays an important role in the development of these skills to ensure the preparation of their graduates. As in other disciplines, the academic community faces the challenge of reconsidering the knowledge and skills that students need to acquire to adapt to the demands of




Industry 4.0 solutions within national and international companies. Specifically, a recurring problem in relation to teaching is recognizing the relevance of what is taught (Vilalta-Perdomo et al., 2022). Both work and professional skills are defining in the student a sum of knowledge and skills that allows to reach the professional stage and perform their work and professional functions in the organization, so research becomes relevant in decision making.

Higher education plays the role of cultivating talents in national development and international that satisfies the sources of Talent for the development of the State, industry and companies. In addition, Higher education students can provide stimuli to improve family and personal career development (Peng and Yue, 2022). The changes presented due to technological developments and globalization accelerates due to Covid-19, I mean post-pandemic require skills that students expect develop and apply is it New skills. Access to opportunity includes the availability of options for professional growth, an increase in knowledge and skills. Formal and informal skills are essential for effectiveness in the workplace, associated with access to information and Access to support which includes comments, guidance and advice from colleagues, supervisors and other professionals (Terkamo-Moisio et al., 2022). Where Higher education institutions work with their students for their Skills entering working life.

Universities and educators need to take steps to bridge the gap between the skills they teach and labor market requirements since their role is a measure to prepare students for the labor market, and failure to keep up with advances in technology and labor market demand can lead to their decline (Karakolis et al., 2022). Future graduates arrive at university programs with difficulties in understanding and acquiring the different skills that higher education institutions offer in order to immerse themselves in working life. The mastery of these skills is one of the aspirations in the curricula of university careers by contributing to the multilateral and harmonious training at which it achieves a certain level, systematizing the use of the scientific method and applying it in various professional contexts (Estrada Molina et al., 2022). The scarce creation and implementation of knowledge in the area of academic production in science, technology and development diminishes competitiveness with other institutions at the local, regional, national and international levels. It is propitious to strengthen the scientific attitude of students through a curricular update in order to improve research training (Díaz Espinoza, M., and Cardoza Sernaqué, 2021). In Colombia, the Ministry of National Education has been carrying out since 2008 actions aimed at the approach of generic or transversal competences to all the nuclei of training in higher education in order to improve the quality of higher education in undergraduate programs. From the labor field, it is important that future candidates have technical skills (understood as technical skills), which refer to knowledge, that is, specific skills related to the correct performance of a specific professional field (Álvarez-Santullano et al., 2018). A connection is sought between what is typically taught in management education programs and the interpersonal skills that real-world organizations look for in their leadership candidates (Fulmore et al., 2022). Likewise, the institutions responsible for improving education recognize that Colombia has the need for higher education training that is relevant to society, so they have formulated a series of generic and specialized skills, which constitute the horizon of desirable training actions in higher education being a reference to monitor the quality of training in undergraduate academic programs.

The term competence is defined as a combination of knowledge, skills and attitudes, and is understood as a holistic concept for the development of a certain level of experience (Goncz, 2013 cited by Pramila-Savukoski et al., 2023). The Colombian government has implemented reforms in order to obtain quality in education, based on objective number four of the Sustainable Development Goals -SDGs-, quality education, being clear that education will allow people to get out of poverty, all skills become important for the preparation of the student, This is how they prepare for professional life within these are the communicative skills and management of oral expression in this sense (Maldonado et al., 2022) affirm that these



competences are priorities for professional development in different fields and involve the learning of a series of skills ranging from the management of adequate vocabulary, the organization of discourse and information, to the regulation of anxiety that usually causes public speaking.

