

CHANGING FROM FACE TO FACE TO E-LEARNING IN EMERGENCY CONTEXTS: EXPERIENCES FROM COVID-19 2020 PANDEMIC CRISIS IN UNIVERSITY CONTEXTS IN PORTUGAL

Filipa Ramalhete¹², Liliana Pascueiro², Teresa Santos², Inês Pedro Vicente²

¹ CEACTION/UAL – Centro de Estudos de Arquitetura, Cidade e Território da Universidade Autónoma de Lisboa (PORTUGAL)

² Interdisciplinary Centre of Social Sciences - CICS.NOVA (PORTUGAL)

Abstract

On the second week of March 2020, due to the Covid-19 pandemic crisis, the Portuguese universities, mainly organised in face-to-face teaching methods, and with little experience in full on-line teaching, had to, abruptly, find a way to assure that classes went on “as usual”.

Both students and professors, each one with its constraints, did their best to achieve teaching and learning goals. The universities' informatics staff worked around the clock to ensure that everybody was connected and to find the best solutions for these unprecedented circumstances. Under the umbrella of FCCN (a branch from the Portuguese national funding agency for science, research and technology that manages the Science, Technology, and Society Network, a digital research infrastructure), most universities have chosen to maintain synchronous classes via platforms such as Zoom, Google Hangouts and Teams, following the semester schedule that had already been established. The classes are complemented with the use of the university Moodle platform. Professors also use other complementary tools, such as e-mails, WhatsApp and Skype.

Regardless of the solutions found by professors and students, and the general goodwill of the educational community, this situation raises enormous challenges for all. Taking as a starting point the evaluation of this transitional experience, the team did an on-line survey to students and professors. The inquiries focus specifically on the difficulties, advantages and disadvantages experienced and on whether if this forced change may or not be an opportunity to change teaching and learning contexts in the future and overcoming some of the challenges that teaching faces today. Could the imposition of a new pedagogy integrate new forms of access to knowledge? Will a differentiated pedagogy materialize and involve the student in the learning process, concretizing interactive learning processes?

Furthermore, we also asked professors and students where their educational facilities were located (municipality) and where they attended classes during the pandemic crises (at home, at students' resident, country). These data will allow mapping the spatial lag between the educational community and the educational facilities. The virtual distance between students, professors and schools were mapped and used to analyse the spatial consequences of the quarantine period.

Keywords: distance learning, Covid-19, higher education, Portugal

1 INTRODUCTION

Due to the Covid-19 pandemic crisis, in Spring 2020, according to UNESCO, more than 72,4% of the world students, in 177 countries were affected by school closure, in all school levels [1]. Portuguese universities had, as in most world countries, to shut down their facilities and change from face to face to distance learning overnight. This situation raised unprecedented challenges for university staff, professors and students. Most of them with little experience in full on-line teaching, when forced to find new teaching and learning models, and to articulate them with its constraints, had to give a rapid and efficient response to one of the biggest challenges of their lives.

Undoubtedly, this change wouldn't have been possible without the Internet. When Marc Rosenberg, twelve years ago, questioned the brightness of the future of organizational e-learning after the initial hype caused by the generalisation of the Internet [2], he was right, not only for enterprises but also for

universities. In Portugal, except for the Open University, the offer for a higher education in e-learning has little increased since then. Nevertheless, the consolidation of the network society in an increasingly global world, with high accessibility to the media and technology, raised the technological competences of students, professors and institutions. Portuguese universities, with the support of FCCN (a branch from the Portuguese national funding agency for science, research and technology that manages the Science, Technology, and Society Network, a digital research infrastructure), adopted e-learning platforms, mainly to support face to face classes, and implemented several on-line tools for bureaucratic purposes.

These skills and resources were important for the transition period but were they enough to support such a dramatic change? Most of the universities decided to maintain synchronic classes and not to change and prepare new programs and resources from scratch, adopting e-learning models in the broad sense of the term (learning through several hardware devices using the Internet connection).

