

---

## TRANSVERSAL SKILLS IN THE ACADEMIC CURRICULUM OF MANAGEMENT SCHOOL STUDENTS IN ALGERIA

Meryem AMGHAR<sup>1\*</sup>, Nahla NAGA<sup>2</sup>, Anaïs Radja ZOUAMBI<sup>3</sup>

<sup>1,2</sup>*Research Center in Applied Economics for Development-CREAD, Algiers, Algeria*

<sup>3</sup>*Higher School of Commerce – ESC, Tipaza, Algeria*

*\*Corresponding author's e-mail: meriemamghar06@gmail.com*

Received 04.09.2023; accepted 04.11.2023

---

**Abstract.** In a context of higher education reform, non-technical skills have gained a particular status as they are now placed at the core of educational programmes. This article aims to understand the involvement of higher education institutions (HEIs) and students in acquiring and developing non-technical skills. Accordingly, we conducted a quantitative survey among students at a management school. The results of this study suggest that students play an active role in their own skill development by engaging in scientific clubs, associations, and teamwork. However, this may not be sufficient to ensure better learning of cross-cutting skills, and higher education institutions must intervene by creating an environment conducive to this growth.

**Keywords:** *Assessment, higher education, soft skills, students, university.*

**JEL Classification:** 123-124-125

---

### INTRODUCTION

Higher education has undergone global renewal in its mission redefinition, structures, operations, and work methods (Sá & Serpa, 2018). Increasing importance is placed on employability and the acquisition of skills that enhance post-university life. Currently, the higher education system contributes to national development and growth through the enhancement of human capital via training and knowledge production, as well as their application in real life. In this context, higher education stakeholders must focus on developing students' knowledge, skills, and attitudes. One challenge university educator's face is creating a classroom learning environment that enables students to develop the skills employers seek in new recruits (Vogler et al., 2018).

Additionally, the evolution of the job market continues to expand, prompting the idea of continuously re-evaluating and revising the curriculum of the higher education system. Moreover, the job market demands that technical skills be complemented with non-technical skills, which should be integrated into the training programme (Caggiano et al., 2020; European Commission, 2015). Similarly, graduates face the requirements of the knowledge era; the skills they need today are 21st-century skills that prepare our youth for the transition from the university world to the world of work (Kivunja, 2014).

Consequently, universities worldwide are increasingly striving to equip their graduates with cross-disciplinary skills beyond technical and scientific expertise to enhance student employability (Yan et al., 2019). Although non-technical skills are important for students and university graduates, their level of relevance varies from one university to another. Some non-technical skills may be considered more of a priority by employers in one field and disregarded in another (Saad Fadhil et al., 2021).

The objective of this study is to understand how the acquisition and development of non-technical skills are carried out within the higher education institution, taking into account the involvement of both the student and the institution. To achieve this objective, it is essential to inquire about the type of skills students have been able to acquire and develop in their academic curriculum, and about the role of the institution and students in this learning process.

To conduct this study, we began with a literature review consisting of three parts: initially, a definition of non-technical skills, followed by an exposition of various classifications of these skills to identify those most in demand in the university curriculum and those that students must develop to survive and be effective in the professional world. In the third part, we highlighted the relationship between non-technical competence and higher education. Subsequently, we described the methodology of this study, where we opted for a quantitative approach with a questionnaire distributed to students of an advanced school of management. Finally, the study results are presented along with the analysis and conclusion.

## **1. LITERATURE REVIEW**

### **1.1. Non-Technical Skills**

According to Le Deist & Winterton (2005), skills refer to a set of knowledge, abilities, or capacities that enable individuals to successfully perform certain tasks. This concept is often linked to cognitive abilities. There are two types of skills: technical and non-technical. Technical skills, also known as hard skills, refer to specific academic and professional disciplines or domains that enable the successful completion of tasks (Escolà-Gascón & Gallifa, 2022).

Non-technical skills are defined as interpersonal skills essential for daily life that help individuals interact and work with others. They are known as soft skills and cross-functional skills (Devedzic et al., 2018; Moss & Tilly, 1996). According to Caggiano et al. (2020) and Heckman & Kautz (2012), non-technical skills are related to personality traits, goals, and motivations. They can be considered a significant value addition that enables broader and more highly valued outcomes in the current job market. Non-technical skills help individuals adapt and exhibit positive behaviours to effectively address challenges in their professional and daily lives (Mwita et al., 2023). Non-technical skills can be assessed at two levels: as cognitive capacity and as a psychological state based on a person's self-perception (Escolà-Gascón & Gallifa, 2022).

In fact, some studies have demonstrated that cross-functional skills can be viewed as cognitive abilities, as shown in Vogler et al. (2018) study on project-

based learning, where students solve authentic problems like those they will encounter in the workplace. This type of learning has emerged to help students develop non-technical skills such as problem-solving, leadership, and communication. Thus, Tsankov (2020) indicates that the development of students' cross-functional skills is directly linked to the use of cognitive abilities for learning and interpreting skill-based knowledge.

In general, cross-functional skills encompass both cognitive and social skills that contribute to clarifying ways of learning, thinking, and acting, as they represent the foundations and attributes necessary for individuals to excel in any job or life domain.

## **1.2. Classification of Non-Technical Skills**

Skills are more closely related to emotional and social intelligence (Devedzic et al., 2018). In a professional context, the most important skills include integrity, communication, courtesy, responsibility, social skills, positive attitudes, professionalism, flexibility, teamwork, and professional ethics (Escolà-Gascón & Gallifa, 2022). Some authors are more specific and include skills related to innovation on an individual and communal scale, the ability to establish and maintain relationships, tolerance and uncertainty, and passion and optimism (Ferrerás-García et al., 2021; Kivunja, 2014; Krstikj et al., 2022).

Other studies have further categorized non-technical skills for better classification, such as Escolà-Gascón & Gallifa (2022) and Sá & Serpa (2018), who introduce a psychometric instrument and a new measurement model specialised in quantifying non-technical skills in an educational context. The authors group non-technical skills into three personal styles: the transformative style, which includes engagement, originality, integrity, entrepreneurial orientation, and inefficiency; the analytical style, referring to critical thinking, rigor, precision, and indeterminacy; and the collaborative style, which encompasses engagement, sensitivity to the environment, teamwork, and autonomy.

Within the Framework for 21st Century Learning, the domain of learning and innovation skills includes skills that are “increasingly recognized as those that prepare students for an increasingly complex life and work”. Each of these elements begins with the letter C, explaining their designation as the 4Cs of learning and innovation skills. The 4Cs are critical thinking and problem-solving, communication, collaboration, and creativity and innovation (Kivunja, 2014). According to the Tuning project (2021), a European university project focusing on studying and classifying the most relevant non-technical skills in education, we find critical thinking, problem-solving, leadership, responsibility, communication, and collaboration (Escolà-Gascón & Gallifa, 2022).

