



Difficulties of higher education professors with emergency remote education in the pandemic: state of knowledge

Natalia Neves Macedo Deimling^{1*} and Aline Maria de Medeiros Rodrigues Reali²

¹Universidade Tecnológica Federal do Paraná, Via Rosalina Maria dos Santos, 1233, 87301-899, Campo Mourão, Paraná, Brasil. ²Universidade Federal de São Carlos, São Carlos, São Paulo, Brasil. *Author for correspondence. E-mail: natanema@gmail.com

ABSTRACT. This article aims to identify and analyze the main results and considerations of the articles published between the years 2020 and 2021 on the impacts of Emergency Remote Teaching on the training and work of professors of Brazilian Higher Education Institutions, giving special focus to the limitations, difficulties and challenges faced by them in this context. For that, 31 articles were selected available in 4 scientific repositories, analyzed from the interpretative-critical and problematizing perspectives. This is an exploratory, descriptive, and analytical research with a qualitative approach, bibliographic and state of the knowledge type. Among other aspects, it was observed that the difficulties of professors are related to the lack of education to work with teaching mediated by Digital Information and Communication Technologies, the negative impacts of work and remote teaching on the mental health of the people involved, work overload, scarce or absent financial, technical, pedagogical and psychological support from institutions to professors for the development of work and remote teaching, the perception of a decrease in the quality of teaching and learning and the absence of public policies and material conditions that favor full reach of education purposes.

Keywords: emergency remote teaching; professor education; professor work; higher education; pandemic.

Dificuldades enfrentadas por docentes da educação superior brasileira com o ensino remoto emergencial em tempos de pandemia: estado do conhecimento

RESUMO. O objetivo deste artigo consiste na identificação e análise dos principais resultados alcançados e considerações traçadas pelos artigos publicados, entre os anos de 2020 e 2021, sobre os impactos do Ensino Remoto Emergencial para a formação e o trabalho de professores das Instituições de Ensino Superior brasileiras, com enfoque às limitações, dificuldades e desafios enfrentados pelos docentes nesse contexto. Para tanto, selecionaram-se 31 artigos disponíveis em 4 repositórios científicos. Trata-se de uma pesquisa exploratória, descritiva e analítica de abordagem qualitativa, de cunho bibliográfico e do tipo estado do conhecimento. Entre outros aspectos, observou-se que as dificuldades enfrentadas pelos professores relacionam-se à falta de formação para atuação no ensino, mediado por Tecnologias Digitais da Informação e Comunicação, aos impactos negativos do trabalho e do ensino remoto em relação à saúde mental dos sujeitos envolvidos, à sobrecarga de trabalho, ao escasso ou ausente suporte financeiro, técnico, pedagógico e psicológico por parte das instituições aos docentes para a realização do trabalho e do Ensino Remoto, à percepção de diminuição da qualidade do ensino e da aprendizagem e à ausência de políticas públicas e condições materiais que possam favorecer o pleno alcance dos objetivos de formação.

Palavras-chave: ensino remoto emergencial; formação docente; trabalho docente; educação superior; pandemia.

Dificultades que enfrentan los profesores de educación superior brasileños con la enseñanza remota de emergencia en tiempos de pandemia: estado del conocimiento

RESUMEN. El propósito de este artículo es identificar y analizar los principales resultados alcanzados y las consideraciones esbozadas por los artículos publicados entre los años 2020 y 2021 sobre los impactos de la Enseñanza Remota de Emergencia en la formación y el trabajo de los docentes de las Instituciones de Educación Superior brasileñas, con especial atención las limitaciones, dificultades y desafíos que enfrentan los docentes en este contexto. Para ello, se seleccionaron 31 artículos disponibles en 4 repositorios científicos. Se trata de una investigación exploratoria, descriptiva y analítica con enfoque cualitativo, de

tipo bibliográfico y de estado del conocimiento. Entre otros aspectos, se observó que las dificultades que enfrentan los docentes están relacionadas con la falta de formación para trabajar con la enseñanza mediada por Tecnologías Digitales de Información y Comunicación, los impactos negativos del trabajo y la enseñanza remota en la salud mental de los sujetos, la sobrecarga de trabajo, el escaso o nulo apoyo financiero, técnico, pedagógico y psicológico de las instituciones a los docentes para realizar el trabajo y la enseñanza remota, la percepción de una disminución en la calidad de la enseñanza y el aprendizaje y la ausencia de políticas públicas y condiciones materiales que puedan favorecer la plena consecución de los objetivos formativos.

