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Digital-Distance-Education: A Step Back?

Susana Bastos[1*], Manuel Silva[2], Helena M. Oliveira[3], Valeria Caggiano[4], José-Luis Poza-Lújan[5]

[1, 2, 3] ISCAP - Porto Polytechnic School, CEOS.PP, Porto, Portugal
[4] [4]Senior Lecturer at Roma Tre University, Via Ostiense, 159, 00154 Roma RM, Italy
[5] Senior Lecturer at Universität Politécnica de Valéncia, Camí de Vera, s/n, 46022 València, Spain
*susanass@iscap.ipp.pt

ABSTRACT

In recent years, educational research has focused on implementing digitalization in education. However, the imposed practice of distance learning due to COVID 19 has shown that distance teaching still has a long path to follow to evolve. The digital platforms and methodologies available for use are still far from promoting real interaction and a way to manage emotions at a distance - the essence of face-to-face teaching. Based on the last months' challenging experience of distance teaching, it is clear that HEIs have to rethink their actions in this field and plan ahead. To help build an answer, we have developed a study to assess the impact that this time of digital distance learning has had on the lives of students and teachers and the results it has brought to academic and social life. The study was developed using questionnaires and interviews with students who, in the last months, have experienced distance learning with synchronous classes and whose evaluation was almost exclusively carried out at distance.

Keywords

Distance Learning; Education; Educational Methods; Digital Platforms; Motivation; Core Skills; Managing Emotions

Introduction

In recent times, discussion about distance learning highlights its impact on educational performance. Nowadays, thanks to new technologies, together with an experiential approach, it is possible to create applications that simulate real-life situations, making soft skills reproducible, scalable and empowering research and training activities. It is clear from different points of view and accredited data (OECD, World Economic Forum, and European Union), that nuclear skills, distance learning and the use of appropriate technologies are the main drivers of contemporary times.

The reality that reigns today and which has forced us to redirect and change significantly the didactics and methods of teaching and learning, has resulted in a call for a new look at what distance teaching and learning is.

Regardless of the continuity of the current situation, which guides us towards distance learning, it is fundamental that concepts such as distance didactics; "lean" learning; promotion of core competencies; personalized teaching and emotional management tools are revisited and rethought to create a new paradigm of teaching-learning.

Due to the pandemic situation in recent months, education has undergone an abrupt change and it has been necessary to reinvent educational methods from face-to-face to digital distance learning.

The current scenario remains uncertain, as the pandemic is not yet under control. Higher education institutions must continue to work on transforming the didactics and pedagogical methods used in distance education in order to promote self-motivation and self-learning of students, always with the continuous tutoring of teachers, in order to guide students in their academic path. The change in educational environments is intertwined with the change in digital platforms, but the question remains: is this digital distance learning the necessary impetus to ensure the sustainability of Higher Education Institutions (HEIs) as major players in education and to strengthen their role in shaping the future of education?

The aim of this paper is twofold: first, to contextualize and describe the distance learning process, in the last five months, in the subject Management Simulation II, at Porto Polytechnic Institute, Porto Accounting and Business School. Second, to analyze the results of the survey carried out to the students who successfully completed this course and, to establish a comparison with the previous face-to-face learning in Management Simulation I, which took place in the first semester.

To complete this task, the study seeks to answer the following research questions: How have students in the course of Management Simulation II experienced distance education during the period of confinement imposed by the pandemic situation?
These students, who attended the Management Simulation I course in the previous semester, identified the main differences felt between face-to-face and distance learning?
Has this distance education been able to maintain quality and motivate students?
This article is organised as follows: first, concepts, methods and arguments relevant to organised distance learning are presented from a theoretical point of view.
Based on the theoretical framework, the authors present the research method followed and discuss the results obtained. The last section presents the conclusions of this article and points out some recommendations for the future.