From the field of university education it is required to pay attention to the necessary skills in Industry 4.0, at this stage people are trained to enter working life. Higher education institutions need to focus their efforts on providing all the necessary skills to students, not only for the present but also to face the work of the future (De la Calle Durán, et al., 2022). That is, it is important that universities continue to train and reinforce reading, writing and orality skills to develop and strengthen these transversal competences, in order to improve the results of teamwork and safe practice (Chaparro-Serrano, 2022). There are skills but this research starts from the point of view of the students by indicating their perception together with the preparation of the teachers to be fundamental axes in the achievement of the different skills. Currently, teachers face a great challenge related to the introduction of technologies that facilitate autonomous, personalized and collaborative learning in higher education, which forces us to rethink the use of a pedagogical approach based on practice, reflection and mobilization of knowledge associated with the use of Information and Communication Technologies (ICT). (Andrés et al., 2022). Social-emotional skills become important in professional performance, especially in health careers, so that empathy and emotional intelligence influence interpersonal relationships linked to professional practice (Stevens-Rodríguez and Moral-Jiménez, 2022). The models of integral educational frameworks allow to observe and evaluate the skills required within each discipline from different dimensions, including technological, pedagogical, contextual and humanistic aspects (González-Pérez and, Ramírez-Montoya, 2022). University professors, in addition to having the responsibility of developing procedural competences, have the commitment to train ethical, responsible, honest and upright men and women, capable of responding to the demands of the new times (Pinargote Macías et al., 2022). Educators are urged to review relevant pedagogical theories, principles and consider creative ways to apply them to learning to ensure the continuation of skills education (Seymour-Walsh et al., 2020). Teachers need to cultivate their knowledge and skills on topics they may not have formally learned in their training. They must also examine their own ability to interact with increasingly diverse students (Dhaliwal and Hauer, 2021).

1. Methodology

An instrument was applied to students of the commercial business administration program of the Universidad Colegio Mayor de Cundinamarca, who were selected from a simple random sample - MAS - which was finally made up of 419 students. The instrument applied collected information such as age, gender, marital status and employment situation in which students are currently located.

2. Instrument applied

A survey was designed, taking apart from the information collected (such as age, gender, marital status and employment status), they were presented with a series of skills which, due to the results obtained, were classified by the researchers into three groups, where the skills were organized by groups: Group 1) English, creativity and innovation, global connections - business network, collaborative work and critical thinking; Group 2) Development of communication, local connections - business network and self-direction; Group 3) Emotional intelligence, continuous learning, assertive communication, analysis of real situations, assertiveness, tolerance, effectiveness.



3. Results and discussion

Through descriptive statistics, an analysis of the students' abilities was carried out. Table 1 presents the skills that the researchers have defined as impact skills of the first group because they are the most selected by the students of the commercial business administration program, the percentages of participation obtained by each skill are appreciated, this first group of five skills obtained 69.21% of preferences, because 290 students selected them. The findings revealed that students perceive that having skills such as a second language in this case English as a second skill creativity and innovation, the concern is that being students of the last semesters of the program they would be graduating with the perception of not having these skills, at least that they perceive as the time that allows to acquire this skill.

Table 1. Perception of the first group of Skills

Skills	Percentage
English	16,0%
Creativity and innovation	15,0%
Global connections - business network	13,1%
Collaborative work	12,6%
Critical thinking	12,4%

Likewise, students perceive that other skills such as global connections - business network, in recent years at the level of Latin America global connections together with innovations. The first mode of globalization of innovation is the international exploitation of technologies, which refers to international trade in products and services with incorporated technologies, the licensing of patents to non-residents, and production abroad using technologies generated in the country of origin (Guimón et al., 2019). The education and training of the individual are closely linked to advances in information and communication technologies in the new knowledge society (Simanca Herrera et al., 2022). In the following figure, the skills that the students selected are appreciated.

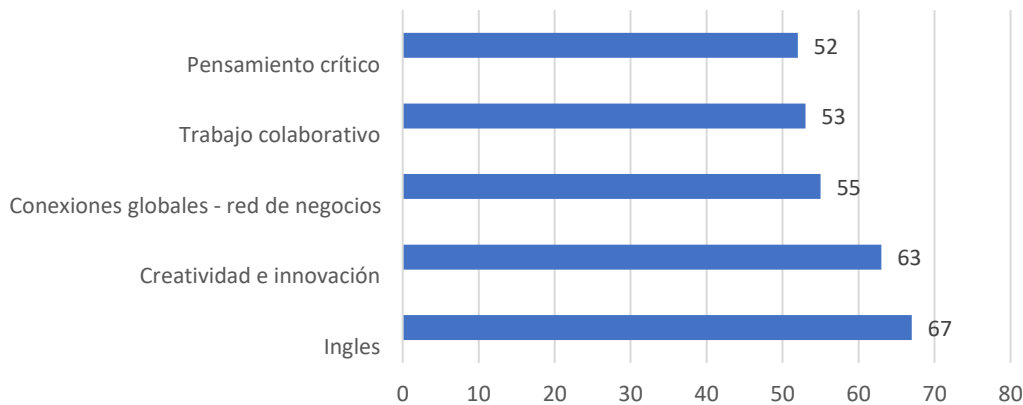


Figure 1. Perception of first group of Skills

Table 2 presents the skills that the researchers have defined as the second group of medium-impact skills because they are selected among the total sample of students of the commercial business management program, you can see the percentages of participation obtained by each of the skills. It is glimpsed as the "development of communication" is a skill that they request, it is recommended to analyze a series of strategies because not being able to carry out a

communication interferes in the professional development of them. For communication training to be effective and transferable, real-life practice and the complexity of current interactions must be closely reflected (Parry et al., 2022).

