



## Higher education in a time of pandemic: what now, professor?

O ensino superior nos tempos de pandemia: e agora, professor?

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### Abstract

This article presents the results of a study carried out with teachers from Higher Education institutions in the city of Belém, state of Pará, from March to June 2020, a time when Brazil and the whole planet were facing the peak of a pandemic that hit the educational system and drastically impacted educational practices. Thus, the interest in understanding how professors have experienced this moment motivated this investigation, which aimed to analyze the perception of higher education teachers about the experiences and the impact on teaching arising from the implementation of Emergency Remote Teaching during the COVID-19 pandemic. Data collection and analysis procedures combined qualitative and quantitative techniques. Data collection took place through a standardized online questionnaire with open and closed questions. Thirty-nine professors who gave classes in the remote mode during the COVID-19 pandemic participated in the study. The results revealed the teachers' perception of the multiplicity and diversity of roles they assumed in these times of sanitary urgency. This is so that amid the chaos installed by the lack of planning or training, these education professionals displayed high and continuous capacity for adaptation, creativity and reinvention of, in spite of the obligation imposed by the functional condition of the respondents - teachers from private higher education institutions in Belém.

**Keywords:** Emergency Remote Teaching. COVID-19. Digital Information and Communication Technologies.



## Resumo

Este artigo apresenta os resultados de um estudo realizado com professores de instituições de Ensino Superior da cidade de Belém, no estado do Pará, no período de março a junho de 2020, período em que o Brasil e todo o planeta enfrentavam o pico de uma pandemia que impactou o sistema educacional e as práticas educacionais drasticamente. Assim, o interesse em compreender como os professores vivenciaram esse momento motivou esta investigação, que teve como objetivo analisar a percepção dos professores do ensino superior sobre as vivências e o impacto no ensino decorrente da implantação do Ensino Remoto Emergencial durante a pandemia COVID-19. Os procedimentos de coleta e análise de dados combinaram técnicas qualitativas e quantitativas. A coleta de dados ocorreu por meio de um questionário *online* padronizado com perguntas abertas e fechadas. Participaram do estudo 39 professores que ministraram aulas na modalidade remota durante a pandemia COVID-19. Os resultados revelaram a percepção dos professores sobre a multiplicidade e diversidade de papéis que assumiram nestes tempos de urgência sanitária. Tanto que em meio ao caos instalado pela falta de planejamento ou formação, esses profissionais apresentaram elevada e contínua capacidade de adaptação, criatividade e reinvenção, apesar da obrigação imposta pela condição funcional dos respondentes – professores do ensino superior privado instituições de ensino em Belém.

**Palavras-chave:** Ensino Remoto Emergencial. COVID-19. Tecnologias Digitais da Informação e Comunicação.

## Introduction

The year 2020 brought to Brazilian society the challenge of facing a crisis that hit public health worldwide, originating in the Asian continent at the end of 2019. The pandemic of the disease which became known as COVID-19 had the first cases identified in Wuhan, in the province of Hubei, People's Republic of China. The disease, unknown at that moment, immediately became the focus of scientists from all over the planet. The Chinese soon identified its causative agent, a new virus from the coronavirus family, SARS-CoV-2 (GORBALENYA et al., 2020). In Brazil, the first confirmed case dates from February 26, 2020, in São Paulo, but in a short period of time, the disease spread to citizens of all regions and states in the country. Since then, new terminologies, behaviors, and habits have had to be incorporated by the entire Brazilian population.

In addition to the term “pandemic”, expressions such as “social distancing”, “quarantine”, “coronavirus”, “alcohol-based hand sanitizer”, “lockdown”, “mask”, “contagion”, “flattening the curve” among many others started to be repeatedly used. Immediate recommendations were provided on care measures to prevent the spread of this dangerous and contagious disease not yet completely understood, arising many questions and few answers among health professionals and researchers.

In this scenario, the main one of the guidelines in force is to avoid physical contact, social interaction as well as agglomerations. As a consequence, from mid-March 2020, Brazilian states and cities stopped their non-essential activities at different levels and times. All of this took place under the aegis of a political crisis, which reached its nerve



point in the midst of the pandemic, with successive exchanges of leaders in the Ministry of Health, for example, which made it difficult to define, coordinate and implement the necessary sanitary measures in an orchestrated and efficient way at the national level (TROCA, 2020; ZYLBERKAN, 2020).

