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Work Performance Evaluation As A Motivational Approach For Early-Career Self-Management

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WORK PERFORMANCE EVALUATION AS A MOTIVATIONAL APPROACH FOR EARLY-CAREER SELF MANAGEMENT

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ABSTRACT

This article presents the main characteristics of an academic experience based on the concept of "work performance evaluation", whose objective is to facilitate a smooth transition to the technological labor market. Its aim is to motivate STEM graduates to

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acquire relevant early professional skills and a self-management attitude in their careers. The results of a satisfaction survey after a pilot course experience with 30 bachelor engineering students at UPC, within the framework of the Engine4STEMers project [Torres, 2022], are also presented. This experience starts with the concept of “direction of service” and the rapid change in attitude and work methodology that a STEM graduate must undertake to evolve from a user culture (student) to a service provider culture (employee or entrepreneur). Then, based on open class discussions and as an exercise in self-reflection and motivation, students develop a list of expected differences in “job performance evaluation” between academia and the job market. This help students visualize the need to readapt their work methodology and attitude when they enrol in their first jobs.

1 INTRODUCTION

1.1 Context and motivation

The current fast-changing and highly demanding tech labour market requires STEM graduates to undertake a rapid readaptation in attitude and work methodology to evolve from a user culture (student) to a service provider culture (employee or entrepreneur) [Torres, 1998][Torres, 2022]. In general, employers give increasing importance to the development of social, emotional and highly cognitive skills [Mckinsey, 2018][Gordon, 2019]. In this sense, it is of major importance to develop educational initiatives where last-year bachelor students can reflect on their current set of skills: first to improve their self-esteem, and later to find out what competences they need to develop or improve in their near professional future. However, to foster an effective change in the mindset of STEM students, it is even more important to motivate them to acquire such skills as they transition into the job market and to further develop them on a lifelong learning basis [CEU, 2018].

The teaching and learning motivational experience presented in this paper has been undertaken within a 3 ECTS pilot course at UPC titled “*Leadership and Professional Development in Engineering*”. The content of this elective course is listed in Table I. This elective subject begins by presenting the concepts of planning and career development in the field of engineering. A special emphasis is dedicated to the transition stage between academic and professional activity, focusing on the essential aspects, both for a correct entry into the world of work [Torres, 2022], and for the subsequent evolution of the professional career in engineering [Torres, 1998]. Focusing on junior engineer needs, the main personal and professional development techniques (PPDT) are presented. Basically, they start with the junior engineer as executors of tasks, to continue with a larger focus on management and leadership functions as the young graduate evolves to the role of an expert senior engineer [Mckinsey, 2018][Gordon, 2019]. Finally, the main entry-level techniques and skills required for successful career development in engineering are discussed.

Table 1 Leadership and Professional Development in Engineering

<p>1. The concept of a professional career in engineering</p> <ul style="list-style-type: none"> a. Skills developed in the academic stage b. The transition from the academic stage to the professional stage c. Evolution of the engineer: from executor to manager and leader
<p>2. The junior engineer: the first jobs</p> <ul style="list-style-type: none"> a. Initiative and leadership in the early stages b. Evaluation of professional performance in engineering c. Main considerations and mistakes to avoid a. d. Transversal competencies: action oriented to results
<p>3. Professional career development techniques</p> <ul style="list-style-type: none"> a. The management of self: self-knowledge, self-esteem and self-management b. Personal qualities: values, responsibility and character c. Communication, perception and deception d. Interpersonal relationships: from me to us e. Proactivity, criteria and maturity (common sense) f. Decision making in a VUCA environment g. Creation and exploitation of opportunities h. Personal growth: 10 fundamental characteristics

2 METHODOLOGY AND TOPICS FOR CLASSROOM DISCUSSION

2.1 Pilot course methodology

Figure 1 shows a taxonomy of the main concepts addressed by the pilot course and how they are related. Self-awareness is the core skill that enables professional career self-management. It starts with a discussion in class on what are the general transversal skills that students have developed within the academy (Fig. 2). This awareness to improve students' self-esteem and makes them more receptive to address what are the competences that require further development for a successful job market entry. Here, students are told that these general competencies provided by the STEM degrees, along with the general and specialized knowledge already acquired, are highly valued by employers in the technology job market. Improving self-esteem, as done in this first part, is important to avoid a defensive or reactive behaviour by the students later on when their weakness are exposed. This makes them to better accept the need for change when they are told to start the path of personal and professional improvement.