Table 2. Perception of the second group of Skills

Skills	Percentage
Development of communication	10,7%
Local connections - business network	7,6%
Autodirección	6,4%

Other skills that students perceive to feel prepared and competitive at a professional level are local connections - business network and self-direction. These results recommend generating improvement plans, so that students achieve these skills facilitating their immersion into work and professional life. It is important to know the degree of development of students' skills and their relationship with academic results, so that later programs can be implemented that help students develop their thinking skills or self-direction skills (Escamilla Pérez and Heredia Escorza, 2019).

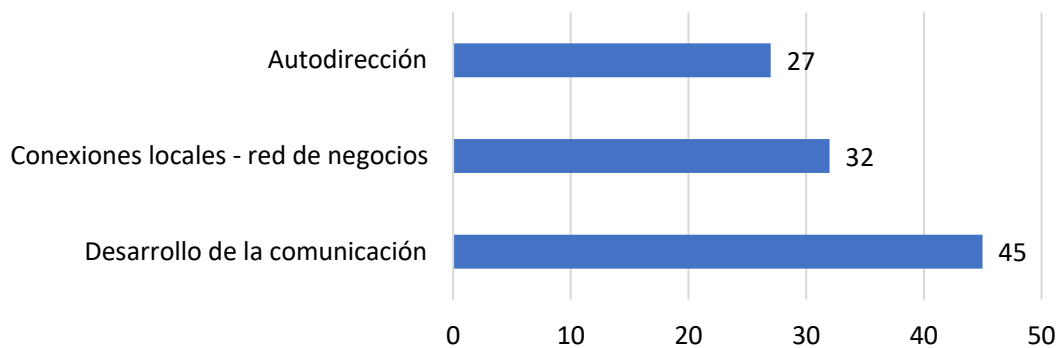


Figure 2. Perception of second group of Skills

The results also show how they have a series of skills that were selected by 6.4% of the students, which before the sample is a small percentage for which it is recommended to take into account when making changes in the programmatic contents. Table 3 shows the skills classified by the research professors in the third group because they were selected by less than twenty students.

Table 3. Perception of the third group of Skills

Skills	Percentage
Emotional Intelligence	1,4%
Continuous learning	1,2%
Assertive communication	1,0%
Analysis of real situations	1,0%
Microsoft Excel	0,7%
Assertiveness, Tolerance, Effectiveness	0,7%

Students perceive that to be prepared and competitive in a labor market that is increasingly globalized, so they affirm that other skills such as mastering local connections, business network



and self-direction are required. The workforce has also changed in terms of skills, and there has been a transformation of large, unskilled employment into small numbers of skilled employees (Ozdemir et al., 2023). From this, the results recommend generating improvement plans, so that students achieve these skills that facilitate their immersion in work and professional life. It is important to know the degree of development of students' skills and their relationship with academic results, so that later programs can be implemented that help students develop their thinking skills or self-direction skills (Escamilla Pérez and Heredia Escorza, 2019).

