

Teacher-student interactions and the teaching role: socio-educational impacts of the European Higher Education Area on engineering education in Spain

Mariano Martín-Civantos

Universidad de Granada, Estado español.

<http://orcid.org/0000-0002-4656-7921>

mcivantos@correo.ugr.es

ABSTRACT

Training activities at university go beyond the mere transmission of disciplinary knowledge. In this sense, the interactions that take place in the university training space influence learning. These ways of relating to one another can influence the type of professional who graduates from the classroom. The European Higher Education Area defines how to be a teacher and manage the classroom, which affects engineering education. This research featured two phases: surveys of engineering students and in-depth interviews with engineering teachers. Specific elements of engineering education were explored to analyze the impact of the European Higher Education Area had on student–faculty interactions. Results show that students rated their emotional relationships and teachers’ methodological innovation and assessment as deficient. Individualism among peers, hierarchy, and lack of transparency in the teaching process harmed learning achievement. Participants said the teaching and management role of the teaching staff is undervalued, contrasting with the value given to research. Participants also noted the precariousness of access to a teaching career. Interactions are weak beyond teacher–student relations, with few peer-to-peer networks. They reported a low level of student leading role, promoted by the teaching staff.

Keywords: engineering education, higher education, student–teacher relationship, educational policy, teacher employment conditions.

Interacciones profesor-estudiante y rol docente: impactos socioeducativos del Espacio Europeo de Educación Superior en la formación de ingeniería en España

RESUMEN

Las actividades formativas en la universidad van más allá de la transmisión del mero conocimiento disciplinar. En ese sentido, las interacciones que se producen en el espacio de

formación universitaria influyen en el aprendizaje. Estas formas de relacionarse pueden influir en el tipo de profesional que egresa de las aulas. El EEES viene a definir una forma de ser docente y de gestionar el aula. Esto tiene un impacto en la formación de ingenieros. Esta investigación se lleva a cabo en dos fases, mediante encuestas a alumnado de Ingeniería y de entrevistas en profundidad a su profesorado. Se han explorado elementos específicos de la formación en Ingeniería que permiten analizar el impacto que el EEES ha tenido en las interacciones entre profesorado y alumnado. Es significativo que el alumnado valora como deficientes las relaciones afectivas entre estudiantes, la innovación metodológica del profesorado y la evaluación. El individualismo entre pares, la jerarquía y la falta de transparencia en el proceso de enseñanza producen una pérdida de aprovechamiento en el aprendizaje. El profesorado ve poco valorado su rol docente y de gestión, que contrasta con la valoración que recibe la investigación. Igualmente, se constata la precariedad en el acceso a la carrera docente. Se muestra que las interacciones se encuentran debilitadas más allá de las relaciones entre profesorado y alumnado, dando cuenta de redes escasas entre pares. Se aprecia un bajo protagonismo del estudiantado, promovido por su profesorado.

Palabras clave: Formación de ingenieros, Enseñanza superior, Relación profesor-alumno, Política educacional, condiciones de empleo del docente.

Interações professor-aluno e função docente: impactos socioeducativos do Espaço Europeu do Ensino Superior no ensino da engenharia em Espanha

RESUMO

As atividades de formação na universidade ultrapassam a mera transmissão de conhecimentos disciplinares. Neste sentido, as interações que têm lugar no espaço de formação universitária influenciam a aprendizagem. Estas formas de relacionamento podem influenciar o tipo de profissional que sai da sala de aula. O EEES define uma forma de ser professor e de gerir a sala de aula. Isto tem um impacto no ensino da engenharia. Esta investigação é realizada em duas fases, através de inquéritos a estudantes de engenharia e de entrevistas aprofundadas a professores de engenharia. Foram explorados elementos específicos do ensino da engenharia, a fim de analisar o impacto que o EEES teve nas interações entre estudantes e professores. É significativo que os estudantes classifiquem como deficientes as relações afetivas entre estudantes, a inovação metodológica do pessoal docente e a avaliação. O individualismo entre pares, a hierarquia e a falta de transparência no processo de ensino conduzem a uma perda de resultados de aprendizagem. O papel pedagógico e de gestão do pessoal docente é desvalorizado, o que contrasta com o valor atribuído à investigação. A precariedade do acesso à carreira docente é igualmente constatada. As interações estão enfraquecidas para além das

relações professor-aluno, com poucas redes entre pares. O nível de participação dos alunos é baixo, promovido pelo pessoal docente.