In this context, there are two main characters, who play complementary roles: professors and students. Regarding professors, the network society, with the information dissemination, has definitely questioned the professors' role as someone who owns and transmits knowledge to the one who supposedly needs that content. So, one of the dilemmas concerning the school, and particularly to higher education, is: in an increasingly global society, with increasing accessibility to the media and technology, the diversity of the public in the education system, both in terms of social characteristics, and goals and expectations regarding education, is the professor effectively-prepared to take on a new role – of someone who (probably) knows more than the students but also knows that they are just guiding them through a large and heterogeneous *sea of knowledge*? Student orientation and tutoring posture are required more and more, focused on the principle of transmitting tools for autonomous learning, in the role of learning advisor, facilitator, more than of holder of knowledge [3].

In professional practice, the professor is therefore required to diversify skills, which go beyond the domain of pedagogy and the scientific component. Characteristics such as flexibility, versatility and creativity are increasingly required [4]. Being able to adapt to different teaching situations, analysing practices and the results achieved and, therefore, readapting it when necessary is now an important part of teaching. Eventually, adapting to Covid-19 is part of all these challenges, as unpredictable as the situation is.

Anderson [5] presents the learning process in e-Learning as space where two dimensions are connected: communication, using the Internet, and content. And even if communication has no personal interaction, a high level of virtual interaction among students, among them and the professors, and even among professors of various disciplines, or courses, is still feasible. In what concerns content, it can be a simple delivery of learning resources produced or delivered by the professor, but it can also be built in partnership between students and professors, built together, to fulfil a learning project. Anderson divides e-Learning into four categories: online resources, structured online courses, blended learning (which includes a classroom component) and communities of practice. The richness of interaction and content produced increases from a simple resource to a community of practice. In this process, students are a fundamental part. The student must be the central actor in the teaching/learning process and, thus, make it possible to reconstruct the positive meaning attributed to education and training [6]. Both professors and students must have a proactive and constant training attitude, for professors to be empowered with new skills, giving form to the “reflective teacher” model [7], and for students to develop autonomous and reflexive learning skills. However, there is always some level of impact in time and space routines in transitioning from the traditional face to face system to e-Learning, especially in what concerns managing personal and learning time [8].

This paper assumes that university professors and students are involved in contemporary teaching/learning dynamics, where students are supposed to have some degree of autonomy and where professors encourage them to do their research. We also take for granted the fact that face to face teaching/learning gives, at least in some degree, a sense of belonging to a learning community. What we tried to find out, through an on-line inquire, was how did things change with the Covid-19 crisis, when these communities had to modify their ways of interacting. This research helps to understand the transition period we are experiencing. What were the changes and strategies in Portuguese universities? What are the benefits and the main difficulties, both for students and professors?

Additionally, the discussion of results aims contributing to a broader discussion on whether these forced changes will result in opportunities to transform teaching and learning contexts in the future, overcoming some of the challenges that teaching and learning were already facing in the network society of the 21st century. Could these pedagogies, forced by the circumstances, integrate new forms of building

academic knowledge? Will a differentiated pedagogy materialize and involve students and professors in more interactive teaching and learning processes?

2 METHODOLOGY

The sudden change from face-to-face learning and teaching forced universities' informatics staff to work around the clock to ensure that everybody was connected and to find the best solutions for these unprecedented circumstances. Regardless of the solutions found by professors and students, and the general goodwill of the educational community, this situation raised enormous challenges for all. Taking as a starting point the evaluation of this transitional experience, an on-line survey to students and professors was launched. The inquiries focus specifically on what changed and what was maintained (classes routine, evaluation methodology, syllabus), on the technological tools used to face distance and on the difficulties, advantages and disadvantages experienced during the process). It was also asked to professors and students where their educational facilities were located (municipality) and where they attended classes during the pandemic crises (at home, at students' resident, municipality, country). These data allowed mapping the spatial lag between the educational community and the educational facilities. The virtual distance between students, professors and schools was mapped and used to analyse the spatial consequences of the quarantine period.

The survey was launched for the students on 23 April and on 26 April, for the professors. The social media was the selected dissemination tool, along with the mailing list of the institutions that support this research.

3 RESULTS

The survey was completed by 657 students and 66 professors (5th May 2020).

Among the 657 students' inquiries, 17 were not valid and were excluded from the analysis. The initial questions addressed the residential context of the students: 620 students live in Mainland Portugal, 13 in Madeira, 1 in Azores and 6 abroad (Fig. 1). Most of the surveyed students live in the Metropolitan Area of Lisbon (75%), followed by the Western Region (4%) and Madeira (1%). The remaining 24% live in the North, Centre and South of Portugal and 1% live abroad. Regarding gender, 63% are female students. The private sector is the most represented, with 77% of the responses, while the public sector stands for the remaining 23% of the inquiries.

