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## Soft Skills at the Moroccan University Level: Case of the Faculty of Sciences Ben M'Sick and Faculty of Sciences Ain Chock of Casablanca

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**Abstract:** Throughout their education, young people can acquire various skills that they can use on the job market. This study aims to study the perceptions of students regarding the importance of soft skills. Many studies have recently focused on "soft skills" in the labor market, that is to say, non-cognitive skills, particularly in relation to life skills, knowing how to become and knowing how to have, which could influence the employability of future students seeking employment. From a study on a sample of 400 students enrolled in the third year of college in two faculties: the Faculty of Sciences Ben M'Sick (FSBM) of Casablanca, and the Faculty of Sciences Ain Chock (FSAC) of Casablanca, we built a general idea on the opinion of the students of science branches in the university concerning soft skills, we identified the most important soft skills according to their perspective, with various educational institutions' pedagogical methods; their relevance and impact in developing soft skills and their benefits to students, the implementation of soft skills in academic settings, and the measures that should be taken by universities to better enable the acquisition of soft skills.

**Keywords:** soft skills, faculty, science, employment, professions.

### 摩洛哥大學級別的軟技能：卡薩布蘭卡理學院本·麥克西克和安喬克理學院案例

**摘要：**在整個教育過程中，年輕人可以獲得各種可以在就業市場上使用的技能。本研究旨在研究學生對軟技能重要性的看法。最近許多研究都集中在勞動力市場的“軟技能”上，即非認知技能，特別是與生活技能相關的，知道如何成為和知道如何擁有，這可能會影響未來學生的就業能力求職。通過對400名在兩個學院就讀的大學三年級學生樣本的研究：卡薩布蘭卡的本·麥克西克理學院和卡薩布蘭卡的安喬克理學院，我們建立了一個關於大學理科學生對軟技能看法的總體思路，我們根據他們的觀點確定了最重要的軟技能，以及各種教育機構的教學方法；它們在發展軟技能及其對學生的好處方面的相關性和影響，軟技能在學術環境中的實施，以及大學應該採取哪些措施來更好地獲得軟技能。

**关键词：**軟技能、教師、科學、就業、專業。

## 1. Introduction

The world is changing and the needs of companies are changing too. In this logic, it is essential to adapt and develop one's skills continuously.

In the modern employment world, regarding talking about the skills sought by recruiters, there is a tendency to use the term "soft skills." For example: "Soft skills: Cultivate the superpowers within you!" considering that "soft skills are central to a company's ability to reinvent itself" or "Soft skills or transversal

competencies are a fashionable expression, now present in the educational universe, professional training and the world of work."

In his speech on August 20, 2018, His Majesty the King clearly called for the urgent implementation of measures that target a better match between training and employment as well as a reduction in unemployment.

According to the speech of His Majesty King Mohammed VI on August 20, 2018, the Ministry of

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Higher Education and Scientific Research has launched a national plan to accelerate the transformation of the ecosystem of higher education, scientific research and innovation.

Following a series of consultations with stakeholders, which he conducted in six regions, Abdellatif Miraoui, Minister of Higher Education, Research and Innovation, has unveiled the main lines that emerge for his reform of the sector on the educational component. An advisor to the Minister of Higher Education, Scientific Research and Innovation in Morocco, Abdellatif Miraoui, in *Le Matin*, November 21, 2022, has indicated that "soft skills facilitate the adaptation of students to the rapid evolution of professions." Among these main lines, we have "citizenship and soft skills," the Minister also stressed the importance of soft skills in the educational reform. For the student, it is a question of acquiring the social, professional and entrepreneurial skills that will facilitate his or her professional insertion later on.

As a result, there is now more pressure on academic institutions to improve the soft skills of their students. This study raises awareness of the importance of soft skills by examining the type of pedagogical modalities for implementing soft skills in Moroccan public scientific universities. This research will further examine the relevance, impact and benefits that soft skills can have on students and the teaching methods to enhance students' acquisition.

We are therefore interested in analyzing the development of soft skills within Moroccan higher education by answering the following questions:

- To what extent do the teaching methods implemented in Moroccan scientific universities allow the acquisition of soft skills?
- What are the most important soft skills for science students?
- What are the benefits of developing soft skills for science students?
- What is the most suitable environment for acquiring soft skills?
- Who is the most resourceful person to successfully implement soft skills in a higher education environment?
- What steps should the university take to enable the acquisition of soft skills?