Palabras-clave: enseñanza remota de emergencia; formación de profesores; trabajo docente; educación universitaria; pandemia.

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Introduction

Let us simply start where we are: in the middle of the confusion (Hillman, 1993, p. 142).

Since the beginning of the COVID-19 pandemic, a disease caused by the new coronavirus (Sars-Cov-2), different studies and research have been published to analyze and share, among other aspects, data and reflections on the impacts of Emergency Remote Education (ERE) on Brazilian school education. According to Cunha, Silva, and Silva (2020), ERE can be characterized, in the context of the pandemic, as an Emergency teaching model¹, developed non-face-to-face due to the geographical distance between professors and students, using non-face-to-face activities, mediated or not by Digital Information and Communication Technologies (TDICs). Among the strategies adopted by different education networks to develop this teaching format, video classes, content organized on virtual teaching-learning platforms, social networks, and email stand out as alternatives suggested by the National Education Council in its Opinion No. 5/2020 (Brasil, 2020).

The legal guidelines produced to date, combined with the pressures of emergency and remote work, have directly impacted professor training and work at different levels and teaching modalities. Very quickly, millions of professors were forced to replan their activities and adapt to a work and study routine different from that organized at the beginning of the school year. However, professors were not prepared for this new reality at the same speed as the changes required.

This situation is aggravated when considering that, in a short period, professors had to adapt to a new work model, assuming, in many cases, the burden of their technological training and the costs of internet networks for developing remote work. Although TDICs, as a complementary aspect of teaching activity, are presented as essential tools for teaching, the exceptional nature of ERE has brought new and more complex challenges to professors, including those related to these technologies (Magalhães, 2021).

Considering this scenario and the relevance of studies that carry out mappings to uncover and examine the knowledge already developed, pointing out the approaches and gaps that exist on a given topic, an exploratory, descriptive, and analytical study was conducted with a qualitative approach, of a bibliographic nature and of the state of knowledge type (Romanowski & Ens, 2006; Lüdke & André, 2013), whose objective is to identify and analyze the main results achieved and considerations outlined in the articles published, between 2020 and 2021, on the impacts of Emergency Remote Education on the training and work of professors at Brazilian Higher Education Institutions (HEIs), with a focus on the limitations, difficulties and challenges faced by Higher Education professors in this context.

Since the beginning of the pandemic, different studies and research have been published to analyze and socialize discussions about the impacts of ERE on Brazilian school education. In a survey carried out between May and September 2021 in the leading academic and scientific repositories and indexers (SciELO, CAPES Journal Portal, Scopus, and Google Scholar), a significant number of articles in Portuguese published between 2020 and 2021 were found that have ERE in Higher Education as a topic of study. The search was carried out using the following descriptors and Boolean operators to establish criteria for selecting the material that makes up the *corpus* of the state of knowledge of this study: (1) Educação Remota (Remote Education); OR (2) Ensino Remoto Emergencial (Emergency Remote Education); AND (3) pandemia (pandemic); OR (4) COVID-19 OR (4) Sars-Cov-2 AND (5) Ensino Superior (Higher Training)r; OR (5) Educação Superior(Higher

¹ While some authors consider ERE a teaching modality, it does not follow current educational legislation—unlike Distance Education, which is recognized as an educational modality with its regulations.

Education) AND (6) professor (professor); OR (7) docente (teacher). The same strategy was followed in all search platforms to ensure scientific rigor.