Immersed in this scenario, the educational system adopted the social distancing measures determined by state and municipal governments. Thus, primary, secondary including higher education institutions closed their doors and, therefore, had to seek compensatory strategies for the absence of face-to-face classes. These strategies were to be different from those adopted in 1918 due to the Spanish flu pandemic, when the choice of the government was to automatically approve, by decree, all students in the Brazilian educational system (CARVALHO, 2020).

Because of the current scientific-technological advances, the incorporation of Digital Information and Communication Technologies (DICT) into the teaching practices of part of the Brazilian educational institutions has been intensified, especially in the private network. The COVID-19 pandemic posed a challenge to educational systems worldwide: the need to deal, within a short time, with a huge diversity of technological tools for carrying out educational actions remotely. At the same time, a new demand for training emerged among many education professionals, in order to develop skills and competencies to teach in this new reality of social relationships. .

Modelski, Giraffa, and Casartelli (2019, p. 6) draw attention to the importance of DICT in contemporary teaching practices, by stating that:

[...] the role of a teacher once thought of as a transmitter of information, does not make sense in the current context anymore, because the needs are different. Thus, the training of teachers, whether in initial or continuing education, requires the articulation of the needs of the social context with pedagogical practices. It is an articulation that involves skills related to the use of DT [Digital Technologies].

Thus, schools and their actors - teachers, students, technicians, administrators, and parents - had to reinvent themselves to conclude the school activities in 2020 without major losses. Many private institutions, state, and municipal education departments started to use the available DICT to adapt the teaching-learning process to the emergencies of the pandemic in record time. Therefore, teachers had to change the way they relate, conceive and practice teaching, as they had to “redesign their role and their responsibility in the current school” (IMBERNÓN, 2010, p. 36).

In this situation of a health crisis, students and teachers had to deal with the unusual insertion of remote education on a large scale. In turn, the situation sheds light on important aspects of formal education, such as the role of the teacher, the role of the student, and teaching and assessment strategies, thus raising the need to rethink these elements and so many others based on the logic of DICT.

In a study recently published in the United States of America, Hodges et al. (2020) highlight the relevant difference between well-planned and implemented teaching activities and those that are being developed today in response to the world crisis that our society is experiencing. For the authors, languages, times and possibilities are different between the two situations. The understanding of these differences must be established as a starting point to overcome prejudices and the resistance to the



adoption of what is being defined as Emergency Remote Teaching (ERT), precisely to emphasize the aforementioned distinction between teaching today practiced in response to an emergency and the online distance education, guided by principles and foundations.

Given the above, the current transformation of the teaching format, abrupt and without the proper planning and preparation of institutions and personnel, may consolidate conceptions about the weaknesses or limitations of ERT, which is based on the use of DICT. Thus, reflections and decisions arising from the ongoing process must include the sense of perceiving this moment as transitional, so that from this perspective, the experiences and learning may come to support a more definitive process before this eminent and probably inevitable new world order concerning the educational process.

Another factor of great relevance in the Brazilian reality is the marked social inequality and its predictable impacts on the implementation of ERT. Recent data from a study carried out by the Regional Center for Studies for the Development of the Information Society (CETIC.BR, 2018), which assists the Brazilian Internet Steering Committee in implementing projects and decisions, point out that 39% of Brazilian households do not have internet access for lack of a computer. Among the households visited, it was verified that in 60% of those located in urban areas and 65% of those located in rural areas, the reason given for the lack of access to the internet would be the high price of the service. These findings indicate that the adoption of ERT may constitute another moment of exclusion for children of workers in the urban periphery and rural areas in Brazil.

In any of the scenarios, the teacher will always play an important role, as the inclusion of the internet in education depends on how skilled they are in using this technology, to introduce it in their daily routine just in the same way that teachers, in other times, introduced the first books in their schools, having to start to deal with knowledge differently, incorporating other DICT (MORAN, 2012).

As a result of the reflections presented so far, the following concern motivated this study: How are higher education professors dealing with the incorporation of DICT in their teaching practices in the ERT format imposed by the COVID-19 pandemic?

Responding to this question, we analyzed here the perception of higher education teachers about the experiences resulting from the implementation of the ERT during the COVID-19 pandemic and its impact on the teaching practice.

## **Methodological Procedures**

This study has a descriptive approach, which is aimed at describing the characteristics of specific populations and phenomena to examine populations' opinions, attitudes, and beliefs (GIL, 2008). The case study method was chosen, as the object of the study is data or facts gathered from the reality of a particular group or community (RAMPAZZO, 2002). In June 2020, professors from different areas of knowledge were consulted about their view of ERT. All of them taught remotely at private higher education institutions in Belém, the capital city of the state of Pará, during the COVID-19 pandemic.