Furthermore, a study by Chan & Luk (2021) on the development of non-technical skills of students identified six types of skills through exploratory factor analysis, namely, skills related to cultural awareness and global citizenship, interpersonal and leadership skills, problem-solving and critical thinking skills, self-awareness and resilience, information literacy, and communication skills.

The World Economic Forum in 2018 highlighted 10 skills (in order of importance) that students need to develop to thrive and be effective in the future:

(1) complex problem-solving, (2) critical thinking, (3) creativity, (4) people management, (5) coordinating with others, (6) emotional intelligence (EI), (7) judgment and decision-making, (8) service orientation, (9) negotiation, and (10) cognitive flexibility. These are considered non-technical skills and entrepreneurial skills (Igwe et al., 2022).

However, according to Tang (2018a), the most important non-technical skills for a university educator include teamwork, to equip their students with the necessary skills for common challenges in team activities. Communication is identified as the most crucial skill to acquire because it is through communication skills that educators can provide creative and effective solutions to students' problems. Additionally, the acquisition of critical thinking and problem-solving skills has been identified as an essential non-technical skill.

Referring to various classifications, especially studies that have contributed to determining non-technical skills to be developed in higher education institutions and within the curriculum of higher education students, four types of skills emerge consistently: communication skills, collaboration and teamwork skills, critical thinking skills, and creativity and innovation skills. However, interpersonal and leadership skills, complex problem-solving skills, people management, emotional intelligence, judgment and decision-making, negotiation and negotiation skills, empathy, time and pressure management should be included in our study because we are interested in training future managers.

**Table 1.** Definition of Skills Critical Thinking, Communication Collaboration Creativity and Innovation) Elaborated by the researchers from Asefer & Abidin (2021), Kivunja (2014), Succi & Wieandt (2019)

Skills	Definition
<b>Critical thinking</b>	Critical thinking skills are defined as the intellectually disciplined process of conceptualizing, gathering, applying, analysing, synthesising, and/or evaluating information from various sources to solve problems and make decisions.
<b>Communication</b>	Communication skills involve the ability to convey, receive, and interpret information accurately. They encompass the ability to articulate thoughts and ideas effectively, orally and in writing, the ability to listen and understand what is being said, the ability to use communication effectively, the ability to utilise a wide range of related media and technologies, and the ability to communicate in various settings.
<b>Collaboration</b>	Collaboration skills involve the abilities that help individuals work effectively in teams and the way individuals cooperate with others to achieve common goals. They include the ability to give and receive feedback from peers or other team members to accomplish a shared task, share ideas, experiences, creativity, and contributions with other team members.
<b>Creativity and Innovation</b>	Creativity and innovation skills involve the ability to harness new ideas or novel uses of ideas to add social or economic value. They represent the capacity to generate ideas and suggest ways or approaches to doing things that yield positive outcomes in the workplace (Asefer & Abidin, 2021).

### **1.3. Soft Skills and Higher Education**

Developing non-technical skills in students has become increasingly essential to ensure better employability and a successful career. Many higher education institutions have managed to provide students with aptitude and skills suitable for the job market (Igwe et al., 2022). Some institutions have designed special programmes to help students understand the importance of non-technical skills and assist them in acquiring these skills on campus. These programmes focus on students gaining both material and non-material skills, as both are equally important for professional success (Mwita et al., 2023). Some of these cross-cutting skills are acquired simultaneously with technical and scientific skills, either explicitly through interdisciplinary and multidisciplinary methodologies and approaches, or implicitly as by-products of the contexts in which technical and scientific skills are acquired (Sá & Serpa, 2018). However, higher education institutions must do more to enhance graduates' employability and urge them to implement work-based learning effectively by communicating the urgency of developing non-technical skills to students and adequately preparing them for the job market (Succi & Canovi, 2020).

Likewise, to ensure effective teaching in higher education institutions, teachers are expected to possess these non-technical skills because they cannot teach what they do not have (Tang, 2018). However, learning and skill development involve a teaching and learning logic that goes beyond the traditional academic culture in initial training and essentially in the classroom context (Sá & Serpa, 2018). Furthermore, when analysing the conditions for developing cross-cutting skills, it is important to consider the specificities of the constructivist design of the role of the environment. Learning tasks have contextual meaning, i.e., they are related to real-world problems (Tsankov, 2020). In the same vein, the author advocates for the adoption of this model in higher education as an essential means of promoting the development of cross-cutting skills, particularly through intentional and systematic application and methods that facilitate students' cognitive learning and application in specific contexts.

Various methods and approaches have been proposed to facilitate the transfer of cross-cutting skills in the classroom through real-world simulated situations. Examples include project-based work on real-life cases and problems, which promote and stimulate the development of not only technical and scientific but also cross-cutting skills among students (Deep et al., (2019); Sá & Serpa, 2018). Game-based learning can also be considered a relevant approach for acquiring non-technical skills (Mwita et al., 2023). Furthermore, new approaches to the teaching and learning process require treating the student as a subject, not an object of education. It is essential to adopt methodologies that allow students to learn and apply actively and independently; promote student autonomy by confronting them with real problems and situations; develop students' integrative and multidisciplinary knowledge; and finally, teachers should be able to organise, inspire, and motivate students within this new educational approach (Tsankov, 2020).

## 2. METHODOLOGY

The global education and higher education system have witnessed a period of introspection, transformation, and advancement. Algeria is one of the countries that, in recent decades, has faced ongoing challenges in its education and higher education system. A government action programme on the promotion of the knowledge economy, research and development, innovation, employability, and the development of skills required to stimulate the country's economic growth has been implemented by the Algerian state, with several actions related to graduate employability and the development of non-technical skills.

Likewise, the current literature review is sufficiently comprehensive in the field of non-technical skills to provide us with a list of essential skills among students. This research was designed to understand how the acquisition and development of non-technical skills are carried out within higher education institutions (HEIs) and what role both students and the institution play in this process.

The research began with a literature review, enabling us to initially select the most demanded non-technical skills in the job market, namely critical thinking, communication, collaboration, creativity, and innovation (Asefer & Abidin, 2021; Kivunja, 2014; Succi & Wieandt, 2019). Additionally, the research focused on the various means and methods used by students and implemented by academic institutions to acquire and develop non-technical skills.

To achieve our research objectives, an exploratory study was conducted by administering a quantitative survey through a questionnaire addressed to students at a management school. The school has over 550 students enrolled in the Master programmes. We chose a management school for the initial study because the learning of non-technical skills in management studies is considered more prioritized by employers (Saad Fadhil et al., 2021). The questionnaire was administered to all students in the school in June 2023, followed by an intensive reminder phase during the months of July 2023.