From the initial set of 66 surveys handed over by the professors, 5 were not valid and therefore disregarded from the following analysis. Most of the 61 professors live in the Metropolitan Area of Lisbon (92%), and the remaining 8% live in the North, Centre and South of Portugal (Fig. 2). The residence during the academic year is in the same district of residence. Regarding gender, 69% of the inquired are male professors.

Most of the students live with family members (85%), 8% share house, 5% live alone and 2% live in students' residences. More than half of these students claim to be the only person in the residence to attend the education system, although for 31% of students there is still a second person in the education system. There are still 35% of students with 1 person in the home teleworking and 10% caring for children under 12 years old.

Regarding Professors, the majority live with family members (82%), 16% live alone and 2% share house with non-family. 66% of professors claim to be the only one currently integrated in the education system and 46% claim to be the only element in telework. Almost half of the professors claim to be providing support to family or friends and 23% have children under 12 years old to whom they have to provide support.

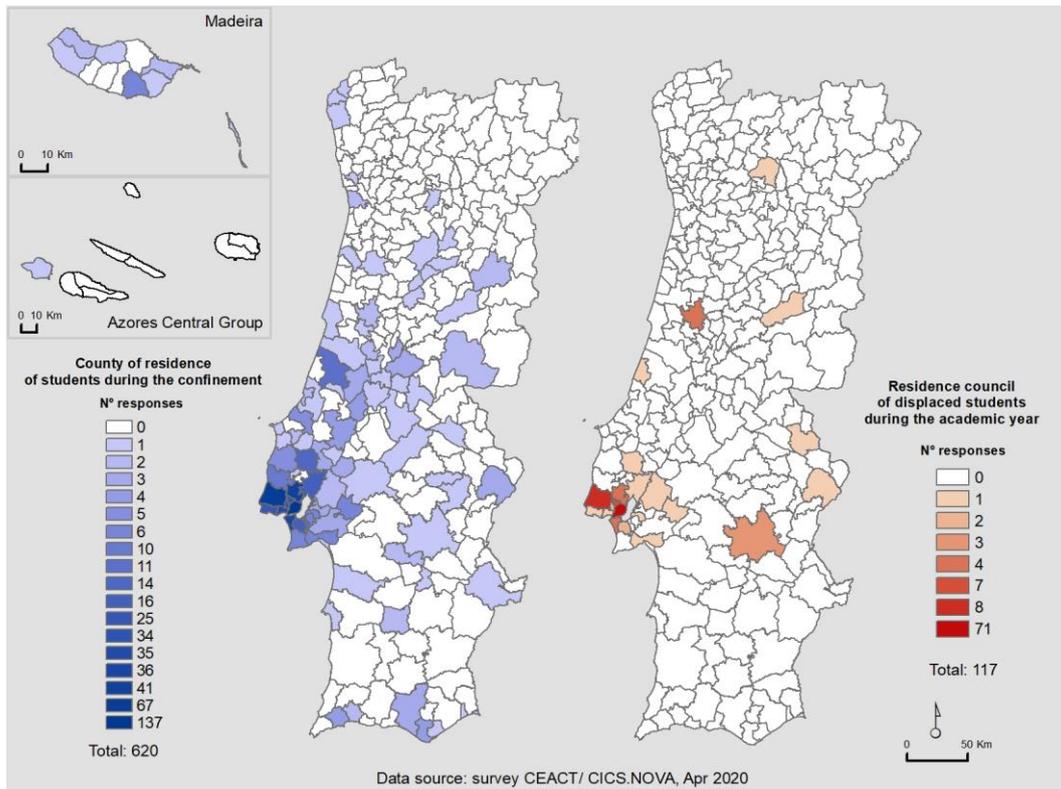


Figure 1. Students residence: during the confinement and the academic year

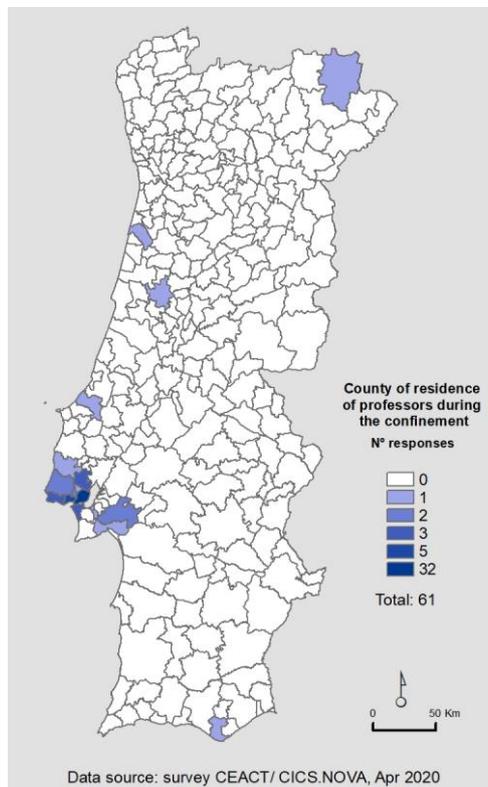


Figure 2. Professors residence during the confinement

3.1 The transition to an e-learning model: the perspective of students and professor of higher education