Data collection and analysis procedures combined qualitative and quantitative techniques, assuming the perspective of mixed methods (JOHNSON; ONWUEBUZIE, 2004; CRESWELL, 2010).

Data collection took place through a standardized online questionnaire with open and closed questions prepared in the free software Google Forms. In addition to respecting social distancing and other measures to combat and control the pandemic, this strategy, according to Faleiros et al. (2016), enhances and speeds up the research process, as well as allows quick and efficient contact with study participants.

The instant messaging application WhatsApp was used to contact the professors who participated in this research. Participants were approached individually and through groups of professors from Higher Education Institutions (HEI), which provided space for the dissemination of this study and its instruments. In this sense, the sampling adopted was of the intentional non-probabilistic type (ALBUQUERQUE; LUCENA; CUNHA, 2010). Upon contact, the researchers sent a text presenting the theme, objectives, risks, and potential benefits of the study, along with the link to access the questionnaire. Before having contact with the items covered in the questionnaire, the respondent had access to a page with a virtual Informed Consent Form (ICF), consisting of a page with clarifications about the research followed by a request for authorization to use the data for scientific purposes.

The questionnaire was divided into four sections. The first addressed demographic attributes to characterize the respondent. Then, there were two sections with items to be responded to using a five-point Likert Scale, varying from "totally disagree" to "totally agree", represented by the numbers 1 and 5, respectively. The statements were prepared to investigate the perceptions of professors about the ERT, regarding their experiences and the barriers that, in their view, could hinder the full use of this teaching modality in the academic environment. The last section consisted of open-ended questions inviting the respondent to make a general assessment of ERT, mainly concerning its limitations and potential, and offer suggestions for improvements. The average filling time was 10 to 15 minutes.

In the treatment and analysis of quantitative data, data were first organized through simple tabulation and then subjected to descriptive statistics to obtain frequency distribution, percentages, and means using the Microsoft Office Excel® 2016. The mathematical model of average ranking ( $IP = \sum Vi \times Nij / \sum Nij$ ; where  $IP$  is the intensity of perception of professors;  $Vi$  is the general score attributed by them who have the point of view  $i$ ; and  $Nij$  is the number of professionals who ensure the point of view  $i$  in the factor investigated  $j$ ) was used to establish the intensity with which the situations presented in the items of the questionnaire were consolidated in the teachers' perceptions and experiences.

The qualitative data collected in the open questions, in section four of the questionnaire, were analyzed through discursive textual analysis, obeying the cycle composed of three moments: unitarization, categorization, and communication, as defined by Moraes and Galiazzi (2012).

To present the results, graphs and tables were created based on the established categories and the calculations performed.





## Results and Discussion

### Professors: presentations and approaches

Thirty-nine higher education professors who taught remotely during the COVID-19 pandemic, specifically from March to June 2020, participated in this study. Twenty (51%) were male and 19 (49%) female; their ages ranged from 24 to 69 years, with an average of 38 years. All were residents of the Metropolitan Region of Belém.

Regarding academic training, the majority had a bachelor's degree (74%) and a master's degree (69%). The academic backgrounds were diversified: 36% were specialized in engineering and 28% in health, and the remaining 36% were distributed in several fields, including natural sciences (chemistry, physics, and biology), administration, accounting sciences, journalism, and others.

Professors worked in the private sector and had been teaching for 1 to 48 years, with an average of 10.7 years. The majority claimed a moderate frequency of use of the New Information and Communication Technologies (NICT) in on-campus teaching (59%) and informed they had already participated in training courses on remote teaching or applications of NICT in education, whether during undergraduate or postgraduate training, events, or advanced training courses (54%).

It was observed that 97% of the participants considered ERT to be the best alternative for education during the pandemic. Professors argued that, in the face of the crisis, ERT was the only viable alternative for maintaining contact with students and not interrupting the teaching-learning process: “[...] otherwise there would be no continuity”, “[...] made virtual contact between professor and student possible”, “[...] maintained the learning of the student”. It is worth mentioning that many of these professors were the same ones who affirmed rarely or never having used NICT in face-to-face teaching and/or received training on ERT before the pandemic. This raises a commitment on the part of the educator not give up on students, even under extraordinary circumstances that require adaptations and flexibilities from the teaching practice, but at the same time, causes concern because of the insufficient experience in using platforms and implementing their teaching strategies, with an ultimate impact on the effectiveness of the modality.

In this context, Arruda (2020) states that, without remote school activities, educational institutions would be weakened after the COVID-19 pandemic and the diverse inequalities would grow even further. For the author, “being away from school and yet in daily contact with your pedagogical actions is less harmful than not being in contact with the school at all over many months of confinement” (p. 264).