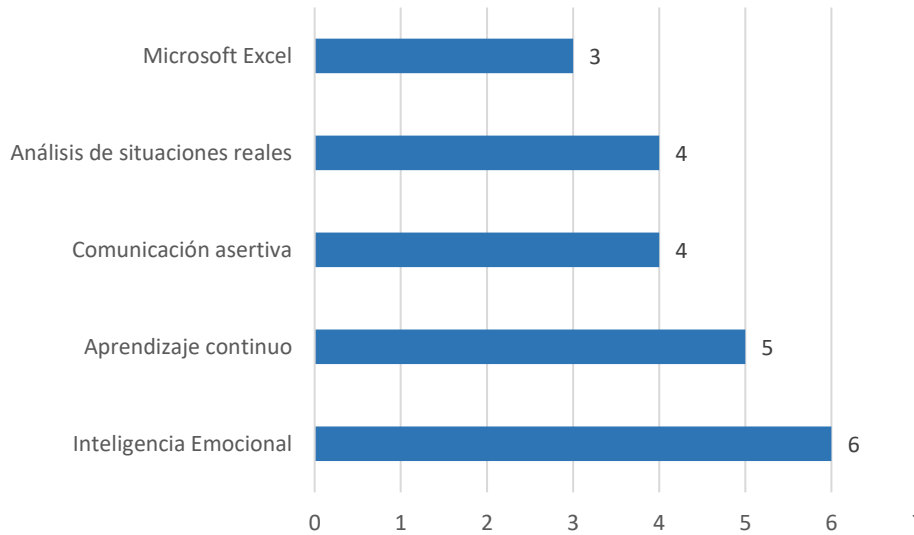


Figure 3. Perception of the third group of Skills

4. Conclusions

This research project provides a series of skills that students perceive to make their immersion in professional life to which from their perception their preparation to face the labor market professionally must be improved, therefore, it is recommended to take pertinent actions such as academic improvement plans with current students who are a few semesters away from finishing their professional career.


This as a reference the skills in front of the perception of the students to face the professional world, this list allows to take it as an axis of main adjustments both in the objectives of the programmatic contents and in the contents, this will allow to take strategies and actions of strengthening such as seminars, courses of short duration, workshops, etc. and taking into account that within the skills have in a high percentage the second language of English, For this, it is recommended to work from the institutional perspective, because changes in funds are required to achieve this skill.

In relation to the ability of collaborative work, the use of tools and techniques is recommended through the development of classroom projects to strengthen communication and teamwork by carrying out pedagogical teaching strategies, including making use of other skills such as use and mastery of information and communication technologies - ICT, also of learning and knowledge technologies - TAC, the latter from a formative context within education and finally of technologies for empowerment and participation - TEP, making use of the great possibilities presented by web 2.0, thus motivating education through a new pedagogical model.



References

- [1] Álvarez-Santullano, Mercedes, de Prada-Creo, Elena, & Pino-Juste, Margarita. (2018). Study on technical capacity and transversal competences developed in university practices. *Pedagogical Studies (Valdivia)*, 44(3), 137-155. <https://dx.doi.org/10.4067/S0718-07052018000300137>
- [2] Andrés, Esthela M. San, Rodríguez, Milagro C., Pazmiño, Marcos F., & Mero, Kevin M.. (2022). Web 2.0 technologies in university training processes: training program to promote professor's knowledge and skills. *Formación universitaria*, 15(1), 127-134. <https://dx.doi.org/10.4067/S0718-50062022000100127>
- [3] Chaparro-Serrano, M. F. (2022). Communicative competence, oral and written, in students of health sciences of a university of Bogotá D. C., Colombia. *Educating 2022*, vol. 58/2 501-516 <https://doi.org/10.5565/rev/educar.1502>
- [4] Dhaliwal, G., Hauer, K.E. Excellence in medical training: developing talent, not classifying it. *Perspect Med Educ*10, 356-361 (2021). <https://ezproxy.unicolmayor.edu.co:2162/10.1007/s40037-021-00678-5>
- [5] De la Calle Durán, María-Carmen, Rodríguez-Sánchez, José-Luis, & González-Torres, Thais. (2022). Industry 4.0 talent skills, demand versus supply: a case study at Rey Juan Carlos University, Spain. *University education*,15(1), 19-32. <https://dx.doi.org/10.4067/S0718-50062022000100019>
- [6] Díaz Espinoza, M., and Cardoza Sernaqué, M. A. (2021). Research skills and attitudes in master's students in education. *Revista Venezolana de Gerencia*, 26 (Especial 6), 410-425.<https://doi.org/10.52080/rvqluz.26.e6.25>
- [7] Escamilla Pérez, Marco Antonio and Heredia Escorza, Yolanda. (2019). Self-direction, thinking skills and academic performance in normal students. *Dialogues on education. Current Topics in Educational Research*, 10(19), 00012. <https://doi.org/10.32870/dse.v0i19.492>
- [8] Estrada Molina, Odriel, Fuentes Cancell, Dieter Reynaldo, Simon Grass, Willian. (2022). Training of research skills in computer engineering students of the subject of software management: A case study at the university of computer sciences, Cuba. *Engineer. Revista chilena de ingeniería*,30(1), 109-123. <https://dx.doi.org/10.4067/S0718-33052022000100109>
- [9] Fulmore, J. A., Olson, J. y Maellaro, R. (2022). Align leadership education: link the development of interpersonal skills with business needs. *Journal of Management Education*. Two: 10.1177/10525629221133369
- [10] González-Pérez LI, Ramírez-Montoya MS. Components of Education 4.0 in 21st Century Skill Frameworks: A Systematic Review. *Sustainability*. 2022; 14(3):1493. <https://doi.org/10.3390/su14031493>
- [11] Gonczi, A. (2013). Competency-based approaches: linking theory and practice in professional education with particular reference to health education. *Educ. Philos. Theory* 45 (12), 1290-1306. <https://doi.org/10.1080/00131857.2013.763590>.
- [12] Guimón, José, Cancino, Christian, López, Asunción & Miranda, Jaime. (2019). New modes of connection with global innovation networks: the case of Chile. *Latin American profiles*, 27(54), 00009. <https://doi.org/10.18504/pl2754-009-2019>
- [13] Karakolis, E., Kapsalis, P., Skalidakis, S., Kontzinos, C., Kokkinakos, P., Markaki, O. y Askounis, D. (2022). Bridging the Gap between Technological Education and Job Market Requirements through Data Analytics and Decision Support Services. *Appl. Sci.* 2022, 12, 7139. <https://doi.org/10.3390/>
- [14] Maldonado, M. A., García, A., Armada, J. M., Alós, F. J., & Moreno, E. (2022). Oral competence and anxiety: training and effectiveness in university students. *Latina Journal of Social Communication*, 80, 401-434. <https://www.doi.org/10.4185/RLCS-2022-1800>
- [15] Ozdemir, P., Sevim, A. y Albayrak, T. (2023). Closing the gap between present and future through education: MINE-EMI project, *Case Studies on Transport Policy*, Volume 11, 2023, 100936, ISSN 2213-624X, <https://doi.org/10.1016/j.cstp.2022.100936>.
- [16] Peng MY-P and Yue X (2022) Improving the professional decision-making status of socioeconomically disadvantaged students through learning engagement: SOR model perspective. *Forehead. Psychol.* 13:778928. DOI: 10.3389/fpsyg.2022.778928