As a result of the WHO declaration of a global pandemic by COVID-19, the Portuguese Government declared a State of National Emergency on 18 March 2020, and, among other measures, the suspension of face-to-face classes.

The priority of the education system was to find solutions that would allow the assurance of teaching activities, but not in person. The most viable alternative was to make use of new information and communication technologies, bringing the entire higher education system closer to the e-learning model. But are professors and students prepared for this transition? What difficulties are they encountering in this process and how do they evaluate this new pedagogical model that they were forced to accept?

From the surveys, we can conclude that among the available platforms, almost all participants have used platforms that allow virtual interaction (e.g. Microsoft teams, Zoom, Google Hangouts, etc.), somehow trying to approach to classic classroom dynamics. Next, there are the platforms directed to the document exchange and sending of papers (Moodle) and the video lessons (without interaction), indicated by the students, and the use of email only, by the teachers (Fig. 3).

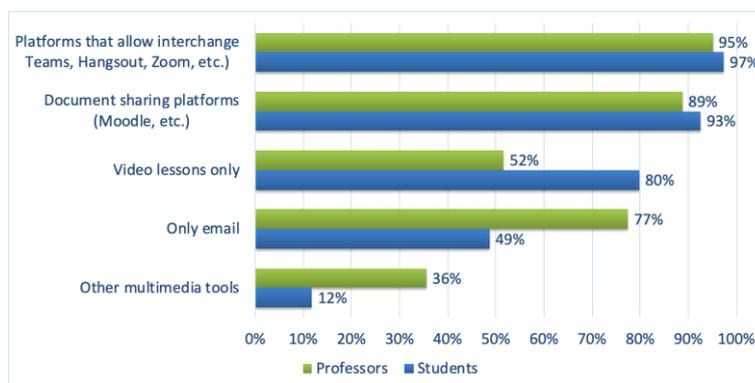


Figure 3. Modalities/tools used in current classes

These platforms were not unknown to the vast majority of respondents. However, the number of professors who already knew all or most of those referred to is higher (80% compared to 68% of students). Even so, it should be noted that around 5% of students and 2% of professors were not aware of them at all (Fig.4).