When asked about the applicability of remote education to a scenario without a pandemic, the respondents were divided into two large groups: those who agreed that the best alternative would be to associate remote education with 1 or more face-to-face monthly (41%) or half-yearly (8%) meetings; and on the other side, those who considered that remote education should only be a complement to classroom teaching, due to its low effectiveness (39%). The others reported other perceptions, such as



“remote teaching as support for face-to-face teaching, with frequent virtual meetings with tutors”; and “implementing it only when classroom teaching is not possible”.

## A look at their own experiences: chaos in teaching or teaching in chaos?

In order to classify the intensity of the professors’ perception of the reality of ERT and its toll on the teaching work, the average ranks were conformed to the following scale: “low”, 1–2.49; “Moderate”, 2.5–3.49; and “high”, 3.5–5 (Box 1).

Box 1 - Intensity of perception about the reality of emergency remote teaching and its reflexes on the teaching work

Affirmation	IP	Degree
1. I need to further improve my skills to work with Remote Teaching.	4.28	High
2. I work more in remote teaching than in the classroom.	4.28	High
3. In addition to the online platform, I use other technologies to help to address the contents of my course.	4.23	High
4. Remote classes require more effort and planning.	4.18	High
5. I believe that Remote Teaching is a worldwide trend in education and should remain even after the pandemic.	4.13	High
6. It is possible to use Remote Teaching in most theoretical courses.	4.03	High
7. I feel that my remote class is significantly different from the classroom class.	3.97	High
8. The Remote Teaching that I seek to implement allows free, asynchronous, dynamic, and creative learning.	3.87	High
9. I have the necessary skills to work with Remote Teaching.	3.64	High
10. With Remote Teaching, I place more emphasis on content than on the teaching-learning process.	3.62	High
11. I joined other professors to conduct multi/interdisciplinary discussions on digital platforms.	3.49	Moderate
12. The learning assessment techniques I use are effective and satisfying.	3.28	Moderate
13. Students adapted without great difficulty to the digital platform and the other technologies used.	2.85	Moderate
14. Remote Teaching should be considered a priority at any level and modality of our education system.	2.64	Moderate
15. I feel that students are better prepared to handle Digital Platforms than I am.	2.33	Low
16. It is possible to use Remote Teaching in most practical subjects.	2.15	Low

Legend: IP = Intensity of Perception.

Source: research data

The statements with a higher degree of perception (4.28) lead to the conclusion that professors recognize the need to improve to better work with ERT (statement 1) and, in a way, denounce that this modality brought an increased work demand, and consequently working time (statement 2).

About this, the professors reported that at the beginning of the remote activities, they faced considerable difficulties to adapt to ERT, as they had limited experience with the use of DICT in the teaching-learning process that they developed face-to-face. This reality is a reflection of problems arising from the career of higher education professors



itself, since many come from purely technical, bachelor's degree, and technologist courses, in which the teaching activity is underestimated. Generally, the preparation for teaching is restricted to the "teaching internships" of graduate programs or simply reflects the learning experienced in their own teaching practice. In addition, the lack of time to attend continuous training courses during working days, non-use of self-teaching, and lack of motivation of teachers (BELLONI, 2003) are factors to be considered. Certainly, the pandemic contributed to reducing the chances of many professors entering the limbo of the professional gap.

Speeches such as "it seems that the work with remote teaching has no end"; "with remote teaching we had to become teachers, psychologists, computer technicians, administrative-financial assistants, conflict managers, etc., while in person, I would teach my class and that was it"; "in all my social networks and messaging apps, no matter the day or time, there was always a student asking or complaining about something" were frequent in the responses to the open questions. This demonstrates the multiple competencies that teachers needed to have during ERT, which ratifies the sense that remote education involves full-time dedication.

In a way, ERT made the teaching-learning process more humanized during the pandemic, as it brought professors and students closer together through DICT, but, without a doubt, turned it more exhausting for the professionals involved. This reality does not seem to be restricted to teaching professionals only. According to a survey of more than 800 Brazilian professionals by Robert Half, the first and largest specialized recruitment company in the world,<sup>1</sup> 52% of the respondents believed they were working more after adopting telework/home office. Therefore, it is necessary to establish a schedule of hours to better serve students and fulfill other obligations of the teaching work in order to avoid overwork, which can affect both physical and psychological health.