This paper will address these issues through a methodological analysis that will lead us to address the following three parts in turn:

The first part will be a brief overview of the literature review of the definition of soft skills.

The second part will be devoted to the exposition of the methodology and the population interviewed for the field phase. Note that we opted for a qualitative approach to the research, notably by examining students' perceptions of the importance of soft skills and by analyzing the pedagogical practices adopted by Moroccan faculties through semi-directive interviews.

The third part will be devoted to the discussion of the results of the current study.

## 2. Soft Skills and Their Importance

### 2.1. Origins of the Term "Soft Skills"

The term soft skills appeared in the late 60's in the US Army. Literally, it is defined as soft skills. "It was taken up in the world of education, especially in the more global perspective of skills assessment." [1]

Then, in management, to describe the qualities and different dimensions of leadership, concerning the notion of transversal competences, it is mostly used as a translation. This notion appeared in French-speaking educational sciences in the mid-1990s, and semantically insists on functions and uses rather than on competence and on their common belonging to several competences.

### 2.2. Definitions of the Term "Soft Skills"

"Soft skills are personal traits or qualities that each of us possesses. They make us who we are, generally encompassing our attitudes, habits and the way we interact with others. They refer to the abilities that make people better employees and open doors to many opportunities that are not directly related to the subject of their work. In other words, soft skills refer to a person's ability to relate to others, to organize with others, to communicate in writing, orally or in other forms." [2]

For Jérôme Hoarau, co-author of a book dedicated to soft skills, "soft skills are properly linked to people (all people can develop them), they are transversal (they can cover all disciplines) and non-technical (they are not based on technology, they are durable and do not become obsolete). For Amélie de Lacoste, VP of Human Resources at Danone, "soft skills are the art and manner: beyond the job, they influence the way of doing it, the way of operating in a company. They are multiple, and some are acquired more easily than others, depending on the personality and soil of each individual.

### 2.3. The Importance of Soft Skills for the Student Scientists

Scientists with advanced skills, very agile intellectually, often have difficulty interacting with their team members, their managers, or their peers. They are described as rather independent and unsociable. They are often unaware of the dynamics of their interactions with others and of the needs of those around them [3].

In their book on the managerial skills of researchers, Carl and Suzanne Cohen ask: Is it the scientific career that fosters "arrogant and antisocial behavior," or is it science that attracts those who already tend to exhibit these characteristics? Either way, they argue that scientists have good coping and learning skills and can

develop their "soft skills" [4].

The association of researchers who have benefited from the European Marie Curie program has carried out a survey that shows the importance of soft skills in facilitating the mobility and employability of researchers: "The soft skills needed to work in a team, to develop one's network and to communicate with actors from different sectors, are key to fostering the rapid adaptation of scientists in different working environments [5, 6].

The main actors of the pharmaceutical industry in Belgium, gathered during a round table in 2011 by Michael Page, describe an R&D sector in full revolution with the multiplication of public-private collaborations and the imperative need to open up to the outside world. To support this evolution, researchers' profiles must evolve. From Frédéric Nolf, HR manager at IBA: "Beyond their technical and scientific profile, researchers are becoming true project managers, interconnected, evolving in a globalized world. And for Anne De Backer, HR Manager at Pfizer's Brussels site: "We need profiles with both relational and technical or scientific skills."

### 3. Methodology

This article aims to study the perceptions of students regarding the importance of soft skills.

A questionnaire was used to collect data from 400 students enrolled in the third year of their bachelor's degrees in two scientific faculties: the Faculty of Sciences Ben M'Sick of Casablanca, and the Faculty of Sciences Ain Chok of Casablanca.

The students were invited to participate in our study through the lecturers and answered our questions in a direct way within their faculties.

As the academic training within the faculties was in French, we translated the questionnaire from French to English for the purposes of this study.