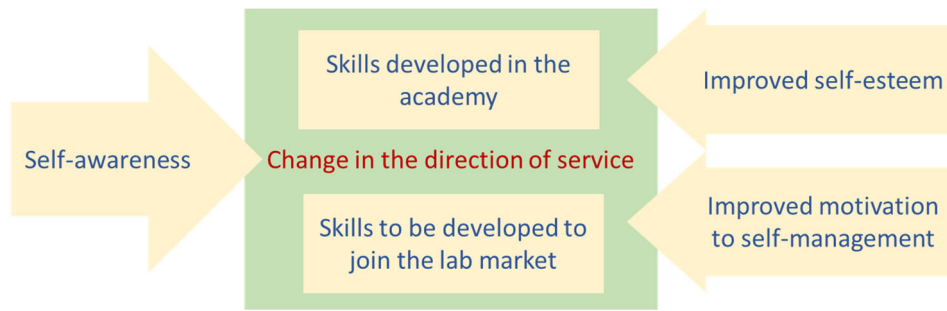


Fig. 1. Flowchart showing the relationship between the main concepts of the pilot course

After this introductory part, the course follows with the concept of “**change in the direction of service**” (from user to service provider) that is used for group discussion to help students visualize the need to undertake a change in the work methodology and attitude in their first jobs (Fig.3) [Torres, 1998][Torres, 2022]. This is in line with how is leadership evolving today to the concept of "servant leadership" where instead of being a manager directing and controlling people, leadership is increasingly understood to be in the service of those they lead [McKinsey, 2022]. These discussions are carried out through various case studies and key questions intended for students to identify the main conceptual differences between tasks performed in academia (as students) and work in the labor market (as professionals). As common sense conclusions, most of the major soft skills concepts emerge spontaneously from these discussions, allowing for a more systematic approach later. The example presented in this paper, is one of the main exercises that have been carried out in the pilot course to illustrate the underlying learning concept derived from the concept of service described in Figure 3.

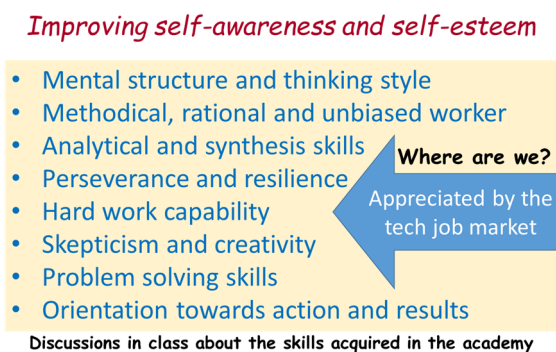


Fig. 2. Competences acquired at the university

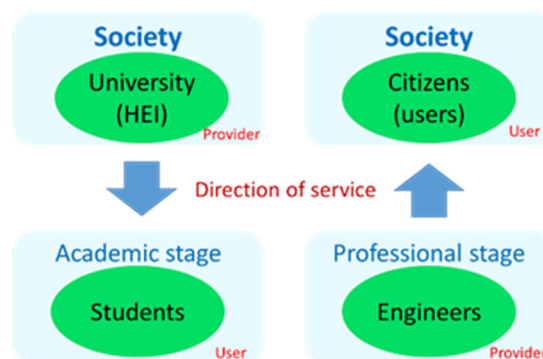


Fig. 3. From user to service provider

2.2 The concept of work performance assessment

The educational experience presented in this paper is based on the statement that students are very familiar with work performance evaluation in the academic environment. In order to foster discussion and contrary to what sometimes they may perceive, students are told that academic evaluation is a very systematic, predictable and fair process. Based on this statement, they are first asked to list and discuss the main features of academic evaluation (Fig. 4). Students are challenged afterward to

imagine and discuss what they think the main differences will be when they sign up for their first job. That is, **how is job performance going to be evaluated in the workplace?** It must be pointed out that this approach is not related to formal job performance assessment tools. Instead, the concept of professional reputation, which is prone to different types of biases, is presented as an informal assessment of job performance that has a major impact on career progression. The key importance of this public perception of job performance in career advancement is discussed and emphasized to make students aware of the need to cultivate specific transversal skills. These are presented as personal and professional development tools (PPDT) that act as experience accelerators. The impact of instrumental skills on short-term progress compared to long-term personal and professional growth based on values and principles is discussed as an important conclusion of this exercise.