In the same direction, the professors surveyed said remote classes require more effort and planning. It is clear that the low mastery of DICT has made them overwork in order to accomplish the tasks of giving classes; mastering the tools of teaching platforms; knowing and learning how to use other digital resources in order to better illustrate the contents of their courses and search for proposals to diversify the pedagogical approach; and evaluate tests, among other activities, in a sudden/emergent way. All of this made this perception emerge.

The perception of professors about the difference in the adequacy of ERT to the development of theoretical and practical activities is noteworthy. In the view of the participating in the study, there is greater feasibility of carrying out theoretical (high degree of perception in item 6) than practical activities (lower degree of perception in item 16). As a consequence, professors emphasized that the professional training process can be seriously hampered by the use of remote methods only, because they presuppose a low adherence to the replacement of practical classes, especially if these classes are not linked to evaluation processes and/or are carried out too long after the remote theoretical classes.

As an alternative to overcome the difficulties of carrying out practical activities during ERT, some institutions have used remote laboratories and applications or online platforms for the performance of experiments and observation of phenomena.

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<sup>1</sup> Information available at: <<https://www.roberthalf.com.br/blog/tendencias/home-office-agrada-maioria-como-sera-volta-ao-escritorio>>. Accessed: August 18, 2020.





However, we stress that teachers need to feel confident in relation to the pedagogical skills and use of DICT (SOUZA; SCHNEIDER, 2016) in order to implement these tools during classes. This requires time for teachers to train and develop skills, an element that, in view of the situation, lacked at the implementation of ERT. Moreover, Tulha, Carvalho, and Coluci (2019) noted that research evaluating the effectiveness of remote laboratories in student learning in the scientific community is missing, further blurring the understanding of the impact of the appropriation of this tool in the teaching-learning process.

The moderate degree observed in item 11 reinforces the potential and the need to develop poly/inter/transdisciplinary processes in higher education, even in times of ERT. Digital information and communication technologies bring several advantages in this direction (AMEM; NUNES, 2006). They include, for example, the expanded possibility to work in partnerships, in which two or more professors can teach classes in the same subject at the same time, working with different or complementary approaches, and to have invited professors participating in the classes, since travel costs are reduced. In this way, students would have the opportunity to know the multiplicity of points of view about a phenomenon or the opportunity to help to solve a real problem, for example.

The perception of professors in statements 13 and 15 reveals the weak political investment and the limited initiatives for technological literacy. Despite the fact that we live in a digital era developing at full speed, and that the majority of students are native to it, it is possible to infer that a considerable part of the students presented difficulties in the basic handling of digital tools. This observed scenario contrasts with the discourse of authors such as Cunha et al. (2012), Monereo and Pozo (2010), who state that students generally relate to DICT without any worries, fears, or difficulties.

It is possible that such a context is more visible in higher education, an educational level in which there are marked distortions in the age group of students per class, which is rare in regular basic education. In higher education, there are students who have recently graduated from high school, and students who have not attended formal educational processes for decades in the same groups.

Basically, the same reality is detected among professors. On the one hand, there are newly graduated professionals, natives to the digital era, and many are aware of the educational trends towards the use of DICT; and on the other hand, the experts, with many years in the teaching career, specialists in their fields and who frequently use traditional pedagogical practices of content transmission. Hence, it is necessary for students and professors to accept the academic environment as an intergenerational space for the exchange of knowledge, favorable to deep processes of co-education (CACHIONI; AGUILAR, 2008).