1.1. Digital technologies and distance learning

Digital technologies are not only changing habits, but also the logic of enjoyment and perception: without being able to deepen the qualification of the new media as cultural forms, the "database logic" described by Manovich (1999) [1], we limit ourselves to noting that some virtual experiences stimulate a form of logical inference that goes by the name of abduction. This form of inference is typical of experiential and gamification approaches: given that the explanation of all the possible rules, actions, strategies and shortcuts of a game would be vast, people tend to act "by trial and error", to the point of reconnecting a circumstance not known to the rule that produces it. Moreover, with Information and Communication Technologies (ICT), learner autonomy grows exponentially. The learner is required to take responsibility for his/her own learning path - the experience becomes central. By using these new technologies (De Kerckhove, 1993) [2], our body is being expanded into a mediated body (Lévy, 2002) [3] we experience new and different functions and reinvent the old ones.
The experiences of digital and distance learning courses have strengthened the effectiveness of a blended methodology, the integration between real offline and remote online paths guarantees greater effectiveness.
The educational contexts are changing accordingly; they enhance multi-channel communication, facilitate interaction, become flexible and use different tools (Horizon, 2014 and following) including the adoption of open innovation mindset, framework 4.0, social technologies, digital strategies, and other enabling technologies. The phenomenon of "connectivism" emerges as the theory of learning properly in the digital age, in which rapid changes in the ecology of information are faced. Siemens (2005) [4] As Bell (2011) [5] points out, however, connectivism cannot be seen as a real theory of learning, also because it rejects propositional knowledge.
On the level of human cognitive, behavioral and operational skills, the new context involves several challenges in industrial organizations and teams (Millar, Groth, Mahon, 2018) [6]. The "new normality" can be described in the acronym VUCA: velocity, uncertainty, complexity and ambiguity. In the VUCA world, continuous, unpredictable and widespread changes needed to develop new business models, new ways of thinking and new skills and individual and organizational skills (Thorén, Vendel, 2019) [7]. The most crucial point to cope with these challenges might be the individual skills possessed by the company and project managers (Mangan, Christopher, 2005) [8].
The WEF study (2018) [9] entitled "Eight Futures of Work: Scenarios and their Implications", presents several possible visions of what the future of work could be like until 2030, stating that "(...) the evolution of learning between the current and future labour force; and the magnitude of talent mobility between geographies, are likely to influence the nature of work in the future (...)".

1.2. Distance learning versus emotions management

Emotions, in the age of digital relations, in which the interlocutors meet in different places and engage in relationships of friendship, of playmates, of socialization through the experiences of influencers, "avatars" companies - that exist but are not present, conversations and discussions on the hot topics of today; generate in the younger generations a way of life distinct from that experienced by their parents.

Goleman (1997) [10] describes his interpretation of emotion has a feeling and the reasoning resultant, psychologic and biologic states and the intention to act (cited by Lopes, 2011) [11]. "Damasio states that to make a good decision, we need to have feelings about our thoughts" (cited by Goleman, p. 4 2015) [10].

Accordingly, with Newen (2009) [12] emotion accomplishes functions of great importance because they prepare and motivate humans to act; facilitate the assessment of the context in an instant of time, helps in controlling social relationships. Ballone (2007) [13] refers that those emotions can mobilize our autonomous nervous system, organs and internal systems, so, emotions have a great influence on health, also and through they motivational characteristics through healthy behaviors.

The cognitivist theories state that the cognitive process, such as perceptions, memories and learning, are fundamental to get to know emotions. It is enough that one situation provokes a physiological reaction e human tries to understand the reason to give a name to the correspondent emotion.

"Self-awareness helps us with ethics and decision making in general. Self-awareness and self-management. These are the basis for self-mastery: awareness of our internal states, and management of those states. These domains of skill are what make someone an outstanding individual performer in any domain of performance – and in business an outstanding individual contributor, or lone star. Competencies like managing emotions, focused drive to achieve goals, adaptability and initiative are based on emotional self-management." (Goleman, 2015, p. 20) [10].

Emotional intelligence abilities start in the early years, "and develop naturally in the curriculum of life. If we need to improve on one or another, we can do it at any point. Why aren't they taught at early ages? Points out the need to introduce the "movement in social/emotional learning", or social and emotional learning (SEL), in school programs. This would allow teaching to access the "whole spectrum of emotional intelligence abilities". Goleman (2015) [10].

This kind of solutions are based on SEL learning - with the user's experience as the center of the applications; multiple choices and timelines; adaptive contexts - that change according to user behaviour and attitude; interactive contents - animated and/or personified contents that react to user's actions. All these experience-based solutions and applications are designed and planned according to the most structured scientific literature available; but to evaluate all the generated potential especially by users' experiences, the project integrates into the platform an artificial intelligence tool (AI), based on machine and deep learning.

Stapleton [14], states that the attention of the scientific community towards this specific theme continues to grow progressively, as well as that of the society-market, and educational applications increase, mainly in scientific, humanistic and artistic subjects. Despite important differences, all experiences demonstrate a positive effect of motivation and involvement. So far, the main purpose of many of the projects has been to enhance the informative charge of the experiences, the main results are better learning trends, involvement, motivation, collaboration. The main difficulties are technical complexity, logistics and the intrusive nature of communication, elements that are in any case progressively improving. It is important to state that virtual reality is an important strand for developing the world of education and improving learning experiences and above all, we must not think that we can disregard the quality of the experience and the content (Stapleton, 2005) [14].