The material selection was initially established based on the fields 'keywords,' 'subject,' and 'abstract.' Since Google Scholar indicates an extensive list of materials of different types (articles, books, book chapters, studies published in conference proceedings), and considering that this database presents the list of results based on the relevance of the studies (most accessed and/or most cited), we chose to access the first 100 results presented by this database. After reading the abstracts of these studies, we selected those that immediately met the inclusion criteria of the research: articles published in journals between 2020 and 2021 that discuss, in their results and considerations, the professor training and/or work in Higher Education regarding the context of ERE due to the COVID-19 Pandemic. Based on this criterion, 26 articles available in this database were selected.

The number of articles found was lower in the SciELO Citation Index – Web of Science, CAPES Journal Portal, and Scopus databases. After reading the abstracts of all articles presented by the search, the following were considered: 7 articles in the CAPES Journal Portal, three in Scopus, and eight in the SciELO Citation Index – Web of Science database. However, some of the articles selected in this survey were present in more than one database (especially Google Scholar), which required, when rereading the material, the exclusion of duplicated works. In addition, articles whose treatment of Remote Education deviated from the objective of this research were excluded.

Finally, these inclusion and exclusion criteria selected 33 articles focusing on professor training and/or work in the context of ERE in Higher Education. Once identified in the research databases, the chosen material was collected by downloading the full texts of the articles so that they could be read in full and the data analysis stage could be initiated. Of the 33 articles, 31 discuss, in greater or lesser depth, in addition to some of the possibilities and learning acquired by professors with the development of the ERE, the many limitations that this context imposed on professor training and work. This article focuses on the results, discussions, and considerations outlined in this set of studies.

In addition to the exploratory and descriptive work, the data analysis was carried out based on the interpretative-critical and problematizing perspectives that, according to Marconi and Lakatos (2010), allow the association of the ideas expressed by the authors of the articles, data sources for this study, with other ideas that the researchers know about the topic, to then carry out a critique from the point of view of the internal coherence and validity of the arguments used. An analysis from this perspective also involves raising and discussing the issues that are explicit or implicit in the articles, as well as related aspects that researchers can associate with the material without losing sight of the topic of study.

By verifying what is known and understanding the state of play achieved to date in this field of research, we hope to offer those who may be interested in it an insight into the evolution of studies in the area, configuring it as a basis for the development of actions and future research on the impacts of ERE on higher education. Furthermore, the results of this study can be used for reflection and critical analysis by the HEIs themselves and the public authorities on these impacts and their effects on the conditions of professor training and work, as well as on the curricula of higher education courses and the achievement of educational objectives.

Professor training and work: Some notes

Since the educational reforms that took place, primarily since the 1990s, professor training and performance have been understood as pillars for improving the quality of education. From this perspective, the view of Higher Education professors as responsible for the shortcomings of education or as automatic implementers of innovations whose formulation had little or no participation. This view of teaching, while ignoring reality and social/historical conditions that generate this reality, depreciates professional practice and considers that changes in education are linear processes that are implemented simply as long as Higher Education professors can explain what they comprise (García, 2010).

However, as García (2010) observes, change processes, both in individuals and in organizations, do not work in a specifically rational way. For the author, complex systems generate self-regulation processes to accommodate or modify change proposals that do not always have the results expected by the promoting bodies. Furthermore, as Gatti, Barreto, André, and Almeida (2019) state, it is crucial to understand that professors' actions—in their work, where specific knowledge is required—occur in a sociocultural, historical, and interpersonal context. For this reason, school situations should not be separated from the social

circumstances that specifically constitute them since it is precisely based on the assumption that this subject is detached from their circumstances that educational institutions and policies tend to commit themselves exclusively to the training of isolated individuals, without taking responsibility for the conditions that constitute them as professors and subjects.

In many situations, policies tend to demand responsibilities from institutions and their professors that they often do not have the conditions to fulfill. Although some proposals seem necessary, they do not always guarantee the resources needed to implement them, leaving many schools and professionals at the mercy of their often scarce resources. These conditions can result in various disadvantages, including expanding the role, work overload, and professor discomfort (Martins & Duarte, 2010).