The questionnaire was divided into two parts. Firstly, we prioritized the use of self-assessment of non-technical skills. Self-assessment is considered an effective tool for learning, especially in a competency-based education framework. Students are encouraged to reflect on their own learning, allowing them to develop their skills. Additionally, the curriculum should be structured in a way that increasingly allows students to steer their own learning. To enhance the active role of students in assessing learning outcomes, new and valid self-assessment tools are necessary (Sturing et al., 2011a). Although this tool has often been contested because people tend to respond in ways that present themselves more favourably, many advantages support the use of self-assessment, such as individuals possessing better quality information about themselves (Ward et al., 2002).

The second part of the questionnaire addresses the methodologies for acquiring non-technical skills, the means implemented by the institution to acquire and develop these skills. It also delves into the obstacles encountered in learning non-technical skills and concludes with the demographic information of the respondents.

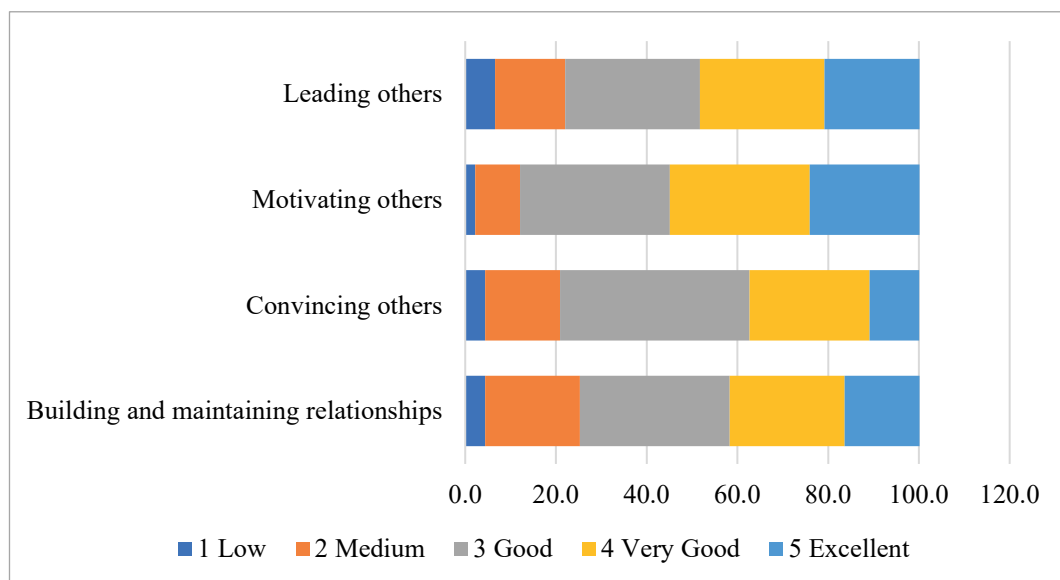
Each question in the form was presented using a five-point Likert scale. It is important to note that the skills were represented in the form of items derived from

our literature review (Asefer & Abidin, 2021; Kivunja, 2014; Succi & Wieandt, 2019). Concerning data processing, we used SPSS version 22 and Excel version 2019. We opted for a bivariate study to describe and measure the distribution of values that each variable used in our study could take. We conducted a descriptive analysis to determine the importance of each item proposed in our questionnaire and obtained the results below.

### 3. RESULTS AND DISCUSSION

The students who participated in the survey were predominantly enrolled in the Master programmes; with 57.1 % in their second year of Master studies, 40.7 % in their first year, and 2 % were PhD candidates. The gender distribution was 68.1 % female and 31.9 % male.

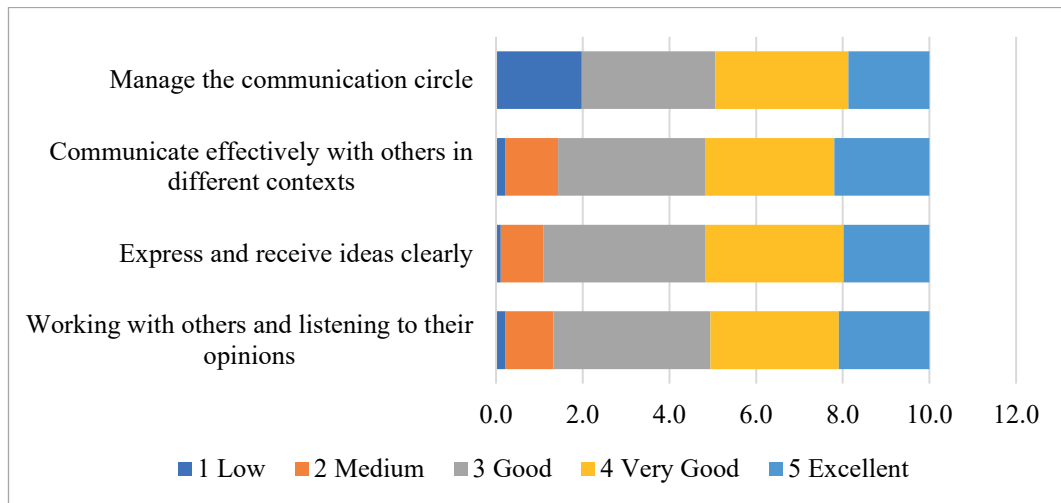
Regarding skills, the students assessed themselves as having communication, leadership, critical thinking, and innovation skills ranging from moderate to good.



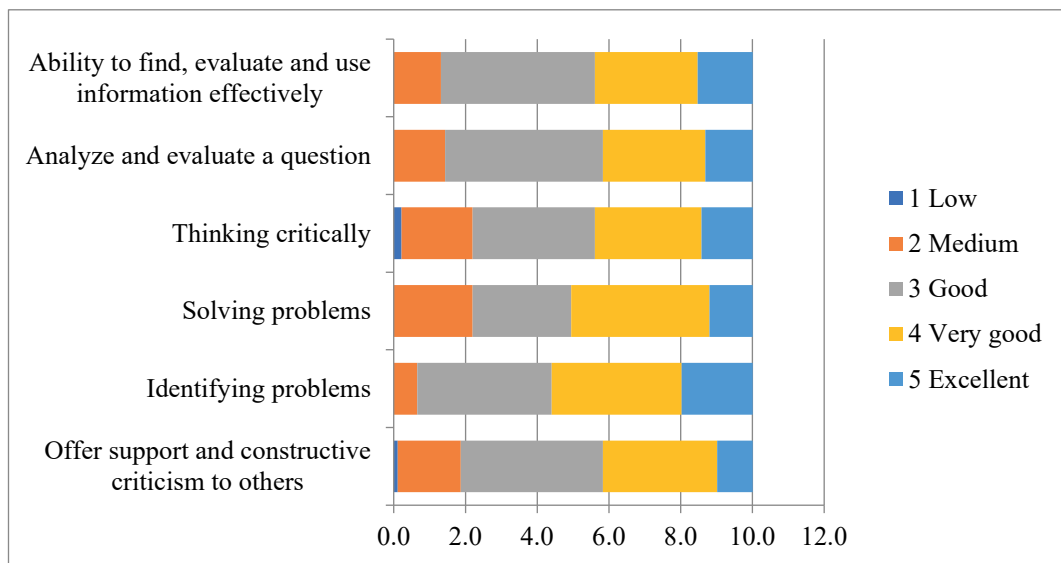
**Fig. 1.** Leadership skills, (own research).