2.3 Description of the experience: “work performance assessment”

In order to engage students in the topic of interest for discussion, the following statement is formulated: “*Evaluation procedures in the academy are very favorable for the subject under assessment (students)*”. Of course, students are well aware of assessment procedures and their impact on their academic progress. It is clear to them that academic evaluation is quite discrete through exams, subjects, semesters and so on (Fig 5). However, it turns out that, in general, they have paid to them very little attention from a more comprehensive perspective. As a classroom exercise, this counter-intuitive (for them) statement gives an opportunity to list and discuss the main features of formal academic assessment.

- Discreet and objective evaluation (exams, grades)
- Thematic and bounded evaluation
- Known instant and evaluation method
- Possibility of revision, several opportunities
- Method with little inertia, no history (last result)

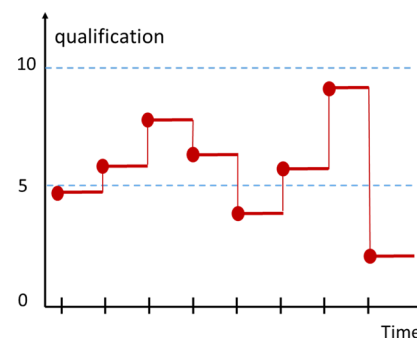


Fig. 4. Some features of academic evaluation

Fig. 5. Academic evaluation is discrete

The initial phase of this exercise reveals a key finding: students possess a thorough understanding of the "rules of the game" and demonstrate a high level of adaptation to academic evaluation procedures, irrespective of their personal agreement or disagreement with the grades they are awarded. Now, the above discussion has led to the following question for when graduates enter the labor market: **What are the new rules of the game going to be? How will they be evaluated? What changes are necessary to adapt to the new environment?**

The answers discussed in the classroom regarding these questions will be addressed in the next section. However, at this point, it is worth making a clarification to the

reader: what has been discussed so far is a very "simplistic" model of evaluation in the academic field, just for the sake of class discussion and student self-reflection. Obviously, the purpose and methodology of academic assessment have a much broader scope when properly analyzed from a holistic perspective in the context of higher education.

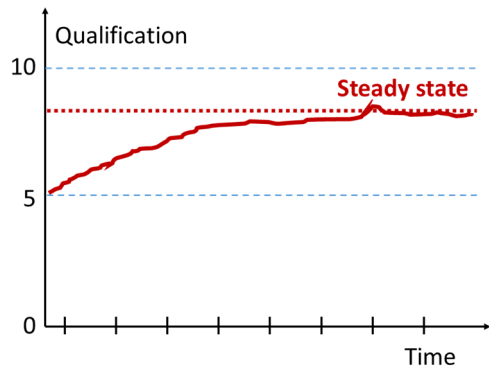


Fig. 6. Model for the "score" evolution at the workplace

- Unknown evaluator
- Unbounded theme content
- Indeterminate evaluation period
- Unknown evaluation method
- Limited revision possibility
- Limited possibility of rectification
- High inertia method

Fig. 7. Some expected features for job performance assessment

2.4 The concept of "job performance evaluation" as a motivational tool

Once the main features of academic assessment have been discussed, students are ready to repeat the exercise on job performance assessment in the workplace. Some ideas easily come out: exams and end-of-semester grades will no longer be issued. However, so far they have paid very little attention, if any, to the fact that there will be some kind of performance evaluation. They also generally haven't thought about what this assessment will look like or what implications it may have for their career progress. Now, the following general assumptions are agreed to focus discussions:

- Somehow, the "company" has a performance assessment ("score") of each employee.
- When hired, the default evaluation score is at least sufficient.
- This assessment evolves over time to a more or less stable state.
- Career progress highly depends on this score.

These simple assumptions are illustrated in the model given in Figure 6. This graphic helps students to figure out what might be the main features of their workplace assessment. To carry out this exercise, it was useful for students to contrast these features with the equivalent concepts discussed in the case of academic evaluation (Fig. 5). Some interesting characteristics of job performance evaluation, as a result of this exercise, are listed in Figure 7. As a result, students came to the conclusion that job performance assessment may be quite unfavorable for the subject under evaluation (the young graduate). Next, students are asked to guess what problems may skew the evaluator's judgment, in what we call "**the imperfect evaluator method**". Some of the issues that have emerged in class are the following:

- The evaluator may have a very sporadic dedication to the evaluation.
- The evaluator may give low priority/importance to evaluation issues.