Facci (2004) analyzes professor discomfort as a situation in which feelings of discouragement or dissatisfaction with work in the face of different circumstances overcome the professor. This can generate, among other reactions, professional dissatisfaction and stress due to the accumulation of tensions and/or lack of critical reflection on the profession and pedagogical practice. For the author, the factors responsible for these feelings can influence the professor's image of themselves and their work, which could result in an identity crisis and self-depreciation. According to Penteado & Costa (2021), these precariousnesses result in conflicts, discomforts, and negative feelings that can generate illness processes in professors. These processes, if added to characteristic aspects of work and Remote Teaching, can enhance already existing forms of professor discomfort in teaching and face-to-face work.

Considering the social context and working conditions in which many professors find themselves immersed, professor discomfort can also result from alienation concerning the activities carried out, which would imply a loss of meaning regarding teaching and its role in human development. Basso (1998), when analyzing the meaning and purpose of teaching work, argues that the professor's motivation concerning their work is not entirely subjective but is also related to the material or objective conditions in which the teaching activity is developed. According to the author, when these objective working conditions do not allow professors to assert themselves, perform, improve, and develop their potential to conduct their actions autonomously, they begin to carry out their work in a situation of alienation.

However, Facci (2004) emphasizes that it is possible to articulate ways to overcome professor discomfort and the situation of alienation about work by "[...] drawing society's attention to the new difficulties that circulate in schools and creating possibilities to suggest ways to improve the conditions in which professors develop their profession" (Facci, 2004, p. 33). In this regard, Basso (1998) states that

[...] social practices that overcome alienation to some degree, including teaching work, do not depend only on subjective conditions, identified here by the professor's training that includes understanding the objectives of their teaching action. They also depend on the actual circumstances or working conditions mediating this search for more conscious relationships (Basso, 1998).

It is, therefore, essential to consider the historical and social conditions in which Higher Education professors find themselves to avoid falling into a partial, pragmatic, and fragmented analysis of their training and performance in an equally alienating process of study, research, and knowledge production. It is understood, as Magalhães (2021) states, that professors will not always have autonomy and control over the process, product, and meanings of their work, even if it is intellectual. Thus, the more opportunities they have to express—consciously—their knowledge, experiences, and representations, the greater will be "[...] the possibilities of confronting the expropriation of their knowledge and the reduction of the social and political meaning of their work to the restricted phenomenal, functional and pragmatic dimensions of practice" (Magalhães, 2021, p. 57).

It is about developing in the professor what Magalhães (2021, p. 55) calls socio-professional awareness, understood as "[...] the set of knowledge and representations that, actively and dialectically articulated, shape their teaching identity and guide their praxis at the existential, professional, and ethical-political level." For this author, teaching knowledge is understood as active constructions that allow Higher Education professors to analyze their practice according to the possibilities and limitations of the contexts in which they work and the conceptions they assume. Socio-professional awareness is thus related to the personal and social meanings that professors give to the profession in a given sociocultural context, meanings constructed by "[...] reflection on trajectories, desires and expectations and conceptions regarding the social and political function of education and teaching work" (Magalhães, 2021, p. 55). It is not, therefore, just about individual knowledge and representations but rather about a critical-reflexive awareness that understands knowledge,

experiences, and one's own professional identity in the relationship they establish with the social practice in which the Higher Education professor finds themselves inserted not only as a professor but, above all, as a worker and historically situated subject.

From this perspective, professors begin to understand their pedagogical practice beyond technical aspects, conceiving it as a whole based on the consideration of analytical and practical, social and experiential, objective and subjective dimensions, thus overcoming a merely instrumental and pragmatic perspective of training, knowledge and professional teaching practice (Zeichner, 2008; Magalhães, 2021). From this awareness, professors can overcome the condition of alienation concerning their work, assuming themselves as critical-reflective and transformative workers and intellectuals. To this end, initiatives are necessary, among other aspects, that favor professors to express themselves regarding their professional practice in articulation with the context and circumstances in which they work, including those that are singularly extraordinary, as is the case of ERE in a pandemic context.

By considering these aspects, fostering debate, and drawing society's attention to the effects of Remote Education in Higher Education, the objective of this study is to identify and analyze the main results achieved and considerations outlined in the articles published between 2020 and 2021 on the impacts of Emergency Remote Education on the professor training and work in Brazilian HEIs, with a focus on the limitations, difficulties, and challenges faced by Higher Education professors in this context. It is suggested that the actions undertaken by all professionals involved in higher education, in this context, will have an impact over the coming years not only on undergraduate course curricula and student learning but also on professor training and work.