Palavras-chave: ensino de engenharia, ensino superior, rácio professor–aluno, política de educação, condições de emprego dos professores.

INTRODUCTION

The university is a social institution whose objective goes beyond the technical training of professionals to perform well in a specific labor system (Fernández et al., 2023). In their classrooms, social dynamics influence learning and positively or negatively affect the quality of life of those in attendance (Contesse et al., 2022; Veramendi et al., 2020). In this context, scholars have suggested that university teaching practice should be viewed from the perspective of constructive dialogue, which implies questioning the power relations that have often been installed in the vertical practices between teachers and students (Duque, 2018; Flores et al., 2022). In this sense, Gutiérrez and Vasco (2009) pointed out that university education is influenced both professional and disciplinary knowledge and the nature of the interaction. This can be synthesized in the dimensions of “know” and “know-how” and through categories of analysis: conceptions, intentions, and actions. In simple terms, to analyze the interactions of professors, teachers, and students at the university, it is necessary to investigate the conceptions, intentions, and actions regarding the being, knowing, and doing of the students and their teachers.

These ways of being, knowing, and doing are contextualized in larger sociopolitical scenarios. In the Spanish case, this is evidenced by the impact of the European Higher Education Area (EHEA), generating consequences such as a particular teaching role and specific interactions crossed by the commodification and neoliberalization of higher education. This article analyzes the impact of the EHEA on the interactions between engineering faculty members at a Spanish university and their students, based on the teaching role that this faculty has been building in this specific sociopolitical context.

Teacher–Student Interactions in Higher Education: Specific Findings in Engineering Education

Cruz and Ruiz (2021) studied the perception of university students in Mexico regarding interactions with their professors and gained access to the discourses and practices of these professors. The authors found that constant communication between the two parties helps inform a better perception of this interaction. The study concluded that it is necessary to investigate more deeply the trajectories and motivations of university professors to understand these interactions.

Similarly, González-Maura et al. (2019) conducted a study with engineering students and concluded that it is necessary to contrast the views of teachers and students and employ quantitative and qualitative techniques in future studies on this topic. Along the same lines, studies have highlighted some factors observed in the analysis of faculty–student interactions at the university level, such as reciprocity and the professional behavior of the teacher (Gil-Madrona et al., 2016; Pio et al., 2019).

In engineering careers, some studies have shown that faculty–student interactions can become especially critical and vertical, with emphasis on professional knowledge rather than classroom interactions. In many engineering careers, professors engage in impersonal treatment of their students, with a low willingness to teach and conditioned by gender and social class criteria, among other factors (Concha, 2009; Morales & Soriano, 2021). This occurs in addition to the high academic load and demand in this type of career, which often result in high levels of student dropout (Rodríguez et al., 2018). Some studies showed that training in science and engineering is usually far removed from the real problems of the social context, although these same studies showed that when university education is contextualized and social problems are incorporated into engineering education, it is highly valued by students and graduates. This is particularly true if the education focuses on social problems that affect the students, positively influencing their experiences (Torres et al., 2021; Villalobos-Abarca et al., 2018).