In Fig. 1, we observe that the abilities to motivate and persuade others are rated as good to very good by our respondents. As for leading others and establishing and maintaining a trustful relationship with others, these vary from moderate to good. This indicates the presence of leadership competencies among our students.

Figure 2 shows that the Master students' abilities in managing the communication cycle, effectively communicating with others in various contexts, clearly expressing and receiving ideas, and working with others while listening to their opinions are rated as good to very good. This indicates that they possess competent communication skills.



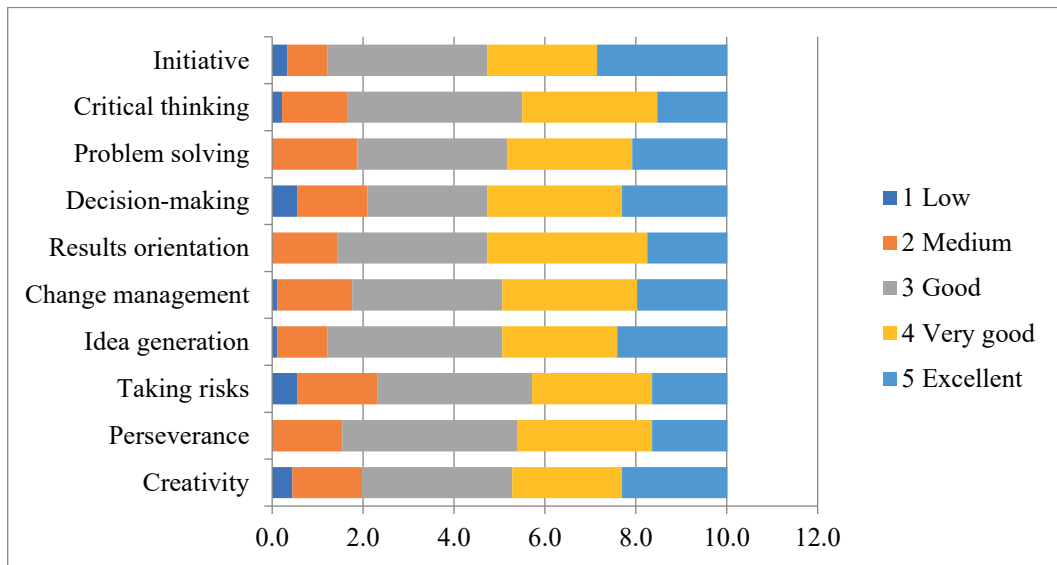
**Fig. 2.** Communication skills (own research).



**Fig. 3.** Problem-solving skills and critical thinking (own research).

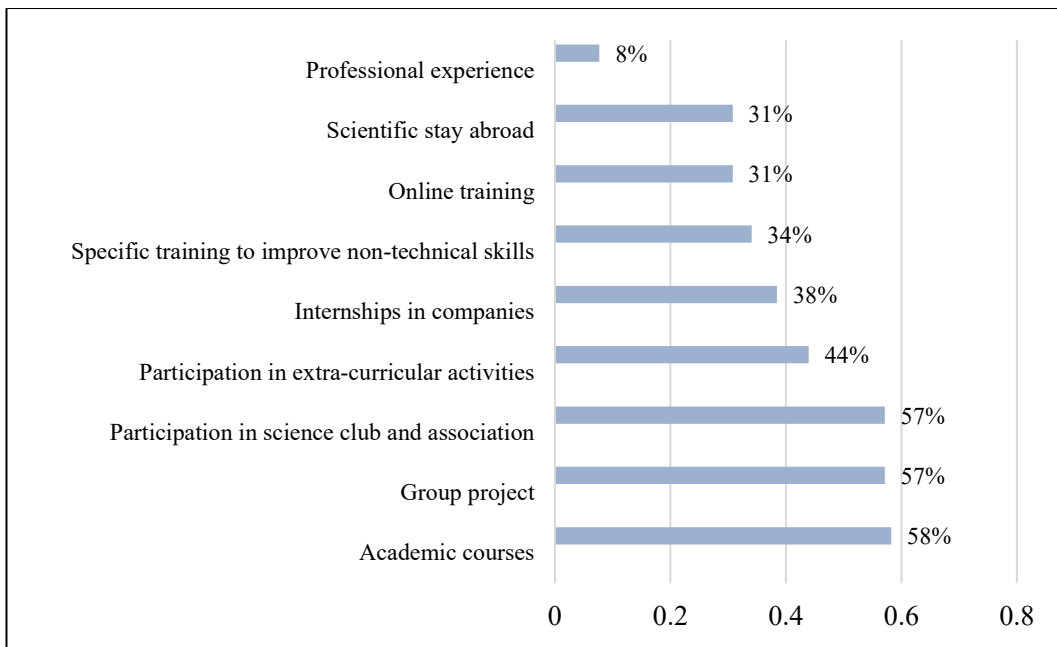
According to Fig. 3, the ability to find, evaluate, and effectively utilize information, as well as the capacity to analyse and evaluate an issue and identify problems are rated from good to very good. Regarding critical thinking, problem-solving, and providing supportive and constructive criticism to others, these skills are rated as moderate to good. This result demonstrates that the respondents possess competences in problem-solving and critical thinking.