Emergency remote education: Limits and challenges for professor training and work in higher education

Based on their results and reflections, all the studies analyzed in this article present positive and negative aspects and some challenges related to professor training and work within the scope of ERE. However, without disregarding the possibilities and potential of ERE for training and work in higher education, we seek to focus on the difficulties, understood as limitations that, in some situations, have harmed and/or presented challenges of different kinds to professors at this level of education.

Fifteen articles highlighted professor training for on-line teaching and TDICs. The articles discussed, either through data from the perceptions, experiences, and opinions of professors participating in the studies, the authors' reports of experiences, or their theoretical reflections, the lack or insufficiency of professors' training and experiences for dealing with ERE.

Schmidt, Lopes, and Pereira (2020), based on the reports of 36 professors from a private institution in the southern region of Brazil, reveal that, although the HEI offered some essential guidance on teaching methods and operationalization of internal institutional systems, the professors did not receive training focused on the educational purposes and use of TDICs. This same limitation is highlighted by Anjos (2020), who, when providing an autobiographical account of her experience as a professor at a private institution in the Northeast region, discusses the lack of training for Higher Education professors to use these technologies, even among those who already had some experience with virtual learning environments. Cordeiro, Coelho, Saraiva, Rodrigues & Pinheiro (2020), Lima (2020), Ferreira, Silva, Melo & Peixoto (2020), and Santos, Silva & Belmonte (2021a) also highlight, in their works, the lack of initial and continuing professor training to deal with digital resources and technologies, which generated, in the professors interviewed, according to their reports, feelings of insecurity, doubts and work overload, since they had to deal with these limitations autonomously or, as Guimarães & Maués (2021) show, in an improvised way due to the pressures of the imposed reality, transforming their own homes into recording studios for classes. Given this scenario, the professors participating in the study conducted by Cordeiro et al. (2020) indicated the need for greater investment by public and private HEIs in technological resources, training courses, and actions for both Higher Education professors and students for the development of ERE and post-pandemic teaching.

Other authors (Gusso et al., 2020; Cerqueira, 2020; Valente, Moraes, Sanchez, Souza, & Pacheco, 2020; Guimarães & Maués, 2021; Souza, Barros, Dutra, Gusmão, & Cardoso, 2021) also discuss, in their theoretical essays, documentary analyses, and literature reviews, the difficulties related to the lack of Higher Education professor and student training to work remotely with the use of TDICs, which implies the need for investments in training processes that contribute not only to the use of these resources but, mainly, to pedagogical

interaction and communication through them, considering generating learning situations. Souza et al. (2021), when reflecting on the current context of precarious teaching work, argue about the lack of training and support for Higher Education professors to deal with the increased demand for work due to the new teaching and learning challenges that have required this professional to be open to discoveries and new ways of working. For the authors, the use of digital technologies in Higher Education requires, however, not only the provision of adequate training to education professionals by HEIs but also pedagogical support, material, and spaces of mutual support for these subjects so that they can achieve educational goals.

For Gusso et al. (2020), the training of Higher Education professors, which should take place in *stricto sensu* graduate programs, becomes weakened when it relegates training for teaching to a secondary role, giving exclusive focus to the training of researchers. For the authors, this fragility can hinder teaching, making it even more challenging in remote emergencies, such as the one we are experiencing. When also reflecting on the limitations of Higher Education professor training, Gusso et al. (2020), Silus, Fonseca & Jesus (2020), Valente et al. (2020), Ferreira et al. (2021), and Silva, Hastenreiter, Santos & Silva (2021) point out, in their articles, the need for HEIs to provide teaching staff with spaces for continuing education with a didactic-pedagogical foundation, including on the pedagogical use of TDICs, overcoming a concept of merely instrumental training. For these authors, although necessary, the purely technical mastery of these technological resources does not guarantee their use for educational purposes since the training objectives must guide the choices of technological resources to be used, considering the critical and careful analysis of their advantages, limitations and, above all, the effects that these resources can have on student learning.