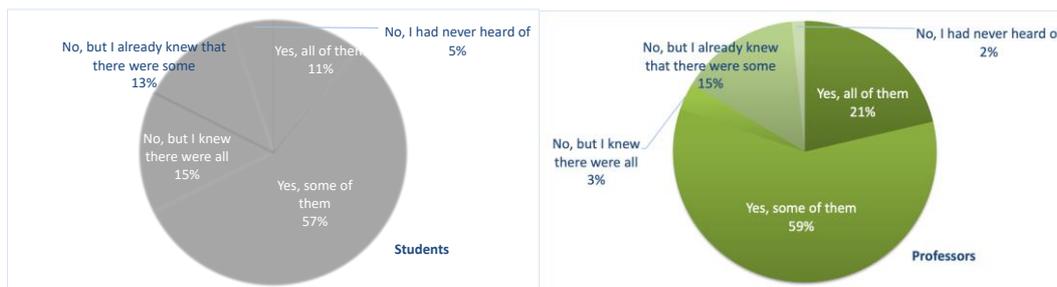


Figure 4. Familiarity with the learning platforms

In the transition from a classic classroom teaching model to e-learning, two major dimensions of the daily life of the actors (students and professors) were involved: on the one hand, the teaching/learning process, where the technical conditions in which this process takes place are integrated beyond the transmission/acquisition of knowledge; and, on the other hand, the day-to-day management, between class/work time and other personal activities. Asked about these indicators, both, students and professors, manifest greater difficulty in what they give to the day-to-day management to ensure all tasks, with a higher proportion of professors expressing this difficulty (61% compared to 52% of students). About $\frac{2}{3}$ of the students also have difficulty in understanding the contents of the classes. As for the technical aspects involved in this transition, these do not present themselves as problems: less than 5% consider they had difficulty in accessing computers or the digital platforms on which the classes

are held (professors and students). Except for Internet access, which is still a difficulty for 8% of students (Fig. 5).

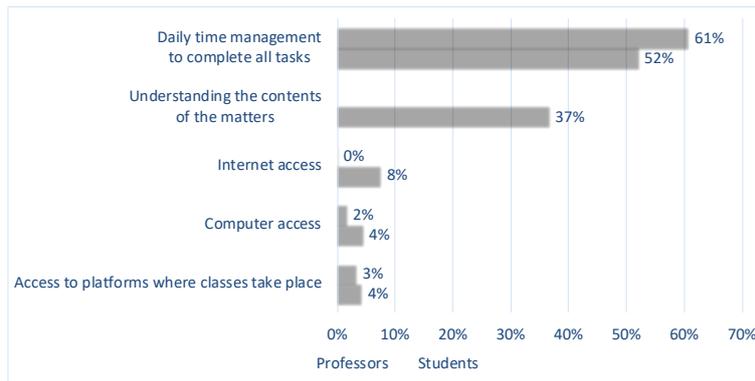


Figure 5. Students and Professors: difficulties of the e-Learning process (proportion of “difficult or very difficult”)

Given the performance of professors activities and comparing the two systems, face-to-face teaching to e-learning, the perspectives of the two actors regarding what worsened are different: while students focus mainly on their performance, i.e., on their ability to concentrate (51%) and to understand the subject (34%), professors show that it was the interaction with students (39%) and the follow-up of students during classes (33%) that were the aspects that worsened with the imposition of non-face-to-face classes. It should also be noted that only 13% of students consider that their autonomous work had worsened, and the same proportion of professors consider that their ability to concentrate had worsened (Fig. 6).

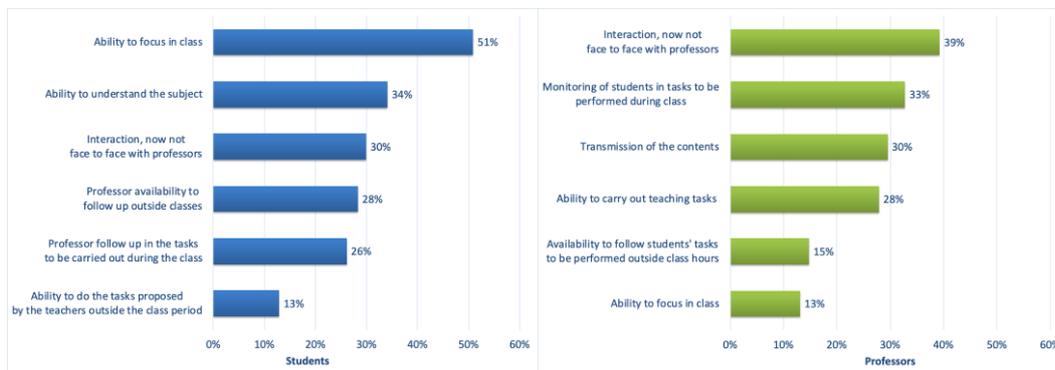


Figure 6. Evaluation from the transition to e-Learning system: the proportion of evaluation “got worse”

When questioned about the main difficulties felt in adopting this teaching model, it was found that for both actors, the management of daily tasks is the aspect that, for more than half of those questioned, gives rise to greater difficulty (55% of students and 56% of professors), followed by conciliation with other aspects of the teaching career, such as research and meetings (39%). Management of personal (31% and 32% respectively) and family life (36% and 28%) has also been difficult. The difference between groups lies in the difficulty of working independently outside the school environment for students (32%, only 7% of professors consider this a notable difficulty) and the difficulty of adapting or understanding the technology (26% of professors compared to 12% of students) (Fig. 7).