Along the same lines, studies have shown the need to incorporate a much more comprehensive approach to engineering education that includes relevant issues such as values and ethics (Cáceres et al., 2022; Marín-González et al., 2018; Torres et al., 2021; Torres & Padrón, 2014) and soft skills (Vidal et al., 2020), as well as a teaching attitude that values the learning process of engineers during their university education (Meléndez, 2007). Therefore, interactive pedagogical strategies that focus on student leading role and collaboration have been shown to be more effective in the training of engineers in different higher education scenarios (Cornide-Reyes & Villarroel, 2019; López et al., 2020; Martínez & Ríos, 2019; Reyes-Torres et al., 2019; Rojas et al., 2020).

All these antecedents seem to suggest that the interactions between professors and students in engineering education are an essential factor in teaching and learning processes, along with subjective experiences at the university. This could influence the type of professional who graduates from these programs, because the profession requires knowing about a specific knowledge, but also expects engineers to act and behave in a certain way, which seems to be learned from social interactions in the university rather than the academic content transmitted to students (Grande et al., 2024). In this sense, international studies have found positive aspects of

teacher-student interactions in engineering education, highlighting a key factor in the process: the willingness of teachers to address the problems and concerns of students (Hartikainen et al., 2022). “Which may favor the fulfillment of its tutorial function in the guidance and accompaniment of students in the development of the teaching-learning process”¹ (Gil-Madrona et al., 2016, p. 15).

The interactions between professors and students are strongly influenced by the teaching role and therefore, by the specific characteristics of the teaching work of those who train these future professionals at the university. Different studies noted the impact of the teaching role on general issues of educational quality and the need to have an impact on the social responsibility of higher education (Carvajal-Tapia & Carvajal-Rodríguez, 2019; Irrarazabal-Gavancho, 2022), highlighting the relevance of teaching methodologies in the development of critical thinking, particularly in the training of engineers in higher education (Cárdenas-Oliveros et al., 2022). Likewise, the university teaching role and the mental health of professors are determined by organizational aspects of the work environment and significantly affected by the organizational climate (Niebles-Nuñez et al., 2019; Yslado et al., 2021). These organizational environments, in turn, are framed by specific sociopolitical contexts and conditions that often determine the very essence of higher education.

EHEA: A Sociopolitical Market Context for the Development of the University Teaching Role

In Spain, this context and these conditions are determined by the policies promoted in the framework of the EHEA, traditionally known as the Bologna Plan (Aránguiz et al., 2021; Martín-Alonso & Pañagua, 2022). Pomares and Álvarez (2020) described it as a supranational initiative that -although also seeking to address issues such as the free mobility of students, the possibility of working in other European countries after completing a degree, and opening the knowledge society- always had much more complex covert objectives. These objectives include: (a) to increase competitiveness among public universities; (b) to increase competitiveness with respect to the private university when it came to offering degrees and their extension; and (c) to fight for credit quotas in the internal sphere of each faculty in the same university. These authors concluded that the competitive nature of a university open to the market emerged, generating the commercialization of scientific and academic production and multiple tensions around a new multifaceted profile of the university professor as teacher, researcher, manager, and bureaucrat. Thus, in the current context, marked by crisis and globalization, the Bologna Plan has shaped a

¹ Author's translation.

university paradigm that prioritizes, to a large extent, the preparation of university students for their insertion in the labor market, with the consequence that certain subjects have dominated the curricula. This has led to a great distance between academia and reality (Gutiérrez-Vázquez et al., 2023), affecting the interactions that take place in the university context.

For some authors such as Rivera (2022), the Bologna Plan has not generated the expected results, instead leading Spanish universities to high levels of weakness and fragility, little international mobility of students and teachers, high institutional endogamy, and excessive management tasks, among other negative consequences. Neoliberalism and globalization appear as the main culprits of the gradual and gradual loss of meaning in Spanish higher education training (Martín-Alonso & Pañagua, 2022). “The EHEA is not timeless. We find it in the context of neoliberalism, where competition and meritocracy are configured as constituent values of society”² (Martín-Alonso & Pañagua, 2022, p. 390).