The questionnaire consisted of multiple-choice, multiple-response questions, and open-ended questions to solicit their opinions and responses, particularly about the courses, projects, and activities that helped them acquire soft skills. The empirical study presented in this article adopted the list of soft skills defined and broadly described by the European Project ModES [7] (see Table 1), and additional soft skills were added to our list from the Key Competency Benchmark, March 2017. Rather than using software-based methods, we chose to manually analyze the open-ended questions using inductive thematic analysis known as the classic tool for studying opinions and perceptions.

Table 1 A list of the 20 soft skills used in the study [7, 8]

Category	Competences
Personal	1. Commitment to work - committing to the organization and understanding its specific characteristics 2. Be professionally ethical - take action while keeping in mind the principles and ethics of the

	profession in daily activities 3. Be stress tolerant - demonstrate endurance in complicated or stressful situations 4. Creativity/Innovation skills - bring new ideas to develop improvements in the organization's products or services as well as in the activities performed in the job 5. Learning skills - provide a self-assessment of necessary knowledge (theoretical or practical) and take steps to acquire and apply that knowledge 6. Life Balance Skills - successfully managing frequent life/work conflicts 7. Self-Awareness Skills - understand our true weaknesses and strengths
Social	8. Communication Skills -transmitting ideas, information and opinions clearly and convincingly, both verbally and in writing, while listening 9. Conflict management and negotiation skills - reconciling different opinions to reach an opinions to agree that satisfies everyone 10. Networking skills - developing, maintaining and fostering contacts 11. Cultural Adaptation Skills - conducting management and entrepreneurial processes in multicultural environments 12. Leadership skills - motivate and guide others to contribute effectively 13. Teamwork skills - to build participatory and cooperative relationships with others 14. Adaptability to changing skills - redirecting the course of action to achieve goals in a new situation
Method	15. Analytical skills - to draw conclusions and predictions for the future by acquiring relevant information from different sources
Logic	16. Continuous Improvement Skills - performing work activities, tasks and responsibilities to a high standard and striving for excellence 17. Customer/user orientation skills - identifying, understanding and effectively meet customer needs 18. Decision-making skills - making decisions to achieve goals quickly and proactively 19. Management skills - setting goals and priorities by selecting and allocating tasks and resources 20. Results-oriented skills - make the most organizational efforts while keeping goals in mind

It serves to identify the themes and categories in a corpus and then analyze them. It is a subjective approach that aims at reformulating, interpreting and theorizing phenomena.

Thus, through a horizontal approach, we have identified recurrent themes and categories in the different interviews of the corpus and we have grouped them by relationships and typologies.

## 4. Results

### 4.1. Awareness of Soft Skills

We asked students what they thought were the most important soft skills for faculty students. Based on a literature review, a list of 20 skills was developed.

Ben M' Sick Faculty of Science: From the analysis, it was found that the most important soft skills for

students are teamwork, communication, time management, work ethics, self-confidence, collaboration, stress management (Table 2).

The soft skills least important to them are customer/user orientation skills, cultural adaptation skills, Social, Being committed to work, results orientation, analytical skills, learning skills.

Table 2 Most important soft skills for the students in the third year of FSBM (multiple answers)

Classification	Soft Skills	Frequency (n = 200)
1	Team spirit	200
2	Communication	198
3	Time management	196
4	Work ethic	190
5	Self-confidence	189
6	Collaboration	184
7	Stress management	178
8	Leadership	100
9	Conflict management and negotiation	70
10	Adaptability to change	66
11	Continuous improvement	54
12	Decision making	47
13	Creativity and innovation skills	40
14	Learning skills	35
15	Analytical skills	30
16	Results orientation	22
17	Being committed to work	16
18	Social	8
19	Cultural adaptation skills	4
20	Customer/user orientation skills	1

Faculty of Science, Ain Chok: According to the analysis, it was found that the most important soft skills for the students are communication, team spirit, self-confidence, time management, stress management, work ethics, and collaboration (Table 3).

The soft skills the least important to them are customer/user orientation skills, cultural adaptation skills, social, creativity and innovation skills, results orientation, analytical skills, and learning skills.