## **Barriers, Limitations, and Possibilities of Emergency Remote Teaching: what now, professor?**

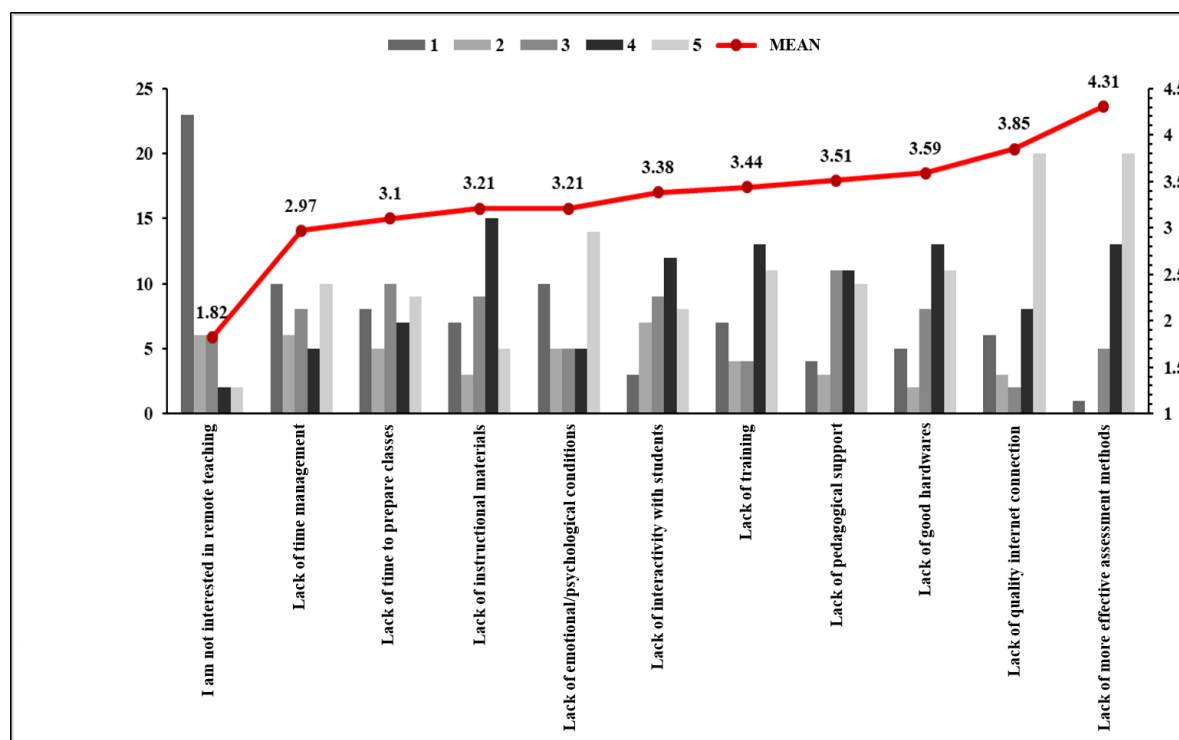
In the third section of the questionnaire, 11 possible barriers to ERT were listed in the virtual questionnaire. In this sense, the professors expressed the extent to which the barriers were consolidated in their experiences, according to the pre-established scale of agreement. There was also space for them to list other barriers that had not been mentioned in the list. In the fourth and last section, open-ended questions gave them



the opportunity to provide a general assessment of ERT, allowing them to express their perceptions about the limitations and potentialities of the new strategies incorporated into their teaching practices, as well as point out suggestions for its improvement.

Among the obstacles faced by professors during the implementation of ERT, the results pointed first to the lack of effective evaluation methods, then to the low quality of the internet connection, and the deficient hardware resources (Graph 1).

Graph 1 – Barriers to ERT

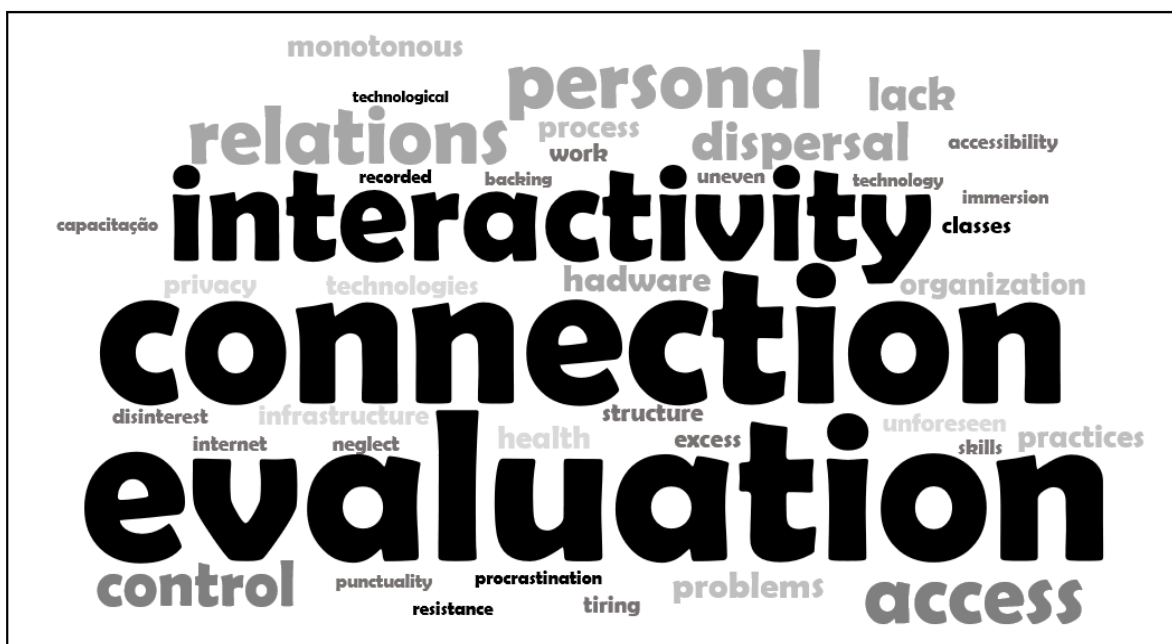


Source: research data.