In this regard, Menéndez Álvarez-Hevia and Reyes Hernández-Castilla (2021) pointed out that there has been “a strong influence of the Anglo-Saxon model in the transformative proposal of the European Higher Education Area, proposed in the Bologna Plan, with similarities in pedagogical approaches and practices, as well as in organizational and ideological characteristics”³ (p. 236). Therefore, they analyzed this model of university training and concluded that “the idea that the current conception of university can hardly be understood without being related to the neoliberal ideology that gives meaning to the policies of the globalized world”⁴ (p. 238). This is evidenced by three elements that explain the process of commercialization of higher education: the notion of consumption and market in relationships with students, excessive emphasis on employability, and increasingly intense competition to evaluate the academic work of professors.

In addition to these consequences, in the context of engineering degrees, the Bologna Plan or EHEA has had negative consequences linked to the teaching and research impact of university departments outside the academic and professional area of the discipline, along with a lack of updates to the curricula (Collado, 2022). Based on the conclusions of the Zerpa (2012) study, is it possible for engineering professors and students to reflect on their social responsibility in the framework of their profession and a context of high commercialization? The social responsibility of the university and engineering education is taught in the pedagogical interactions of the classroom and should influence:

² Author’s translation.

³ Author’s translation.

⁴ Author’s translation.

the training of professionals committed to visions of development that are not exclusively technical, but which also incorporate the aspect of human development within such a conception. Validly, this would imply considering the engineering profession as a discipline whose praxis is also oriented to favor human life.⁵ (Zerpa, 2012, p. 69).

Thus, this scenario and the proposal of a teaching profile for the future group of engineers in Spain has a profound impact on the interactions that take place in the classroom, and with it, the future of society. To deal with questions such as these is to deal with the socioeducational consequences of the social transformations brought about by policies such as the EHEA, which respond to neoliberalization processes. This is what Díez (2009) referred to when he warned about the direct consequences he anticipated more than 10 years ago regarding the academic capitalism, introduced with the Bologna Plan, and the gradual loss of profound meaning that higher education could experience.

Along the same lines, Casañola et al. (2021) designed and validated a questionnaire to study teaching roles in university organizations in the framework of the EHEA, concluding that some categories are particularly in need of investigation: comprehensive training, training in values, pedagogical innovation, and Information and communication technology (ICTs). The study concluded that the necessary involvement of university teachers in their work performance is essential and that “professional training spaces must be generated that allow for the technical-academic as well as personal and socioemotional development of teachers, something that has been discovered in our research and corroborated in other related inquiries”⁶ (p. 100).

METHODOLOGY

The design of this research developed through a single case study carried out sequentially from an ex post facto to an interpretative humanistic view. The first part was transversal, descriptive, and pre-experimental with a single group (without pretest) by means of surveys. The sampling occurred by cluster (course or educational level), focusing on the penultimate year a degree program in building engineering at a Spanish university. The second part developed from a humanistic–interpretative vision and hermeneutic phenomenology approach using in-depth interviews.

The instrument for the descriptive part has been validated for engineering education settings by

⁵ Author’s translation.

⁶ Author’s translation.

González-Maura et al. (2019). Its psychometric properties have been validated and published, with a Cronbach's reliability exceeding 90%. Because it was validated in a country other than Spain, two stages were carried out prior to its use in this country: instrument review and application. The review of the instrument required the determination of validation and reliability as quality criteria. The validation was carried out via a review of the instrument by expert judges, selected by means of theoretical and methodological criteria and including experts in teacher–student interactions and faculty members of the degree program in which the study was conducted. After this validation, which led to no substantial changes, the instrument was ready to be applied.

At the selected university, the degree program is called building engineering. To begin data collection, a convenience sampling search was initiated by contacting the school director. A project summary and cover letter were submitted for approval. Once approval was granted, a methodological procedure was carried out in two phases, due to the sequential nature of the study.

In Phase 1, an interview was conducted with the director of the School of Engineering to contextualize the history of the Building Engineering degree program and his own career as director. Then, the survey was submitted to all students in their penultimate year who attended classes on the day the survey occurred ($n = 34$). Data were analyzed using descriptive statistics, specifically, mean and standard deviation.