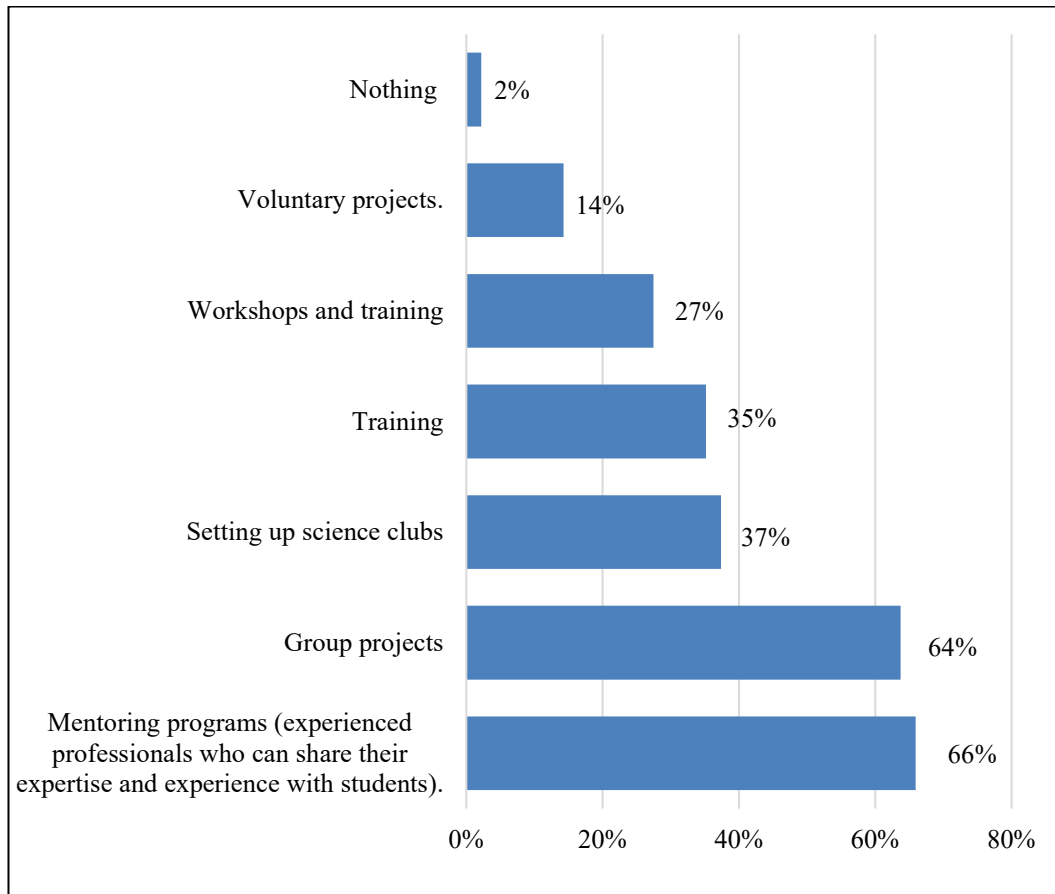
**Fig. 4.** Innovation skills (own research).

According to Fig. 4, critical reflection, decision-making, and risk-taking are rated from good to very good, up to excellent. Also, change management and creativity range from moderate to good, which suggests that innovation competences are present.



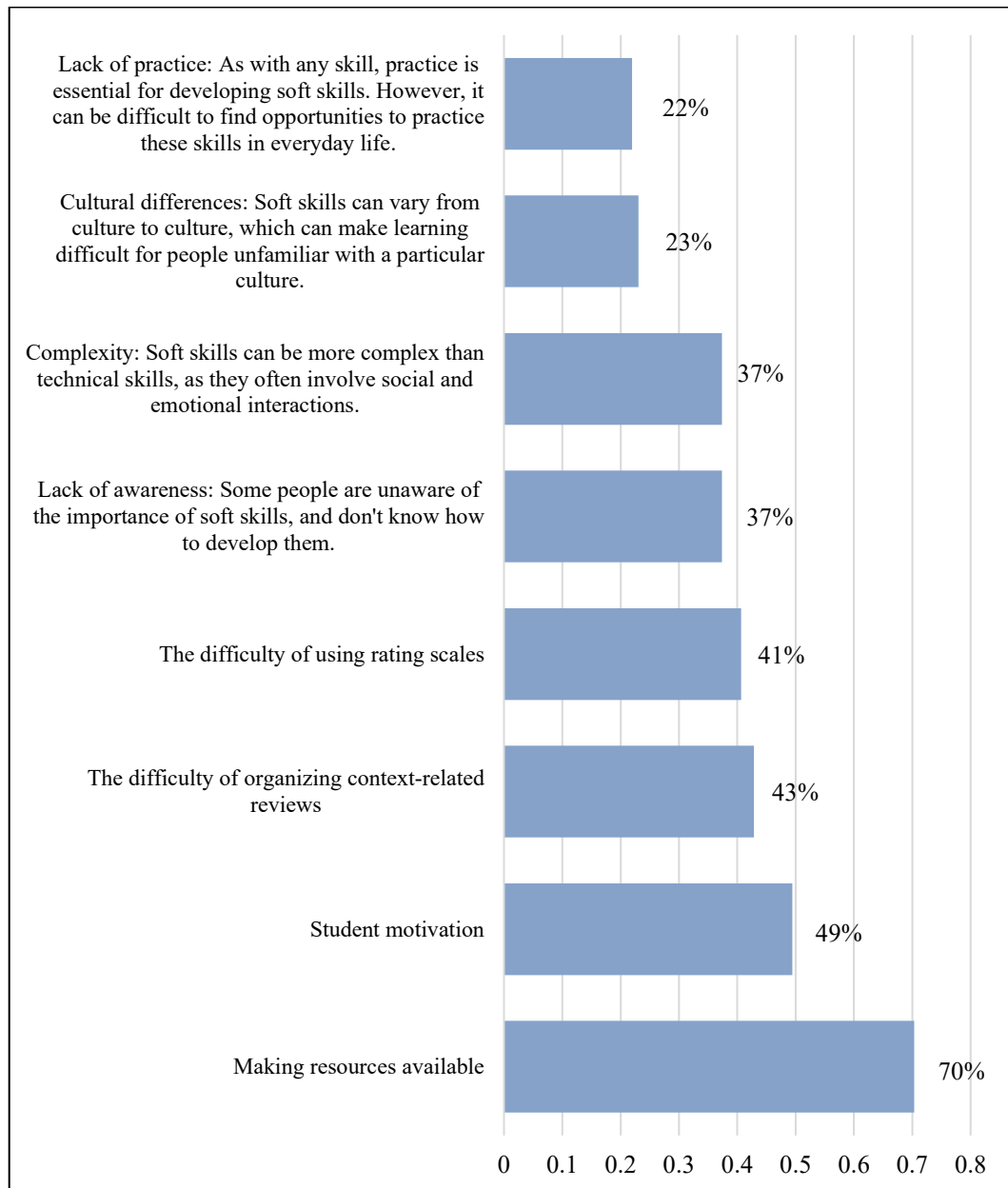
**Fig. 5.** The methods of acquiring non-technical skills (own research).

The acquisition of transversal competences by the students is largely attributed to teamwork, participation in scientific clubs and associations, as well as practical internships within companies. Professional experience also plays a role in acquiring soft skills, as evidenced by the fact that 40 students have declared this in Fig. 5.