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- [17] Pinargote Macías, E. I., Vega Intriago, J. O., Moreira Choez, J. S., & Díaz Macías, T. M. (2022). *Competences of university professors in times of pandemic*. *Revista Venezolana de Gerencia*, 27(Especial 7), 347-359. <https://doi.org/10.52080/rvgluz.27.7.23>
- [18] Pramila-Savukoski, Raila Kärnä, Heli-Maria Kuivila, Jonna Juntunen, Miro Koskenranta, Ashlee Oikarainen, Kristina Mikkonen (2023). *The influence of digital learning on health sciences students' competence development- A qualitative study*, *Nurse Education Today*, Volume 120, 2023, 105635, ISSN 0260-6917, <https://doi.org/10.1016/j.nedt.2022.105635>.
- [19] Seymour-Walsh AE, Weber A, Bell A, Smith T. *Teaching psychomotor skills online: exploring the implications of novel coronavirus on health professions education*. *Rural and Remote Health* 2020; 20: 6132. <https://doi.org/10.22605/RRH6132>
- [20] Simanca Herrera, F., Barbosa Guerrero, L.M. & Palacios Rozo, J.J. (2022). *Strategias tecnopedagógicas of professors in the process of teaching computer science in a public university*. *Journal NeuroQuantology*, Vol. 20 No. 13 (2022) DOI: 10.14704/nq.2022.20.13.NQ88168
- [21] Stevens-Rodríguez, R. P. & Moral-Jiménez, M. (2022). *Empathy, emotional intelligence and self-esteem in university students of health careers*. *Electronic Journal of Psychoeducational Research*. Vol. 20 No. 57 (2022): September 1, 2022 <http://orcid.org/0000-0003-2421-9675>
- [22] Terkamo-Moisio, Mira Palonen, Heli Vaartio-Rajalin, Laura-Maria Peltonen, Pirjo Partanen, Helena Leino-Kilpi, Marja Kaunonen, Pirjo Kaakinen, Arja Häggman-Laitila. (2022). *Structural and psychological empowerment of students obtaining continuing leadership education in Finland-a national survey*, *Nurse Education Today*, Volume 116, 2022, 105456, ISSN 0260-6917, <https://doi.org/10.1016/j.nedt.2022.105456>.
- [23] Vilalta-Perdomo, E., Michel-Villarreal, R. y Thierry-Aguilera, R. (2022). *Integrating Industry 4.0 in Higher Education Using Challenge-Based Learning: An Intervention in Operations Management*. *Education Sciences*12, no. 10: 663. <https://doi.org/10.3390/educsci12100663>.