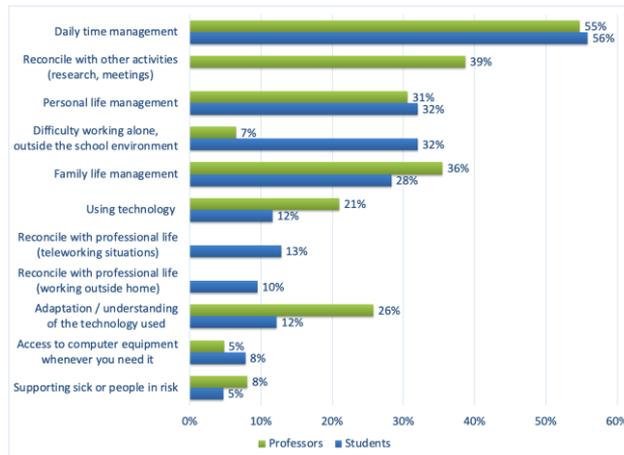


Figure 7. Student difficulties from e-Learning system (proportion from total)

Thus, the main disadvantage of this education system is the absence of collaborative learning (58% in the group of students and 68% in the group of professors). This is followed by the difficulty in concentration (49%) and the increase in subjects (23%) for students; and for professors, the time spent preparing the contents of the classes (42%) and the limitation of the type of materials to be used (34%) (Figure 8). The main advantages they find in the current system coincide between the two groups: less time spent on travel (82% in the group of students and 74% in the group of professors), the development of learner autonomy (45% compared to 44%) and access to class materials, refer the students (38%) and diversification of the materials to be used, mention professors (24%) (Figure 9).

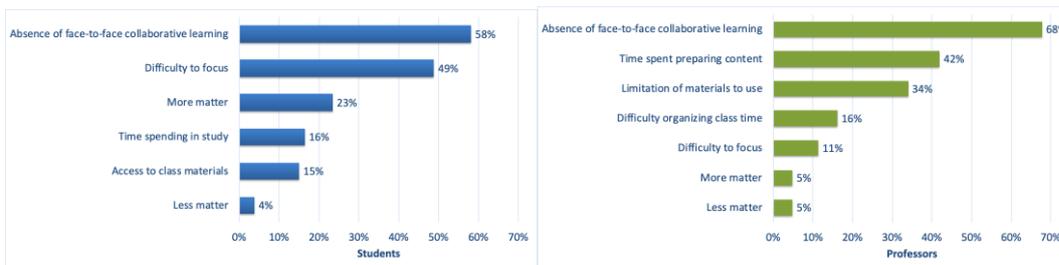


Figure 8. Disadvantages of the e-Learning system

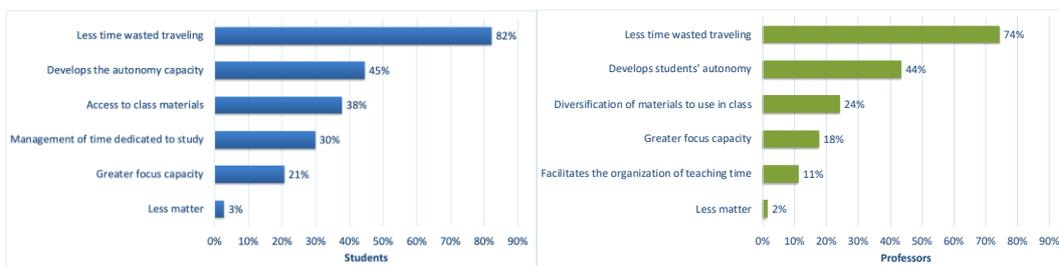


Figure 9. Benefits of the e-Learning system

Finally, when asked about the degree to which this teaching model is being implemented, half of the students consider that the vast majority of all professors are successfully implementing this model, and 34% consider that this is the case with all their professors. Professors' perception of their adaptation to the system is more positive: 54% consider that it is achieving completely and 44% mostly (Fig. 10).