Our position is that the management of emotions is an essential aspect to be taken into account in distance learning.

The introduction of activities properly prepared and guided by pedagogues and psychologists, with the main objective of supporting students in the management of their emotions, has a significant role in the management of distance learning over time.

1.3. Management Simulation at IPP-ISCAP

The Business Environment Simulator Model (BESM) which supports learning is oriented towards developing the key competences students need to prepare for the labour market. The SBE Model includes two subjects: Management Simulation I and II, framed in the last year of the degree in Accounting and Administration, having a total of 18 ECTS and being optional curriculum units to the professional traineeship.

The SBE Model was created with the objective that the complete training of skills requires the availability of this Model that ensures the student a multifaceted participation, as an actor in the process of designing, developing and maintaining the business reality.

This technology-based model should provide a learning space, based on the simulation of the typical organizational environment of an entity with an advanced management profile, which involves the student in the application of knowledge that throughout the course is emerging in a multidisciplinary and interdisciplinary way.

The particularity of the skills training process that the Model is oriented to, shapes the teaching methodology and the assessment system itself, which is built on a dynamic basis primarily interested in the progressive effects of the expected change in students, but it is also concerned with the verification of the skills acquired having in consideration their final academic certification.

This education and training practice has the fundamental purpose of linking theory with practice. It therefore requires the transformation of training experience into work experience, in which the passive and receiving role of the student gives way to an active role in the process.

During this period of confinement, the students who attended the Management Simulation I course unit in the first semester of the year 2019/2020 in face-to-face teaching mode had their face-to-face teaching interrupted after the ninth session. It was replaced within a week by distance learning, characterised by a strong focus on carrying out the activities of the simulated enterprise, outside class hours, and at distance. Serving the hours of contact with the teachers, for the explanation of new contents and new tasks/activities to be carried out and, for the feedback of tasks previously carried out.

The distance learning classes were held at the same time as the face-to-face classes, which consisted of 6 hours per week, twice a week. Thus, students attended the classes using the Microsoft TEAMS Platform and, at synchronous evaluation times, using the ZOOM Platform.

2. Method

As the main methodology, the case study is the most appropriate for this study. The quantitative and qualitative approaches seem appropriate to analyze the data and "perceptions" resulting from the survey responses.

In order to exploit distance learning, due to the results obtained during the period of distance learning, in confinement time, and taking into account the manifestations of teachers and students, the study of distance learning was considered necessary. Thus, the opinion and feelings of students have become one of the main aspects to be taken into account. A questionnaire was constructed to collect quantitative and qualitative data for future analysis.

The survey was carried out to the students that accomplished with success the management simulation II, optional to the internship, in the second semester of the last year (third) of the graduation in Accounting and Administration of Porto Polytechnic School, at the School of accounting and social sciences.

Taking into account the chosen research methodology, we collected the opinions of the students of two business simulation classes where the researcher was the professor. This group was chosen since the methodology required continuous monitoring and a high number of students per class. Thus, out of a general of 55 students, the sample is 50, only five students did not respond to the survey that was sent to them.

The objective of this study was explained to the students and they were asked if they would answer truthfully and with feeling to all the questions asked, to obtain real results - of these students - as to the feelings/perceptions they experimented during the period in which the classes were held only and exclusively at distance. The questionnaire link was sent to each of the students via Microsoft Teams platform, the same that was used for distance classes.

As for reliability and validity of data, the use of the triangulation technic was important in this study. Triangulation technique can include several methods for data collection and analysis. “The methods are chosen in triangulation to test the validity and reliability of a study depend on the criterion of the research.” (Golafshani, 2003) [15].

The triangulation of data, together with the analysis of the studies found in the literature review, results in the validity and reliability of the data obtained through the survey applied to students. In addition, the technique of content

analysis of open-ended questions aims at validating the data obtained.

Concerning data analysis techniques, triangulation of data, content analysis and statistical analysis of quantitative data were those chosen in this study. For this statistical analysis, statistical inference was used, but mainly descriptive statistics, due to the typology of questions present in the applied survey.

The survey was divided into two distinct parts, one of which was intended to know the sample regarding gender, age, residence and employment status. In the second part, the set of questions was designed to find out the students' views on distance learning, how they lived it for five months, and the evaluation process.

A detailed analysis of the answers given to the closed and open questions will be presented in the next section of this study.

3. Findings

The structure of the survey presents two parts: the first intends to know the students profile, while the second intends to know their opinion regarding the distance learning moment they experienced.