- The evaluator may have limited knowledge of the employee.
- The evaluator may have limited knowledge of the activity or the topic.
- The evaluator may be influenced by “public opinion”.
- Primary importance may be given to results, regardless of their difficulty.

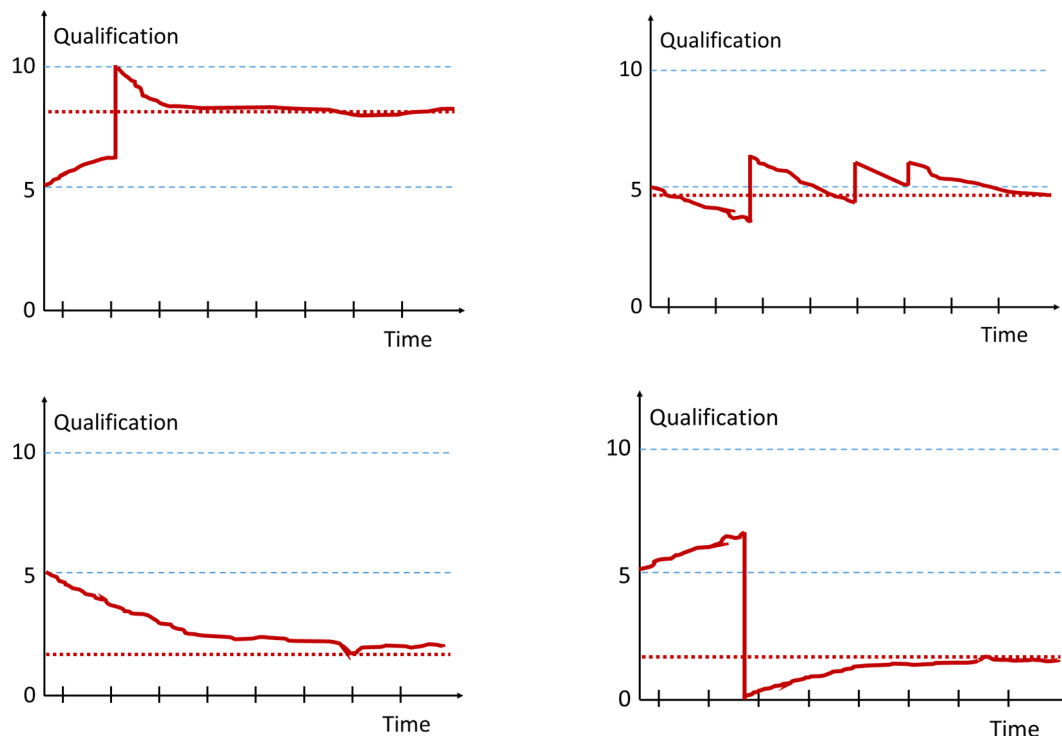


Fig. 8. Extreme career evolution types. From left to right, top-down: “Coca-cola” inventor; isolated lab-rat; lazy guy; crooked guy.

As an important outcome of this exercise, students came to the conclusion that job performance evaluation in the workplace can be quite subjective, biased, and unfair. In any case, they unanimously agree that, in many cases, these biases may be real and that they can greatly condition remuneration, promotion, task assignment, or contract renewal, among others. At this point, the professor clarifies that companies, in their own interest, try to establish systematic, fair, and transparent job performance evaluation procedures. However, they cannot prevent a certain degree of human bias from leaking into these procedures: those in charge rarely have the subject-specific knowledge, motivation, and time to “perfectly” assess the junior engineer’s job performance. Therefore, the character of the graduates and the specific results of their projects greatly influence the judgments of the evaluators.

Before moving on, it is also important to point out that the model in Figure 6 is quite simple. However, it allows the students to easily envisage what can be the main traits of career evolution. In this sense, Figure 8 provides some examples of plausible career evolution curves for some extreme behaviors that are discussed in the classroom.