On this aspect, we agree with Saviani (2020) when he states:

[...] In addition to making computers accessible by disseminating devices and instead of hastily launching education into the sphere of distance learning courses, it is necessary to ensure not only the technical-operational mastery of these technologies but also the understanding of the scientific principles and processes that made them possible. If we continue along the path we are following, it does not seem exaggerated to consider that we are, in fact, fulfilling those prophecies in science fiction texts that predicted humanity subjected to the yoke of its own creatures, being directed by machines geared toward automatic processes (Saviani, 2020, p. 22).

Understanding technology as the study and understanding of the foundations of the different techniques used in social and human production—and not the mere training in productive techniques (Saviani, 2020)—it is therefore necessary to invest in pedagogical training for Higher Education professors that focuses, among other aspects, on the foundations and strategies related to the pedagogical and social use of different technologies and educational resources, so that they are compatible and can contribute, in real terms, to the training objectives advocated, whether in the face-to-face model or an emergency, as is the case of Remote Education in the context of the pandemic. Otherwise, TDICs, instead of being configured as another resource with the potential to collaborate in developing the teaching-learning process, may replace the subjects that constitute it.

The studies analyzed in this article present important data and discussions on professor training, especially for working with the help of TDICs, considering the Remote Education scenario. Teacher training certainly plays a relevant role in developing pedagogical work and transforming concepts, knowledge, purposes, and even—in some situations—the conditions (im)posed to education professionals. However, this discussion deserves some reflection.

It is known that Higher Education professors face many challenges in the development of the teaching-learning process in different teaching contexts, regardless of the area of knowledge. However, it is understood that these challenges are not only related to professor training or to how Higher Education professors develop their work in the classroom (whether in person or virtually) since these aspects also depend, directly or indirectly, on the principles and concepts, purposes and objective conditions that guide and permeate the educational process. We agree with Basso (1998), Facci (2004), and Martins & Duarte (2010) when they state that social practices that aim to overcome the alienation of teaching work do not depend exclusively on subjective conditions, i.e., on the professor's training and their teaching action, but also—and mainly—on the contexts and concrete working conditions.

That said, it is understood that an understanding of the variables that influence and impact Higher Education professors' training and the work they develop contributes to a more enlightened, critical, and reflective practice. In these terms, when discussing professor training to work with ERE or in Face-to-Face Teaching using TDICs, for example, it is important to consider training that does not only aim at the operationalization of teaching techniques and resources but that equips Higher Education professors to

acquire, according to Zeichner (2008), Gatti et al. (2019), and Magalhães (2021), a socio-professional awareness of their work that allows them to understand it as a whole. According to Magalhães (2021), such awareness presupposes a critical dimension of professional knowledge regarding the possibilities, limits, and challenges of their work, which go beyond the universe of their practice in the teaching context and due to the concepts and roles they assume. From this perspective, Higher Education professors and their training are no longer solely responsible for the success or failure of the teaching-learning process.

Examples that professor training—or any other factor in isolation—should not be characterized as responsible for unsuccessful practices in the development of ERE can be found in the analyses carried out in the articles that, among other aspects, discuss the insufficiency of material conditions for the development of teaching work and student learning, and the absence of policies, support, infrastructure, and working conditions for the development of ERE in the context of the pandemic (19 articles).

Regarding the lack of support, Castro, Rodrigues & Ustra (2020), Campani, Nascimento & Silva (2020), Ferreira et al. (2020), and Silva et al. (2021), when conducting research with professors from different public and private HEIs, discuss inefficient management by HEIs in planning and developing the ERE, especially concerning support for professors and students and some poorly conducted actions that impacted the work, more specifically concerning the mental health of the actors involved and the quality of the education offered.