The instrument features a scale of 1 to 4 points, is called ECEFAE⁷ (González-Maura et al., 2019), and consists of 60 items grouped into 12 dimensions (see Table 2).

In Phase 2, the in-depth interview technique (Flick, 2007) was used through purposive sampling with five professors of the degree program, as shown in Table 1 (an interview with the head of the degree program is included). The sampling was intentional, involving the professors who at the time the survey occurred, were teaching students in the sampled cohort.

Table 1

Study participants

Interviewee	Sex	Approximate age	Years working at the university	Contract type
1	F	55	More than 20	Permanent
2	M	62	More than 10 and less than 20	Temporal

⁷ This is its Spanish acronym.

3	F	45	Less than 5	Temporal
4	M	55	More than 20	Permanent
5	F	55	More than 20	Permanent
6	F	55	More than 20	Permanent

As many interviews as necessary were conducted following the criterion of information saturation—that is, until no new information emerged. Content analysis was carried out on the interview data, resulting in the identification of major emerging categories.

At the end of the two phases of this study, results were obtained that facilitated the exploration of specific elements of training for engineering careers—in this case, building engineering—allowing us to advance our analysis of the impact of the EHEA on interactions between engineering professors and their students based on the teaching role that these professors have built in this specific sociopolitical context.

Informed consent forms were signed throughout the study and the confidentiality of the data was guaranteed. This study has been approved by the ethics committee of the university to which the author belongs.

RESULTS

Phase 1

First, the results of the survey application are presented in Table 2.

Table 2

Statistical results after applying the ECEFAE

Dimension	<i>M</i>	<i>SD</i>
1 Dialogic communication between teachers and students	3.36	0.84
2 Affective relationships between students	2.88	0.82
3 Accompaniment and guidance of the student in the learning process	3.32	0.80
4 Cooperative learning	3.39	0.72
5 Autonomous learning	3.55	0.55
6 Organization and discipline in the development of the teaching–learning process.	3.34	0.72
7 Environmental conditions	3.43	0.68

8	Methodological innovation	2.98	0.84
9	Theory–professional practice link	3.36	0.87
10	Values	3.31	0.76
11	Evaluation	2.66	0.67
12	Satisfaction in the teaching–learning process	3.34	0.74

The dimensions with the lowest means -that is, less than 3.00- were affective relationships among students, methodological innovation, and evaluation. The first of these dimensions is composed of the following items:

Students in my course know each other well; In my course, it is easy to bring students together to do teamwork; Students in my course have fun doing work projects together; It is easy to find support from classmates in my course for study; and Students in my course care about their classmates' problems.⁸ (González-Maura et al., 2019, p. 351).

It could be hypothesized that in a highly competitive context, individualism leaves no room for deep and humane relationships among students oriented toward mutual care or genuine concern for one another. Likewise, in an educational context framed by productivity, what room is there for cooperation in the classroom?

The second dimension is composed of the following items:

In classes, teachers implement new ideas and teaching methods to improve student learning; In classes, new and different ways of teaching with the use of ICTs are frequently tested; Our teachers like that students try to do original projects; In classes, work procedures help the student to “learn to learn”; and Teachers in my course take into account the opinion of students for the assessment of new ideas and teaching methods that are applied.⁹ (González-Maura et al., 2019, p. 353).

Regarding the low score obtained for this dimension, it seems that the efforts to install competitive models in the academic work of university professors do not necessarily go hand in hand with greater innovation, or at least, they were not recognized as such in the group of students surveyed. We should consider the meaning of the pedagogical practices of university professors, especially considering that engineering is a discipline that should lead great changes and transformations of society. What is the future of innovation if in the training of engineers, it is not

⁸ Author's translation.

⁹ Author's translation.

easy to visualize the impact on their training processes? The results reveal classroom practices lacking in student participation and leading role, thus hindering critical and reflective thinking in the future collective of engineers in this country.