3 PERSONAL AND PROFESSIONAL DEVELOPMENT TOOLS

In general terms, the students find the job environment described so far quite scary. This makes students quite discouraged by the idea that there doesn't seem to be much a young graduate can do to change the formal and informal job performance evaluation procedures they will have to face in the workplace. However, paradoxically to them, the tutor presents this "scary" environment in a very positive way: *"if opportunities for career progress were randomly distributed among the world population, as a kind of lottery, their chances for career progress would be very low"*. Fortunately, the "rules of the game" are fairly predictable and the same for everyone, making those who are better prepared (them!) much more likely to progress. In conclusion, Figure 9 is presented to show that, whereas the knowledge and skills acquired during the academic period open the door to the technology market, to develop a successful professional career, the young graduate must progressively acquire transversal, management and leadership skills. These are divided into two conceptually different groups:

- Instrumental competences. These, with a short-term perspective, are devoted to developing practical capabilities such as communication skills, time management, self-management, proactivity, interpersonal ability and so on.
- Competences based upon principles and values. These are devoted to developing personal growth and character, with a long-term perspective, including features such as identity, authenticity, autonomy, open-mindedness, concern for others, and so on.

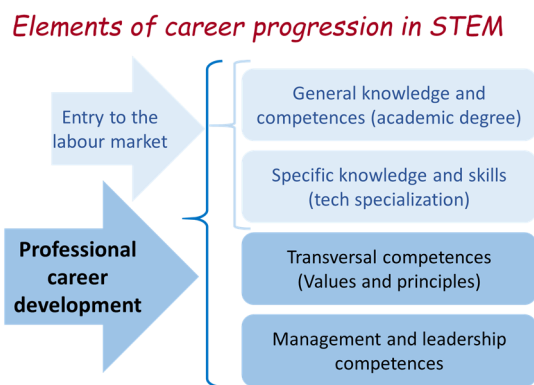


Fig. 9 Elements of career progression.

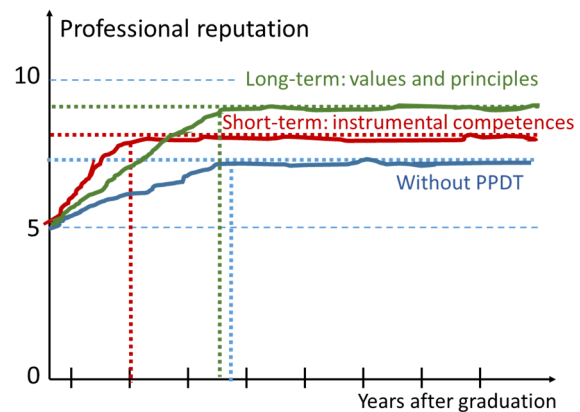


Fig 10. Career evolution models.

The model of work performance assessment discussed in the previous section helps the students to easily grasp the impact of transversal skills and competences on career progression. These PPDT are presented as "experience accelerators": the acquisition of transversal skills helps the young graduate to achieve a higher professional competence capacity in a shorter period of time (Fig. 10). This figure also shows how instrumental skills can have a fast impact on career progression, but with limited long-

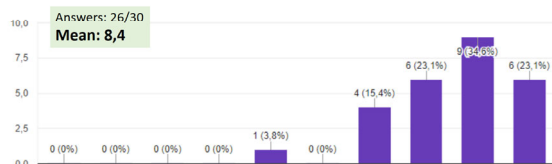
term impact. On the other hand, while the development of character traits based on principles and values requires a longer incubation and maturation time, they are expected to produce greater professional competence in the long term. It should be noted that the career evolution curves in Figure 10 simply represent a hypothetical model. Their purpose is to motivate students to seriously undertake career self-management and develop transversal skills. The extent to which students perceive the graphs in Figure 10 as a valuable tool for mapping their career progression determines its effectiveness in fulfilling its motivational objective.

The discussion in the previous section lets us introduce the concept of “**professional reputation**” as what underlies the informal qualification score in Figure 10. It can be defined as the opinion that people, in general, have about someone, or how much respect or admiration someone receives, based on past behaviour, comprising both, technical results and personal relations. STEM graduates, as service providers, sell their competence. They themselves are the product they are selling. This stresses the need to keep improving “the product” by taking good care of their professional reputation. This approach has also shown that makes students more receptive to accepting advice on early-career do's and don'ts [Walesh, 1995].