It includes 4 positive and 2 negative items in addition to demographic variables (age, sex, and level of education, digital tools, and the internet) and a question on the mode of education that students consider important to maintain after the "lookdown". The students' perceptions of online learning were assessed on a five-step Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The Cronbach α obtained showed that the questionnaire is highly reliable (α = 0.864, N = 50). The data were collected through an online survey using a Google Forms tool conducted over a period of 30 days from June for the Portuguese. It was conducted anonymously; no personal information has been identified. The researcher applied descriptive statistics (means, standard deviations), one way analysis of variance (ANOVA), and an independent t test for the interactions among the variables of the study using SPSS software (Statistical Package for the Social Sciences), version 24 for Windows 10.

Part I of the survey is about the profile of the students, their experience and expectations regarding future training.

More than 70% of the students are female and 84% live in Porto district. The majority of the students has between 21 and 30 years old and they are students from IPP-ISCAP in the final year of the graduation course of Accounting and Management (91%). Most of the students consider enrolling into a master (83%) in auditing, accounting and finances (60%).

Table 1 – Descriptive statistics sample characterization

Statistics								
		Gender	City	HEI	Course	Course year	Continue Studies	Field of Studies Cont.
N	Valid	50	50	50	50	50	50	50
	Omitted	0	0	0	0	0	0	0
Average		1,27	1,39	1,00	1,27	2,19	1,17	2,56
Median		1,00	1,00	1,00	1,00	2,00	1,00	2,00
Deviation Error		,448	,982	0,00	,448	,597	,380	1,390
Variance		,201	,965	,000	,201	,356	,144	1,931
Asymmetry		1,051	2,643		1,051	1,603	1,782	,712
Standard Asymmetry Error		,287	,287	,287	,287	,287	,287	,287
Minimum		1	1	1	1	1	1	1
Maximum		2	5	1	2	4	2	5

Questions related to the fact that the teacher-student interaction is distinct from face-to-face, motivated different answers. Fifty per cent of them consider that the interaction is rather different while present in face-to-face classes; two per cent consider that there is no difference. While 48 per cent, attest this issue depends on the involved parties. When asked whether the rules and academic rigour of distance learning are the same as in face-to-face education, majority of the students considered that they are not the same and that they depend on the teachers. Furthermore, 34% of the majority of the students (80%) consider that academic rigour depends on the teacher and the student. Regarding the number of hours of study provided by students, 78% responded that they devoted more than 3 hours of study per week, while 22% only devoted between 1 and 2 hours per week to study.

When asked about the main constraints experienced in distance learning, seventy-six per cent of students acknowledged that they are easily disconnected; about ten per cent also stated that the difficulty in reading from the monitor and/or mobile phone is one of the constraints encountered.

Some emphasize the fact that they have a higher individual workload and less support and others point to the fact that there are not enough support resources in certain course units.

Fifty-six per cent of students claim to have the necessary technological or digital skills when questioned about the constraint resulting from a lack of mastery of digital skills. The rest of them assume they do not have the digital skills needed for this distance learning (32 per cent) and the remainder have no opinion.

On the issue of workload over this period - 4 months, 76% of students say they had a high workload.

In general, they consider that distance learning was detrimental to their learning process, more than 50% of the students felt that their learning path was impaired. As for the reason of the previous answer, 34% assumed that could not maintain the learning stimulus; while 20% referred that, the interaction between teacher and students is not the same and 6% consider that their motivation has decreased significantly.

Most of the students consider that the digital means available were adequate meanwhile 34% of them acknowledge that the means were not adequate because they did not have their computer and because they did not have a stable Internet connection or even did not have one.

From the three technological tools at disposal, students considered Moodle the most effective one, followed by ZOOM and TEAMS.

The range of the mean values [3,60; 3,87] and the same median 4, states that for the three digital platforms used for distance learning the preference is quite similar. Students consider that the digital means made available were the appropriate ones with a mean of 1,4 and a median of 1, the answer was affirmative for 64,3% of them.

More than 70% of the students consider that teachers support was sufficient for the development of their knowledge and skills during this period. However, 28% don´t agree and those students state that the teacher does not give feedback on the work done (18.2%); the teacher talks too fast and does not clear up doubts about the "subject" exposed (9.1%).

The majority of students assume the loss of motivation in this period of distance learning and point out as the main factors the fact that they have no personal contact with colleagues (41.9%), the extended period of this teaching method (18.6%) and the lack of interaction with teachers (16.3%) and with colleagues (4.7%).