Finally, the items that constitute the third dimension are:

Students strive to pass assessments with the highest grade; Students feel that assessment helps them improve their learning problems; Students self-assess their learning outcomes systematically; Students assess the learning outcomes of their peers; and Students feel that their teachers' assessment is fair.¹⁰ (Gonzalez-Maura et al., 2019, p. 354).

There is a disconnection between evaluation and student learning, but what stands out the most is the feeling of injustice behind the evaluation processes. What power relations exist between teachers and their students? In what way is an educational process being promoted as such in the training of engineers in this country?

Although the qualitative phase of this study did not enable us to address all these questions, it did allow us to review the teaching role in relation to these educational interactions, and with this, offer some elements for the review of the impact of the EHEA.

Phase 2

In the interview accounts, participants reported the perception of a faculty that sees its teaching role as part of its work in higher education as undervalued. They recognized that the current university is contextualized in a higher sociopolitical framework and that it would stand out for its teaching, research, and management functions. However, just as they perceived a devaluation of the teaching role, participants said there is also a lack of recognition of the management role. Thus, it would seem that the main valuation is associated with the role of researcher. This was confirmed by the low preparation and little support to exercise their role as teachers that, according to the interviewed professors, they receive from the university in which they work.

This year they are going to implement, in September, a teaching program where the teaching staff will be valued, the real teaching. ... Many things, barriers and opportunities offered by the university, not only this university, but the Spanish university as a whole.

¹⁰ Author's translation.

In the university, a teacher has three main jobs: to be a teacher, to be a researcher and to be a manager. We are all teachers, some of us are researchers. Managers—another small part, which is one of the most bitter and less valued parts. And in reality, without the manager, the university does not work. (Professor 1).

We who are going to teach at the university are not prepared. I have arrived, and I had no preparation. This year, I signed up for an introductory course in university teaching, which has been very good for me, but even so, I see that I still need more preparation. (Professor 3).

This scarce preparation for a university teaching role is coupled with feelings of loneliness, which shows the rare experience of collaboration among colleagues to start the teaching process. In this sense, individual work can be glimpsed in the exercise of the functions of engineering professors, impacting how they develop their teaching and the ultimate meanings that higher education generally and the training of engineers particularly have for them.

When I came here, I found myself a bit lonely. In the sense that there is a lack of means, of documents with which you can begin to develop a little more security. It's not because I don't know them, but because you are doing a different facet of your profession, you are training technicians. This is not to say that when you were training people by trade -which is what the workshop school did- you didn't have to prepare yourself. Yes indeed, but here you need a differential. The differential is that not only do they have to know, but they also have to know the "why" of these things. To have a foundation. And I found myself a bit lonely in that sense. (Teacher 2)

On the other hand, the loneliness of beginning a university teaching career is intertwined with a precarious start, in which participants questioned whether academic merits are really the most relevant way to evaluate those who seek to start this career. Nepotism appears hand in hand with favoritism, which must be confronted by those who aspire to dedicate themselves to the training of engineers. In addition to this issue, it seems normalized that the entry to this teaching career must begin with temporary contracts for a prolonged period of time before gaining some job stability.

I am going to be honest with you. Actually, I am the consequence of a fight of titans, because there were two heads, two characters in the university, and each one had his well in with the teacher. And then, it turns out that I had a very good grade in the teaching project. My curriculum was also good in the years that I had already been there. I had

been here 6 years before, in the professional profile, and that was it. So, I got the position here. I joined as an associate the first year, part-time. (Professor 5).

DISCUSSION AND CONCLUSION

This article analyzed the impact of the EHEA on the interactions between engineering professors at a Spanish university and their students based on the teaching role that these professors have been building in this specific sociopolitical context. The results suggest their interactions have been weakened in aspects that go beyond the relationship between students and their professors. In this sense, a fragile network of affective relationships between students stands out, revealing scarcely collaborative relationships, in addition to a low valuation of methodological innovation, a key dimension in engineering education and higher education in general (Casañola et al., 2021).