These results converge with the limitations of ERT pointed out by the teachers in the fourth section of the questionnaire, whose textual discourse analysis pinpointed some expressions, particularly connection, evaluation, and interactivity (Figure 1).



Figure 1 - Word cloud formed from the teachers' responses about the three main negative points of ERT.



Source: research data.

Regarding the evaluations, with the suspension of face-to-face activities during the first semester of 2020 and, in some cases, also some months of the second semester, higher education institutions ended up carrying out not only classes but also evaluative activities remotely. About this, objective measurement methods were overrated, likewise in the traditional setting. The institutions to which the professors were affiliated adhered, almost adamantly, to the application of objective exercises and tests and/or self-assessment tests, using software for this purpose.

In the view of Pérez-Gomez (2015), such evaluation methods favor lower-order thinking processes, such as the reproduction of information and memorized data; they shy away or are blind to understanding, research, evaluation, creativity, along with innovation, which are higher-order mental processes. Therefore, they do not explore the constitution of the basic competencies of human beings (knowledge, skills, attitudes, emotions, and values), or the systems of understanding, decision-making as well as performance.

In many cases, professors claimed that they had no alternative but to apply the evaluation model established by institutional management. On the other hand, even when they had the autonomy to elaborate their assessment criteria and instruments, many resorted to written tests, for practical reasons, by force of habit, or because they did not have the ability to use the platforms for evaluation purposes. This and other decisions, such as the tiresome application of multiple-choice exercises also the methodological supremacy of expository lectures, even in remote teaching, highlight other barriers highly perceived by professors, such as the lack of training for the use of NICT in teaching and the lack of provision of pedagogical support service by the institutions (Graph 1).

This way, the formative, holistic and tutorial character, as well as flexibility, plurality, transparency, relevance, confidentiality including self-assessment, basic requirements for a quality educational assessment in the digital era, as proposed by Pérez-Gomez



(2015), in which ERT is inserted in the pandemic times, according to the data presented, were not present in the practice of many professors. Once again, products were overvalued and processes overlooked.

In this context, there is a compelling need for investments in teaching updating programs so that professors can develop, among other activities, assessment strategies for learning and as a learning tool itself, in a personal, challenging, relevant, creative, innovative, inventive way, that stimulates the divergent thinking of higher level so necessary in the contemporary world and in the digital era, as defended by Pérez-Gomez (2015). However, as stated by Kenski (2012), professors should not be pressed to adopt self-training without having been offered the basic conditions for it, with regard to the necessary remuneration, time, and technologies; it is necessary to create a new school culture towards the training of these professionals for digital education.

The high level of perception of the lack of quality internet connection and computers, as well as other technologies with good processors, reflects the abrupt way in which ERT was implemented. As social distancing measures prompted, among other things, the closing of non-essential businesses, many professors did not have the time or financial resources to hire new internet packages and/or buy equipment to facilitate the progress of remote classes. Although the present study does not extend to the reality of students, it is assumed that the same applies to this audience since 34% of Brazilian households have neither a computer nor access to the Internet;<sup>2</sup> it is logical that students were unable to acquire these things in record time.

Once “equal access to technology [...] is a fundamental principle to guarantee the universal right to education” (SILVA; CAMARGO, 2015, p. 180), especially in times of pandemic, ERT cannot be considered fully feasible for professors and students in most of the realities in which it was applied. This likely reverberated in a low quality of educational services and leveraged diverse inequalities, dissatisfaction, evasion and, particularly in the scenario of higher education, professional training below market requirements.

More than half of the professors (51%) totally or partially agreed that the lack of interactivity with students is an important barrier in ERT. This is surprising data, given that one of the main characteristics of NICT is the interactivity made possible by the tools of the internet and virtual applications/platforms. Part of the problem may lie in the way the class is conveyed together with the students' own interests.

Remote classes, in almost all courses that adhered to this modality, worked in a similar way to that reported by Kenski (2012). The professor would hold a videoconference on an online platform (Microsoft Teams, Zoom, Google Meet, etc.) with the camera close to his face while mirroring the class material (slides), as he would speak to an audience of avatars<sup>3</sup> (rarely students turn on their cameras), supposedly attentive and silent. Many professors would even try to interact by asking questions to instigate students to speak, but they would give up for the monotony, as expressed in the report of one of the respondents: “I have noticed the little interaction of students, which makes the dynamics of the class and the teaching-learning process itself difficult. This makes me and them uncomfortable. Sometimes it seems that the discouragement is generalized”.