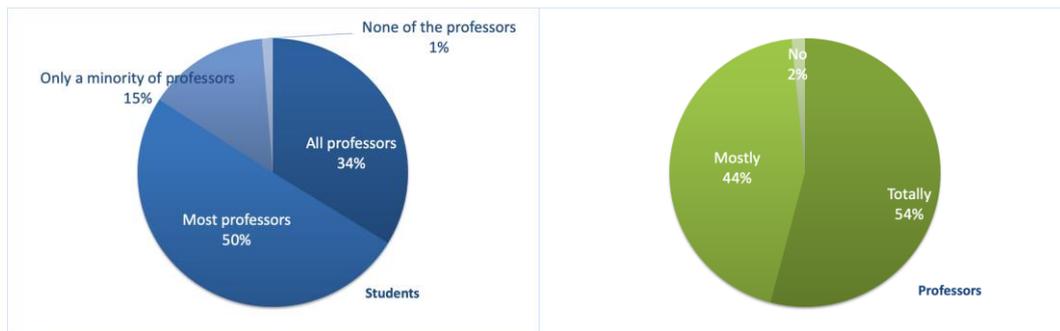


Figure 10. Perception about the implementation of the e-Learning system

4 CONCLUSIONS

The Covid-19 pandemic crisis brought profound changes and challenges to Portuguese students, professors, and universities, with the abrupt shift from a face to face education system to a distance learning system, little used until now.

The transition to an e-learning model, in the Portuguese scenario, was made possible by the use of new information and communication technologies. Either by anachronic technologies, like document sharing platforms, video lessons and other multimedia tools, or synchronic technologies, as platforms that allow virtual real time interaction, on a clear attempt to emulate the traditional classroom dynamic.

This system has its benefits and difficulties and can result in opportunities to transform teaching and learning contexts in the future. Given the performance of students and professors activities and comparing the two systems, the main disadvantage is the absence of face to face collaborative learning, and the main benefit, the absence of commuting times, followed by the development of students' autonomy.

The majority of the professors inquired consider that this teaching model is totally or mostly implemented in their teaching methodologies, while most of the students have the perception that most or all the professors are successfully implementing the e-learning system.

These results show that these pedagogies, though not new, forced by the circumstances, can integrate new forms of building academic knowledge and involve students and professors, materializing new teaching and learning processes.

ACKNOWLEDGEMENTS

This work is financed by CEU – Cooperativa de Ensino Universitário, the founding entity of Universidade Autónoma de Lisboa, and by national funds through FCT - Foundation for Science and Technology, I.P., within the scope of the project «UIDB / 04647/2020» of CICS.NOVA - Centro Interdisciplinar de Ciências Sociais da Universidade Nova de Lisboa. The third author was financed by national funds through the FCT, under the Norma Transitória – DL 57/2016/CP1453/CT0004.

REFERENCES

- [1] UNESCO, COVID-19 Educational disruption and response, Assessed 6 May, 2020. Retrieved from: <https://en.unesco.org/covid19/educationresponse/>
- [2] Marc Rosenberg, *Beyond E-Learning, Approaches and Technologies to Enhance Organizational Knowledge, Learning and Performance*. Pfeiffer: San Francisco CA, 2006.

- [3] C. Leite & K. Ramos, "Formação para a docência universitária: uma reflexão sobre o desafio de humanizar a cultura científica", *Revista Portuguesa de Educação*, vol. 25(1), pp. 7-27, 2012.
- [4] C. Loureiro, *A docência como profissão*. Porto: Edições ASA, 2001.
- [5] J. Anderson, *ICT transforming education, A Regional Guide*, Bangkok. Thailand: UNESCO Bangkok, Asia and Pacific Regional Bureau for Education, 2010.
- [6] C. C. Santos, F. Pereira & A. Lopes, A, "Efeitos da intensificação do trabalho no ensino superior: da fragmentação à articulação entre investigação, ensino, gestão académica e transferência de conhecimento", *Revista Portuguesa de Educação*, vol. 29 n.º1, pp. 295-321, Braga, jun. 2016.
- [7] B. Cattonar & C. Maroy, C. "Rhétorique du changement du métier d'enseignant et stratégie de transformation de l'institution scolaire". *Education et Sociétés. Revue internationale de sociologie de l'éducation*. n.º. 6, pp. 21-42, 2000.
- [8] Filipa Ramalhete, José António Tenedório & Carla Rocha Gomes. "The impact of e-Learning in students' time and space routines", *Proceedings of INTED2013 Conference*, pp. 2898-2904, Valencia, Spain: 4th-6th March 2013.