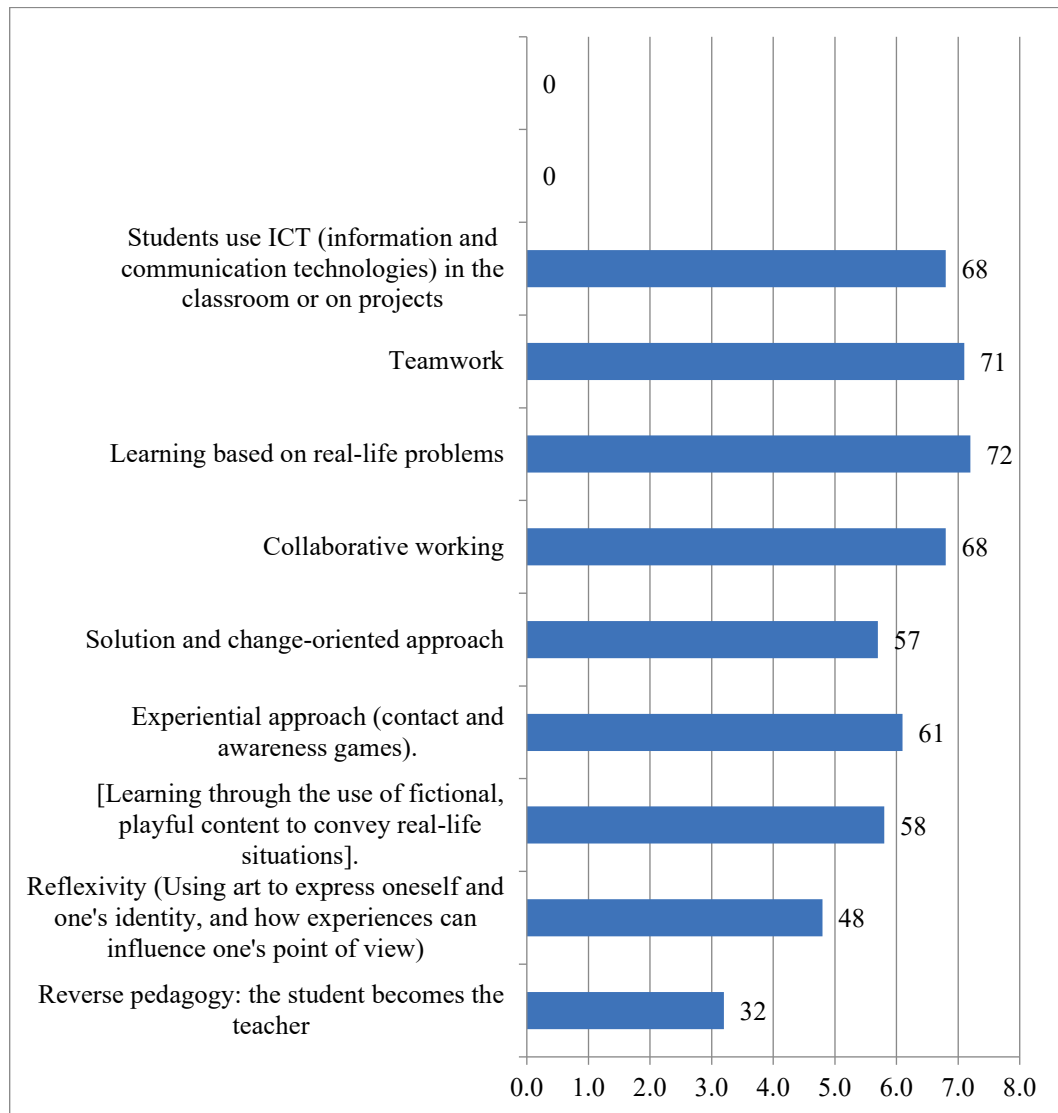
**Fig. 6.** The means implemented by the institution to acquire non-technical skills (own research).

Figure 6 demonstrates that more than 64 % of respondents have declared that the institution has implemented measures to improve the learning of soft skills, compared to 35.6 % who answered no. Among these measures, group projects and the establishment of scientific clubs have been noted.



**Fig. 7.** The obstacles encountered in learning these skills (Own research).

Students face certain obstacles in learning soft skills. A significant portion of responses (Fig. 7) indicate a lack of practice and difficulty to find opportunities to practice these skills in daily life. There is also unawareness, as some students are not conscious of the importance of soft skills and do not know how to develop them. Additionally, complexity is cited: soft skills can be more complex than technical skills because they often involve social and emotional interactions. Cultural differences are also mentioned: soft skills may vary across cultures, which can make learning challenging for students who are not familiar with a particular culture.



**Fig. 8.** The methods to be integrated into academic courses, (own research).

The preferred methods to be integrated into academic courses for the learning of non-technical skills are problem-based learning and teamwork. These are followed by collaborative work and the use of ICT (Information and Communication Technologies). This suggests recognition of the importance of practical, real-world problem-solving and collaboration in developing soft skills in an academic setting.

#### 4. ANALYSIS AND DISCUSSION OF THE RESULTS

The results of our study revealed that non-technical skills among students varied from average to very good. Through self-assessment, we were able to identify the non-technical skills that students acquired and developed in their academic journey. Specifically, we found that in terms of communication, students

performed well, while results for problem-solving and critical thinking varied from average to good. Regarding creativity and innovation, the responses ranged from good to very good (Asefer & Abidin, 2021; Kivunja, 2014; Succi & Wieandt, 2019). From these results, we can infer that students possess an analytical and collaborative style (Escolà-Gascón & Gallifa, 2022; Sá & Serpa, 2018). Additionally, this confirms that students are prepared for professional life (Chan & Luk, 2021; Escolà-Gascón & Gallifa, 2022; Kivunja, 2014; Tang, 2018b) and have adapted to the socio-economic environment's needs in terms of non-technical skills (Mwita et al., 2023).

Moreover, this self-assessment enabled us to identify certain cross-cutting skills that could be improved or developed later in the study programme. Indeed, the definition, evaluation, and appreciation of non-technical skills are often considered as knowledge close to personal, innate, and cultural abilities that can influence the design of a study programme (Keinänen et al., 2018). Also, the level of appreciation of skills varies from one student to another due to individual motivations, learning objectives regarding non-technical skills, and each person's cognitive capacity (Escolà-Gascón & Gallifa, 2022; Mwita et al., 2023).

Furthermore, the acquisition and development of non-technical skills are attributed to teamwork, involvement in scientific clubs and associations, as well as internships. Student participation in various activities of diverse nature – scientific, cultural, creative – enhances solidarity and group spirit. Additionally, internships allow students to confront the job market, apply their knowledge practically, and showcase their professional achievements. Notably, one of the main characteristics of non-technical skills is that they are not directly linked to a specific profession or activity, since these skills are continually adopted and promoted through their practical use in daily life and the workplace (Panadero & Alonso-Tapia, 2014).