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<sup>2</sup> Information available at: <<http://data.cetic.br/cetic/explore>>. Accessed: July 12, 2020.

<sup>3</sup> Digital character created and personalized individually; doll that works as the person's digital version.



There are, thus, two very clear problems. The first is the use of technology for a traditional, monotonous, and tiring “teaching”, but which could be perfectly performed dynamically, with camera movements, quick cuts, debates along with dialogues, as explained by Kenski (2012). The second is the mood and the predisposition of the students to participate in the class to learn; in this case, ERT had several complicating factors. Many students who were, in a way, forced to attend remote classes had already had unsuccessful experiences with conventional distance learning and migrated to classroom teaching; they did not have quality internet access or had no discipline to attend live classes. With this scenario, the perception of professors regarding the lack of interactivity is consistent.

In the same direction, most of them cited interactivity as one of the main positive points of ERT (Figure 2).

Figure 2 - Word cloud formed from the teachers' responses about the three main positive points of ERT.



Source: research data.

The above findings allow us to infer that many of these teachers do not know how to use or have serious difficulties in using the remote education tools to build a pedagogical practice that adds the value of interactivity to the modality, even though they acknowledge that digital platforms are intended to facilitate and promote interaction between individuals. The lack of training as well as familiarity with the handling of NICT in teaching thus becomes evident.





Notwithstanding the difficulties along with limitations, the professors emphasized such barriers have not prevented them from embarking on the attempt to learn new codes and languages that would enable them to enter this new and unexpected reality. In fact, the barrier “I am not interested in remote teaching” was the one that received the lowest average rating, with the vast majority of respondents totally (60%) or partially (15%) disagreeing. This was evident also in the following transcribed reports: “Remote teaching brought a good opportunity to reinvent me as a professor”; “Remote teaching took us by surprise and it was a huge learning experience, having to deal with this difference in teaching”.

Among other aspects, this scenario may appear as an emblematic moment for teaching professionalism, as the adaptations imposed by the COVID-19 pandemic affected the social and psychological dimensions of professors, who, as social actors, “give sense as well as meaning to their acts, and live their role as a personal experience, building knowledge and a culture that is proper to the profession” (TARDIF; LESSARD, 2005, p.38). Thus, as a result of this dialectical relationship with the current social, cultural, and institutional context that delimits the teaching practice, professors may be moving towards a redefinition of their teaching actions.

## Final Considerations

Despite the new and challenging character of ERT for the professors in this study, there are indications that this modality has aroused or increased the interest of many of them in using DICT along with online teaching. The data of the study also indicated their perception about the multiplicity and diversity of roles they took on in this untimely digital era, in such a way that, even amid the chaos faced by the lack of planning or training, these education professionals unequivocally displayed a high and continuous capacity for adaptation, creativity, reinvention, in spite of the obligation imposed by the functional condition of the respondents – professors from private higher education institutions in Belém. It is evident, therefore, that varied professional actions are the result of adaptations to the established conditions and adoption of attitudes and strategies for change that are characteristic of the process of building teaching professionalism.

In contrast, the experiences and perceptions of professors from public higher education institutions, who had their academic activities totally or partially paralyzed at some point in the pandemic, could lead to other results, discussions, and reflections. Further investigations with this public are to be fruitful. The investigation of the reality of these professionals in the face of the challenges of ERT may lead to the identification of similarities, particularities, new challenges and perspectives.

It is also important to reflect on the fact that all human beings are subject to the most diverse deadly threats, from nuclear weapons to the explosion of new viruses or old strengthened microbes. In this sense, it is necessary to learn from the difficulties already lived to overcome so that in unfortunate future emergencies, superior and less aggressive actions of the *modus operandi* may be adopted. It is believed that the ERT of the future (which may emerge with another nomenclature) will provide other teaching and student experiences, as well as will have another structure, and organization to present difficulties of its own context, but it will certainly reflect the advances and the lessons learned from the COVID-19 pandemic.



For this reason, data from studies like this, carried out at the heart of a historic moment, can significantly contribute to substantiate intervention plans, actions, and strategies aimed at fostering improvements unveil limitations in the process of initial and continuing teaching training, in the infrastructure of HEI as well as in the standardization along with regulation of the use of DICT and teaching practices in the light of a possible continuous implementation of hybrid teaching.

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