Table 3 Most important soft skills for the students in the third year of the FSAC (multiple answers)

Classification	Soft skills	Frequency (n = 200)
1	Communication	196
2	Team spirit	190
3	Self-confidence	188
4	Time management	178
5	Stress management	172
6	Work ethic	166
7	Collaboration	160
8	Conflict management and negotiation	145
9	Decision making	140
10	Being committed to work	136
11	Continuous improvement	120
12	Leadership	80
13	Adaptability to change	43
14	Learning skills	40
15	Analytical skills	30
16	Results orientation	19
17	Creativity and innovation skills	12

Continuation of Table 3

18	Social	10
19	Cultural adaptation skills	0
20	Client/user orientation skills	0

#### 4.2. The Benefits of Developing Soft Skills

According to one student's response, "The benefits of skill development are many, including self-esteem due to skill development will increase our self-confidence, find work, or at least an internship at a company level" (student's response), "For me, the benefits are my integration with people, finding a job" (Student's response).

According to the student's response, "Developing my soft skills, I can influence people, speak in public without fear, organize my time, organize my thoughts and monitor my feelings" (student's response).

According to another student, "Developing the soft skill leads to goal setting and achievement in addition to adapting to problems" (student's response).

Table 4 The benefits of soft skills development among students

Benefits	Frequency (n = 400)
Increase self-esteem	390
Increase compatibility with people	387
Strengthen your employability	260
Time and stress management	200
Speaking skills	156
Conflict management	150
Increase your ability to influence others	80

#### 4.3. The Right Environment to Acquire Soft Skills

According to Ben M'sick Faculty of Science: Students' answers to the question: what is the right environment and the right person who can help students develop soft skills as follows: In the first place we have personal development coach and in the latter place, we have experts and experienced engineers (Table 5).

Table 5 The person most resourceful in successful implementing soft skills in a higher education environment (multiple responses)

Classification	Person	Frequency
1	Personal Development Coach	186
2	Professors/Lecturers	184
3	Internship tutor/mentor	150
4	We ourselves	123
5	Parents and family	100
6	Experienced experts and engineers	60

According to the Faculty of Science Ain Chok: Students' answers to the question: what are the appropriate environment and the right person who can help students develop soft skills as follows: In the first place we have teachers/lecturers and in the last place we have parents and family (Table 6).

Table 6 The person most resourceful in successful implementing soft skills in a higher education environment (multiple responses)

Classification	Person	Frequency
1	Professeurs/Conférenciers	196

Continuation of Table 6		
2	Coach en développement personnel	186
3	Tuteur/mentor de stage	162
4	Nous-mêmes	140
5	Des experts et des ingénieurs expérimentés	80
6	Parents et famille	65

#### 4.4. The Most Effective Teaching Methods for Developing Soft Skills

Ben M'sick Faculty of Science: In the opinion of the students, training, teamwork and problem solving are the most appropriate teaching methods to acquire soft skills (Table 7).

Table 7 Most effective teaching methods for developing soft skills (multiple responses)

Classification	Method	Frequency
1	Internship	200
2	Group work	198
3	Problem solving method	165
4	Role playing	158
5	Case study	100
6	Flipped classroom	80
7	Project-based learning	75
8	Conferences	70

Faculty of Science, Ain Chok: In the opinion of the students, teamwork, training, and playing a role are the most appropriate teaching methods to acquire soft skills (Table 8).

Table 8 Most effective teaching methods for developing soft skills (multiple responses)

Classification	Method	Frequency (n = 200)
1	Group work	196
2	Internship	190
3	Playing a role	185
4	Problem solving method	182
5	Case Studies	80
6	Flipped classroom	76
7	Project-based learning	45
8	Conferences	40

#### 4.5. Effectiveness of Teaching Methods Used in Moroccan Scientific Faculties

To determine what they think of the teaching methods adopted in their faculty career and to learn more about these interactive and effective teaching methods, we asked them the following question: "Do you think that your training promotes the acquisition of soft skills? List examples of activities that helped you develop one or more of the soft skills mentioned in the first question."

In the opinion of most students, the teaching methods in science faculties do not strengthen the personal aspects of the science student. According to a student, "the teaching methods do not have work on the development of soft skills.

Because of the emphasis on the academic aspect rather than the personal aspect (subject of study)

another student adds, "The teaching methods lack training that strengthens soft skills, and even if they are organized, they are not organized on an ongoing basis and there is no follow-up" (student's topic). In the opinion of another student, "The teaching methods of the faculty lack internships in the field we study, so university graduates have a more theoretical knowledge than applied knowledge." According to a student, "Our training unfortunately does not promote the acquisition of soft-skills since we focus only on lectures neglecting the importance of parallel activities" (Student's topic).