The major difficulty in distance learning was the fact that students felt easily disconnected while at distance lessons (75,7%) and some of them argued that difficulty in reading in computer or mobile phone was a strong constraint to be connected and motivated in distance lessons.

Students presented arguments such as: “The extension in time of this teaching method”; “The lack of face-to-face contact with colleagues”; “Easy distraction at home”; “The lack of interaction with the teachers made the lessons very monotonous” and “Lack of concentration and tiredness”, to point out the lack of motivation during this period (80%).

Concerning the question “Do you consider that in practical curricular units such as Project, Business Simulation Project, Internships, among others, you had difficulties in performing the tasks, since much of the work is done as a team?” students pointed out some aspects that hurt them in the accomplishment of the tasks attributed to them. Besides, concerning the development and completion of existing group activities in practical subjects, more than 45% of the students consider that the successful completion of the activities was impaired.

The main reasons raised by students were the inability to be face-to-face with colleagues and lack of commitment of some of them in having time do meet and discuss issues brought up in class, to solve the problems presented, in a team effort.

Would it have advantages in the continuity of face-to-face complemented by distance learning? The question intended to know what students felt, in general, during the distance learning and if they considered their maintenance in the future. From the 50 students who answered the questionnaire, 80% considered that distance learning should not be combined with face-to-face classes. However, 40% consider it if:

- “The theoretical lessons could have been given virtually, but in the practical lessons there is much to lose;
- I agree that at least 50% of the face-to-face lessons would facilitate teaching and for example, the questions to be asked could be solved in a direct and more effective manner;
- Complementary for support in clarifying doubts and tutorial classes”.

The analysis of the obtained results leads us to point out new paths in digital teaching and the need for implementation of complementary methodologies that may raise the motivation of those involved.

4. Results, conclusions and recommendations

Despite the existence of technologies, of AI, of a set of tools that allow distance learning very close to reality, there is no method – understood here as a combination of the use of various existing technologies and tools - that makes distance learning less intrusive, more egalitarian (in its access by all students), fairer and that is not the reason for discouragement in the continuity of the study, creating negative situations such as fraud, misperceptions about evaluation methods, fear that the rigour will be diminished and thus decrease the quality of teaching. In the absence of a distance learning model that can by itself keep the student "engaged", schools´ managers and teachers should work together to promote the suitable distance learning environment for each student.

Many past studies have found that students' perceptions of online learning are more positive than negative [16]. A greater number of these studies were conducted in developed countries and before the period of containment of COVID-19 where students were well prepared to use e-learning. Thus, the students or the participants of the sample of this study experienced several technical, psychological, and pedagogical obstacles to online learning. They found fault with the lack of personal computers, deficiency of communication with teachers, stress, lack of time, and the number of homework assignments.

Students refer that "there are curricular units that have not been harmed by distance learning and perhaps it would be advantageous to have this type of teaching. However, I think that what most hampers this teaching method is the assessments, since the course is very practical and the online assessment method does not value our reasoning."

The concern regarding a fair assessment method is a strong point highlighted by students, once they consider that distance assessment doesn't allow them to have a proper evaluation of their knowledge.

The existence of various ways of acting in distance education tailored by the teacher creates inequalities, and this cannot happen in a distance education that is intended to be complementary, when it is not in its entirety to face-to-face teaching.

Students refer the importance of face-to-face teaching combined with distance learning, "I consider face-to-face contact to be very important, especially at group working level. However, I don't think it's out of the question to complement face-to-face classes with distance learning." In addition, they consider that distance learning should be a complement to "(…) support in clarifying doubts."

On the other hand, some of the students consider distance learning more productive and a means to give them a higher autonomy in solving problems. "In the Business Simulation Project class, I think it became more effective the "distance" between student and teacher, as we were forced to look for the means to answer our questions, and only in the last case we got in touch with the teacher (which in class did not happen, we turned to the teacher many more times). It has made us more autonomous and responsible, and I would even say that we learn much more this way, and there is even more time to solve the proposed tasks (as opposed to the 3 hours available in person)."

The concern regarding emotional strength in teachers is an issue brought up by students "Just one last note to make since I saw several teachers psychologically worn out by the classes (since in many of them only the teacher had a camera on and microphone on, I think it should have been something mandatory from the beginning so that they never feel alone (...) which I think happened with some, which led to an overload on them)."

For distance learning to maintain quality, it is necessary to create strict rules. In addition, school management must have the right tools to regulate the process: creating new rules of action to apply to distance teaching, its' monitoring and evaluation of teaching work. Coordination must be strong and effective to foster the quality and continuity of teaching of excellence inside HEIs.

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