However, analysing the encountered obstacles, we find issues such as the lack of practice and opportunity to implement these skills. Ignorance: some students are unaware of how to develop non-technical skills and their importance. Complexity: non-technical skills can be more intricate than technical skills, often involving social and emotional interactions. Cultural differences can also pose challenges, varying across cultures and making learning difficult. Moreover, academic courses represent only part of learning these skills, indicating a traditional academic culture (Sá & Serpa, 2018).

Higher education institutions play in developing students' non-technical skills, emphasising the need for an appropriate learning environment that includes scientific clubs and internships. The literature suggests a shift towards more integrated and experiential learning methods within academic curricula, such as collaborative work, problem-based learning, and the use of ICTs, which can promote student autonomy and self-assessment. Universities, as education providers and managers of training, hold an indispensable role in preparing graduates for a dynamic and ever-changing society. The traditional learning paradigm should be merged with modern teaching methods, assessment practices, and digital technology tools. Education systems should continue to focus on fostering creativity and innovation, as well as developing both tangible and

intangible skills that contribute to personal development and global workforce integration.

Successful implementation of cross-curricular skills learning requires deep reflection on what skills should be developed, how, and in which contexts to enhance their effectiveness. It involves the engagement of all stakeholders, especially students and educators, in a comprehensive process that includes both formal and informal learning, in a holistic approach to skill development.

Moreover, students recognise the significance of non-technical skills in the workplace and understand that their willingness, motivation, and effort are crucial in acquiring these skills. The student should increasingly take responsibility for their learning processes, directing their own educational journey, which enables them to reliably perceive their capabilities, particularly when evaluations are connected to personally engaging activities. This promotes the ability to self-assess and adapt to the evolving demands of the professional world.

## CONCLUSION

Our findings highlighted the diversity of skills possessed by students in terms of communication, leadership, problem-solving, critical thinking, and innovation, each at varying levels. Additionally, we explored the methods and resources students utilise to cultivate these skills, examining the role of both the higher education institution and the students themselves in this acquisition. We also identified certain obstacles students face in their learning journey.

Part of the research work focused on self-assessment as a tool for measuring non-technical skills, acknowledging both its advantages and limitations. This enabled us to determine the skills acquired by each Master student and their individual positioning regarding their competency level. Similarly, our study revealed that students played an active role in their own skill development, with many skills being acquired through participation in scientific clubs, associations, and teamwork. However, this alone might not be adequate to ensure optimal learning of cross-cutting skills. This is because such an effort relies on the culture and awareness of the importance of non-technical skills in the workplace, as well as the willingness, motivation, and effort exerted by the students.

The study emphasised the need for higher education institutions to modernize their teaching methods by incorporating contemporary approaches that promote the development of these competencies. Active collaboration between teachers and students was highlighted as crucial for the successful integration of these skills.

In the future, our research will focus on a more in-depth analysis of the implications of the results and a more elaborate discussion of specific recommendations for higher education institutions. We also plan to expand our sample by including other universities across the country and incorporating teachers' perspectives on non-technical skills of their students. This approach will strengthen the robustness of our conclusions and contribute to a more holistic understanding of the subject.

## REFERENCES

- Asefer, A., & Abidin, Z. (2021). Soft skills and graduates 'employability in the 21st century from employers' perspectives: A review of literature. *International Journal of Infrastructure Research and Management*, 9(2), 44–59. [https://iukl.edu.my/rmc/wp-content/uploads/sites/4/2022/02/5.-Al-Asefer\\_compressed.pdf](https://iukl.edu.my/rmc/wp-content/uploads/sites/4/2022/02/5.-Al-Asefer_compressed.pdf)
- Caggiano, V., Schleutker, K., Petrone, L., & González-Bernal, J. (2020). Towards identifying the soft skills needed in curricula: Finnish and Italian students' self-evaluations indicate differences between groups. *Sustainability*, 12(10), Article 4031. <https://doi.org/10.3390/su12104031>
- Chan, C. K. Y., & Luk, L. Y. Y. (2021). Development and validation of an instrument measuring undergraduate students perceived holistic competencies. *Assessment & Evaluation in Higher Education*, 46(3), 467–482. <https://doi.org/10.1080/02602938.2020.1784392>
- Deep, S., Salleh, B. M., & Othman, H. (2019). Study on problem-based learning towards improving soft skills of students in effective communication class. *International Journal of Innovation and Learning*, 25(1). <https://doi.org/10.1504/IJIL.2019.096512>
- Devedzic, V., Tomic, B., Jovanovic, J., Kelly, M., Milikic, N., Dimitrijevic, S., Djuric, D., & Sevarac, Z. (2018). Metrics for students' soft skills. *Applied Measurement in Education*, 31(4), 283–296. <https://doi.org/10.1080/08957347.2018.1495212>
- Escolà-Gascón, Á., & Gallifa, J. (2022). How to measure soft skills in the educational context: Psychometric properties of the SKILLS-in-ONE questionnaire. *Studies in Educational Evaluation*, 74, Article 101155. <https://doi.org/10.1016/j.stueduc.2022.101155>
- European Commission. (2015). *The European higher education area in 2015: Bologna process implementation report*. Education, Audiovisual and Culture Executive Agency. [https://oead.at/fileadmin/Dokumente/oead.at/KIM/Projekte/Pro.Mo.Austria/Bologna\\_Impl\\_Rep\\_2015\\_125dpi\\_FINAL.pdf](https://oead.at/fileadmin/Dokumente/oead.at/KIM/Projekte/Pro.Mo.Austria/Bologna_Impl_Rep_2015_125dpi_FINAL.pdf)
- Ferreras-Garcia, R., Sales-Zaguirre, J., & Serradell-López, E. (2021). Sustainable innovation in higher education: The impact of gender on innovation competences. *Sustainability*, 13(9), Article 5004. <https://doi.org/10.3390/su13095004>
- Heckman, J. J., & Kautz, T. (2012). Hard evidence on soft skills. *Labour Economics*, 19(4), 451–464. <https://doi.org/10.1016/j.labeco.2012.05.014>
- Igwe, P. A., Lock, D., & Rugara, D. G. (2022). What factors determine the development of employability skills in Nigerian higher education? *Innovations in Education and Teaching International*, 59(3), 337–348. <https://doi.org/10.1080/14703297.2020.1850319>
- Keinänen, M., Ursin, J., & Nissinen, K. (2018). How to measure students' innovation competences in higher education: Evaluation of an assessment tool in authentic learning environments. *Studies in Educational Evaluation*, 58, 30–36. <https://doi.org/10.1016/j.stueduc.2018.05.007>
- Kivunja, C. (2014). Innovative pedagogies in higher education to become effective teachers of 21st century skills: Unpacking the learning and innovations skills domain of the new learning paradigm. *International Journal of Higher Education*, 3(4), Article p37. <https://doi.org/10.5430/ijhe.v3n4p37>
- Krstikj, A., Sosa Godina, J., García Bañuelos, L., González Peña, O. I., Quintero Milián, H. N., Urbina Coronado, P. D., & Vanoye García, A. Y. (2022). Analysis of competency assessment of educational innovation in upper secondary school and higher education: A mapping review. *Sustainability*, 14(13), Article 8089. <https://doi.org/10.3390/su14138089>
- Le Deist, F. D., & Winterton, J. (2005). What is competence? *Human Resource Development International*, 8(1), 27–46. <https://doi.org/10.1080/1367886042000338227>
- Moss, P., & Tilly, C. (1996). "Soft" skills and race: An investigation of black men's employment problems. *Work and Occupations*, 23(3), 252–276. <https://doi.org/10.1177/0730888496023003002>
- Mwita, K., Kinunda, S., Obwolo, S., & Mwilongo, N. (2023). Soft skills development in higher education institutions: Students' perceived role of universities and students' self-initiatives in bridging the soft skills gap. *International Journal of Research in Business and Social Science (2147-4478)*, 12(3), 505–513. <https://doi.org/10.20525/ijrbs.v12i3.2435>