#### 4.6. Measures to Improve Soft Skills Development

Many students emphasized that the students should be required to take field training, and the university has helped students find internships with companies by partnering with companies. Some stressed the need to integrate soft skills education into the university curriculum.

Table 9 Methods to improve soft skills development

Method	Frequency (n = 400)
The integration and requirement of internships into the university curriculum	395
Integrating soft skills education into the university curriculum	382
Organizing more workshops	300
Organizing roundtables	120
Organize conferences	75

## 5. Conclusion

Our research aimed to examine the changing importance of soft skills in a competitive environment, as well as to investigate students' perceptions of the importance of acquiring soft skills. Specifically, this study focused on science students in Moroccan universities. In this survey, the objective was to assess the perspectives of student subjects on the importance of soft skills, the implementation of soft skills in academic settings, and the measures that should be taken by universities to better enable the acquisition of soft skills.

Through this research, we found that students in both faculties are aware of the importance of soft skills and consider them as complementary to their academic skills.

For the students of the Ben M'sick Faculty of Science, ranked self-esteem skills is the most important, than communication and time management, and cultural adaptation skills, and customer/user orientation skills in the last positions of this ranking. This ranking can be attributed to the fact that these two skills are unimportant to them from their perspective, as they see these skills as more applicable in a professional environment. However, the pressure that may be built up by future employers and the working conditions may prove that these skills are soft skills necessary for their personal and professional development. Overall, all soft skills should be

considered in a student's academic career, even for science-based professions (see Table 2). In a comparison of students of the Faculty of Science Ain Chok, ranked communication skills are the most important, than team spirit and self-esteem. And cultural adaptation skills and customer/user orientation skills are in the last positions of this ranking. This ranking can be attributed to the fact that these two skills are unimportant to them from their perspective, as they see these skills as more applicable in a professional environment. However, the pressure that may be built up by future employers and the working conditions may prove that these skills are soft skills necessary for their personal and professional development. Overall, all soft skills should be considered in a student's academic career, even for science-based professions (see Table 3).

The most frequent benefits of soft skills development at both faculties were increased self-esteem, enhanced employability, and increased compatibility with people.

One of the most important findings from this study is that, among the benefits of soft skills development, students listed personal benefits before professional benefits.

Specifically, in the results, students ranked an increase in compatibility with people and build self-esteem over improving employability (see Table 3). This suggests that students believe that getting along with others can increase their chances of getting a job. This may be related to previous results of the most important soft skills for science graduates (see Table 2) where students ranked teamwork and communication skills as the most important. In this increasingly global context, research has also shown that interactive teaching methods based on group work, internships, or problem-solving projects encourage students to play an active role in teaching by awakening their curiosity and creativity. These learning methods develop students' critical thinking, analytical skills, social intelligence, and communication skills, especially for scientists who must reinvent themselves to meet the challenges they face in the 21st century. So there are many important changes that need to be made by the two major players in student life, businesses and universities. These two entities must work together not only to raise awareness of the importance of soft skills, but also to guide students toward career success by offering them the opportunity to develop their essential skills to continuously adapt to the changing job market and improve their employability.

Our study showed that students do not have actual knowledge of soft skills more compatible with the labor market, due to several reasons. Among them: the lack of organization of training courses inside and outside colleges, the formation of students in the academic side rather than the personal, the lack of field training within companies, ignoring the importance of

parallel activities in building the student's personality, and the lack of teaching methods for all means that work on the formation of the personal side of the university student. Therefore, university graduates have a more theoretical knowledge than applied knowledge, and they are in dire need to work on and develop the latter.

Among the challenges we encountered in this study the following:

- The unwillingness of many students to answer the questionnaire is for the reason that the topic will not help them with anything.

- Some colleges did not allow us to distribute the questionnaire inside or next to the college.

From our perspective, we see that Moroccan colleges still must work with educational methods that develop both the academic and personal aspects as well, organizing training courses for developing soft skills. It is mandatory for students to do field training in parallel to their studies in college and working in companies and institutions to apply what they have learned in the college, whether in an academic or personal way.

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