Student survey: useful tips and advice

I think that LDPE has provided me with useful tips and advice to face my first years in the labour market:

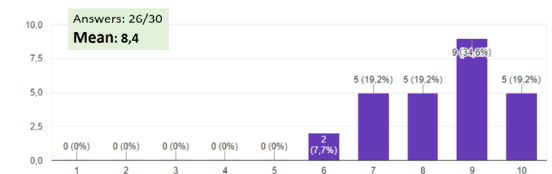
1 (Strongly disagree), 2.5 (Disagree), 5 (Neutral), 7.5 (Agree) and 10 (Strongly agree)



Student survey: motivation to self-management

I think that LDPE has increased my motivation to plan my professional career and continue improving my personal skills (soft skills)

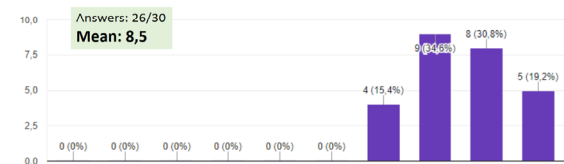
1 (Strongly disagree), 2.5 (Disagree), 5 (Neutral), 7.5 (Agree) and 10 (Strongly agree)



Student survey: self-awareness and self-esteem

I think that LDPE has helped me to progress in my self-awareness, self-perception and personal and professional self-esteem.

1 (Strongly disagree), 2.5 (Disagree), 5 (Neutral), 7.5 (Agree) and 10 (Strongly agree)



Student survey: satisfaction with course activities

Examples to illustrate theory: principles, values and transversal skills

1 (Very unsatisfied), 2.5 (Unsatisfied), 5 (Neutral), 7.5 (Satisfied) and 10 (Very satisfied)

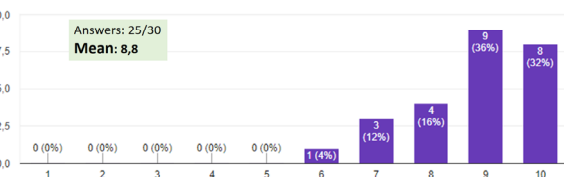


Fig. 11. Some outcomes of a student survey related to the pilot course “**Leadership and Development of Professional competences in Engineering (LDPE)**”

4 SATISFACTION SURVEY

The result of a satisfaction survey, answered at the end of the pilot course by 26 STEM bachelor students out of a class of 30, is quite encouraging (Fig. 11). Specifically, its three main objectives can be considered fulfilled, as summarized in Table 2.

Table 2 Survey on pilot course objectives

Objective	Mean (over 10)
Provide useful advice for the transition to the labor market	8.4
Increase the motivation of students to plan their professional careers and encourage them to deepen the acquisition of principles, values and transversal competences	8.4
Improve students' self-knowledge and self-esteem	8.5

Table 3 shows student perception regarding the syllabus and the different activities organized within the pilot course. Again 26 students out of a class of 30 have answered the satisfaction survey. As in the previous case, the survey has been conducted by means of a Google form, with anonymous answers, restricted to the list of students in class. It is worth noting the good satisfaction results regarding the selected examples (and their associated class discussions) chosen to illustrate the theory, one of which is the exercise on “work performance evaluation” developed in this paper.

Table 3 Satisfaction survey on pilot course activities

List of topics assessed by the students	Mean (over 10)
Theory: principles, values and transversal competences	8.1
Examples to illustrate the theory	8.8
Debates on real cases (case studies)	8.7
Student presentations and discussions	8.4
Class discussions about specific concepts	8.6
Comments and debates on YouTube videos	8.4

5 SUMMARY AND RESULTS

Acquiring the necessary soft skills and competences to thrive in today's rapidly evolving technology job market often demands years of dedicated effort. Many of these skills can only be fully developed through hands-on experience, real-world projects, and facing practical situations. It is crucial for STEM academic programs to make students aware of this reality and inspire them to take charge of their professional journeys. The experience described in this paper introduces an innovative approach towards achieving this objective, based on the concept of “direction of service”. This has been revealed as an outstanding tool to encourage students' self-reflection and the need to self-manage their professional careers. In this context and to illustrate the underlying concepts, this paper has presented a learning and teaching experience held within a pilot elective subject at UPC: “the work performance assessment” as a motivational tool. It employs counterintuitive, paradoxical, or

controversial examples to engage students in class discussions This method effectively exposes and reinforces key concepts related to skills and competences essential for career growth, while avoiding preachy or didactic lectures that might elicit resistance from students.

The satisfaction survey performed after the last lecture has shown that students responded positively to this experience, particularly to the exercises (and ensuing debates) chosen to illustrate the theory. It should be noted that this survey also revealed that the three main objectives of this experience can be considered fulfilled: students feel that their self-knowledge, self-esteem and motivation for self-management have been positively reinforced

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