- Panadero, E., & Alonso-Tapia, J. (2014). Teorías de autorregulación educativa: Una comparación y reflexión teórica. *Psicología Educativa*, 20(1), 11–22. <https://doi.org/10.1016/j.pse.2014.05.002>
- Sá, M., & Serpa, S. (2018). Transversal competences: Their importance and learning processes by higher education students. *Education Sciences*, 8(3), Article 126. <https://doi.org/10.3390/educsci8030126>
- Saad Fadhil, S., Ismail, R., & Alnoor, A. (2021). The influence of soft skills on employability: A case study on technology industry sector in Malaysia. *Interdisciplinary Journal of Information, Knowledge, and Management*, 16, 255–283. <https://doi.org/10.28945/4807>
- Sturing, L., Biemans, H. J. A., Mulder, M., & De Bruijn, E. (2011a). The nature of study programmes in vocational education: Evaluation of the model for comprehensive competence-based vocational education in the Netherlands. *Vocations and Learning*, 4(3), 191–210. <https://doi.org/10.1007/s12186-011-9059-4>
- Succi, C., & Canovi, M. (2020a). Soft skills to enhance graduate employability: Comparing students and employers' perceptions. *Studies in Higher Education*, 45(9), 1834–1847. <https://doi.org/10.1080/03075079.2019.1585420>
- Succi, C., & Wieandt, M. (2019). Walk the talk: Soft skills' assessment of graduates. *European Journal of Management and Business Economics*, 28(2), 114–125. <https://doi.org/10.1108/EJMBE-01-2019-0011>
- Tang, K. N. (2018a). The importance of soft skills acquisition by teachers in higher education institutions. *Kasetsart Journal of Social Sciences*, 41(1), 22–27. <https://doi.org/10.1016/j.kjss.2018.01.002>
- Tsankov, N. (2020). Development of transversal competences in school education (a didactic interpretation). *International Journal of Cognitive Research in Science, Engineering and Education (IJCRSEE)*, 5(2), 129–144. <https://doi.org/10.5937/IJCRSEE1702129T>
- Vogler, J. S., Thompson, P., Davis, D. W., Mayfield, B. E., Finley, P. M., & Yasseri, D. (2018). The hard work of soft skills: Augmenting the project-based learning experience with interdisciplinary teamwork. *Instructional Science*, 46(3), 457–488. <https://doi.org/10.1007/s11251-017-9438-9>
- Ward, M., Gruppen, L., & Regehr, G. (2002). Measuring self-assessment: Current state of the art. *Advances in Health Sciences Education*, 7, 63–80. <https://doi.org/10.1023/A:1014585522084>
- Yan, L., Yinghong, Y., Lui, S. M. (Carrie), Whiteside, M., & Tsey, K. (2019). Teaching “soft skills” to university students in China: The feasibility of an Australian approach. *Educational Studies*, 45(2), 242–258. <https://doi.org/10.1080/03055698.2018.1446328>

## AUTHORS' SHORT BIOGRAPHY



**Meryem AMGHAR**, PhD in Economics, specialising in Finance and Enterprise. She is a Senior Researcher at the Centre for Research in Applied Economics for Development, Algeria. She is a member of several national and international research projects, which focus on the professional follow-up of young graduates, employability and skills, innovation, strategic intelligence and entrepreneurship.

At the same time, Meryem Amghar teaches courses in project management and marketing at INSIM SUP, a private higher education establishment in Algiers. Meryem has published articles on these subjects.

E-mail: [meriemamghar06@gmail.com](mailto:meriemamghar06@gmail.com)

ORCID iD: <https://orcid.org/0009-0004-7376-6418>





**Nahla NAGA**, sociologist of organisations, senior researcher at the Centre for Research in Applied Economics for Development, Algeria. She is the Head of the research team “Higher Education, Industry and Territory”. She has conducted studies on the practices of human resources management, skills management, change management in organisations and the relationship between the university and the socio-economic world.

She has participated in several national and international projects that focus on the training of engineers, innovation in companies in the electronics industry sector in Algeria, innovation in the steel sector, and the university-business relationship. At the same time, she provides courses in organisational sociology, methodology and professional integration in

various institutes. She was involved in mentoring the students.

E-mail: [n.nahla@hotmail.fr](mailto:n.nahla@hotmail.fr)

ORCID iD: <https://orcid.org/0000-0001-7284-6871>



**Anaïs Radja ZOUAMBI** embarked on her educational journey at the Highest School of Management, where she laid the foundation for her academic and professional pursuits. In 2020, she reached a significant milestone by graduating with a Master degree in Entrepreneurship and Project Management. This accomplishment reflects her early dedication to the fields of business and management, setting the stage for her subsequent endeavours in the world of academia and research. Anaïs also had the privilege of being a valuable member of a team at the CREAD (Centre de Recherche en Économie Appliquée au Développement).

During her tenure, she actively contributed to a significant project known as the Ecocatalyste project. This project focused on highlighting the pivotal role

of the Career Development Centre in facilitating the integration of newly graduated university students into the competitive job market.

Anaïs is now a dedicated and accomplished PhD student specialising in the field of Strategic Management at the Highest School of Commerce.

E-mail: [anais.radja.zmb@gmail.com](mailto:anais.radja.zmb@gmail.com)

ORCID iD: <https://orcid.org/0000-0001-6059-1066>