Thus, there is low leading role among the students, which would be promoted by their professors and in turn, would have an impact on the lack of bonding among students. These findings are especially critical, because the scarcity of interactive pedagogical strategies and the absence of collaboration can weaken the potential of engineering education in higher education settings (Cornide-Reyes & Villarroel, 2019; López et al., 2020; Martínez & Ríos, 2019; Reyes-Torres et al., 2019; Rojas et al., 2020).

This may be related to the finding of a lack of collaboration among university professors, which became evident in their answers during the in-depth interviews. It could well be that a work and professional experience of loneliness has an impact on the methodological strategies of teaching and learning that are passed from the professors to the students of this degree program. The EHEA takes place in a highly competitive and commercialized environment (Pomares & Álvarez, 2020) for which individualism has become crucial. In this way, a university teaching identity and role must be shaped in solitude, which in turn, allows for scarcely affective relationships among students and a weakly innovative teaching approach. These are consequences of the advance of the EHEA as an objective product of the policies of neoliberalism in Europe (Martín-Alonso & Pañagua, 2022). The neoliberal capitalism that permeates many of the EHEA initiatives has led university faculty members to believe that interactive pedagogical strategies are almost exclusively a part of pedagogical innovation that depends on good information and communication technologies. Thus, there is a risk of assuming that the essential aspect of interactive teaching is the tool and not its purpose. In this sense, teaching innovations with an interactive purpose may well occur with materials considered precarious or with simple strategies, because as Cornide-Reyes and Villarroel (2019) pointed out, "there are several methods created by experts on the web that should not be discarded for only using simple materials such as

cardboard, post-it notes, adhesive tapes and markers”¹¹ (p. 10). The leading role of engineering students in the classroom does not require complex and expensive tools; the results of this study suggest that it rather requires a committed faculty capable of working as a team and learning from other university professors.

Likewise, the fact that the forms of evaluation of learning are weakly valued by the students of this degree program indicate the lack of pedagogical training of engineering professors. As they pointed out in the interviews, there is no major accompaniment or training by the university regarding the pedagogical role of teaching in engineering, which may result in arbitrary forms of evaluation of their students. This could explain the feeling of injustice among students with respect to the forms of evaluation experienced in the classroom. To what extent could an evaluation considered as unfair and disconnected from learning contribute to a student body that can thrive in the knowledge society promoted by the EHEA? The excessive emphasis on the commercialization of scientific productivity (Pomares & Álvarez, 2020) and the scant value placed on a teaching profile appear to be having a negative impact on one of the most important objectives of the EHEA, establishing a paradox whose understanding should be deepened in future studies. It would seem that the multiple profiles of university professors -teacher, researcher, manager, and bureaucrat, as referred to by Pomares and Álvarez (2020)- do not have the same valuation as these different expressions. Thus, it is worth asking about the impact that this disconnection may have on the significant dropout rate in this student body (Rodríguez et al., 2018).

The results of this study confirm the findings of Rivera (2022) regarding the existence of excessive managerial tasks for university professors, adding that these tasks seem to be rarely recognized or valued by the educational institution. Although this study did not allow us to generalize our findings, nor was it intended to do so, these findings allow us to begin to appreciate the socio-educational effects of competition and meritocracy as constituent values in Spanish and European universities (Menéndez & Hernández-Castilla, 2021; Martín-Alonso & Pañagua, 2022). Therefore, these results should serve as a warning to pay attention to the effects of a global policy that is advancing by leaps and bounds and must be constantly evaluated, questioned, and problematized.

Among the limitations of this study is the absence of the qualitative voice of the students, and future studies could incorporate their situated and locally located positions. Also, these findings should be contrasted with other groups of students in the same degree program and those

¹¹ Author's translation.

pursuing other engineering degrees in this institution and other universities.

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