Ferreira et al. (2020), when discussing professor training to work on-line during the COVID-19 pandemic, bring reports of professors who did not have any tools made available by the HEI to carry out the ERE, leading many to seek, on their own, services that were easily accessible and free to interact in virtual classes with students. In addition, Schmidt et al. (2020), Ribeiro, Cavalcanti & Ferreira (2021), Cordeiro et al. (2020), Araújo, Amato, Martins, Eliseo & Silveira (2020b), Borges & Ribeiro (2021), and Silva, Silva, Renato & Suart (2020) also report, based on data collected from professors at public and private HEIs, the lack of resources for the acquisition of computer equipment, quality internet connection, and teaching materials suitable for the development of ERE, which required most of them to invest in these materials and tools with their resources, resulting in unplanned personal expenses that could enable the continuity of remote work.

In addition to the lack of financial support for the acquisition of equipment, Ferreira et al. (2020) also report, based on their data, the lack of support and technical support for Higher Education professors by HEIs to deal with AVAs and TDICs and of pedagogical and institutional coherence that could guide the ERE, which, according to the authors, led to the emergence of precariousness in teaching work. According to Araújo et al. (2020b), among the materials most purchased by Higher Education professors are computers or notebooks, videoconferencing systems, hiring of higher-speed internet, as well as equipment such as headphones, microphones, digital whiteboards, camera/cell phone holders, digitizing tablets, webcams, and screen recording and video editing software.

Gusso et al. (2020) point out that there are examples of universities in other countries that have made the necessary material conditions possible for the development of Remote Education during this pandemic period, such as China, which, in addition to guaranteeing equipment for Higher Education professors and access conditions for all students, invested, with public resources, in infrastructure and digital security. According to the authors, in Brazil, however, many HEIs make immediate decisions, with little planning—especially private institutions—, based on the premise that those involved in the teaching process had easy access to technological and digital resources. For these authors, teaching actions and projects are unlikely to have the potential to promote learning if they ignore the study conditions of students and the work of Higher Education professors, nor the available institutional structure (resources and technology), with the risk of becoming merely improvisation or legal compliance with regulations.

In addition to the responsibility of HEIs in providing the necessary conditions, it is necessary to consider the responsibility of the government to guarantee, at the national level, policies and programs for access to and maintenance of education, regardless of the model or modality of teaching. For Magalhães (2021), by transferring to Higher Education professors, the costs of labor and Remote Education and the burden of training necessary for the use of new tools and ways of promoting teaching through TDICs, the federal government, in the absence of a national policy built collectively with the federative entities, exempted itself from its responsibility to guarantee the material resources necessary for the development of ERE.

Although more evident in developing countries, precarious working conditions are also experienced in other countries. One example is the bibliographic study conducted by Flores & Gago (2020), from which the authors were able to identify similar difficulties experienced by Portuguese Higher Education professors concerning ERE, including, in addition to the lack of adequate training, the shortage of equipment necessary

for teaching, requiring them to use their own technological devices or even purchase materials to guarantee their working conditions.

In important documentary research on the positions of national and international Higher Education professor union movements on ERE in public higher education in the context of the COVID-19 pandemic, Guimarães & Maués (2021) present data from the 2020 report of the *Comité Syndical Francophone de l'éducation et de la formation* and the bulletin of the *Syndicat des Professeurs et Professeures de l'Université du Québec (SPUQ)* that, by highlighting the dangers of distance learning for increasing educational and social inequalities, draw attention to the fact that professors and students do not have the conditions for this type of teaching, not only in terms of material (such as equipment) but also in terms of pedagogy. The SPUQ bulletin also presents data from professors who complained about the lack of adequate space to work and the lack of material conditions, such as computers and internet, with the expenses falling on them “[...] both in material terms, when they need to take financial resources from their salaries to cover on-line teaching, and concerning the time invested in adapting courses to the new on-line format” (Guimarães & Maués, 2021, p. 161).

Another complaint was filed by the *Fédération nationale des enseignantes et des enseignants du Québec (FNEEQ)*², gathering around 35 thousand members, including high school Higher Education professors and university professors in Canada, who spoke out about the imposition of non-face-to-face teaching. According to this document, the ERE, defined as urgent and immediate, did not allow for broad preparation and discussion by the teaching profession on the subject in assemblies and other collective spaces to allow interested parties to participate in the decisions that needed to be made for the continuity of the work. According to the authors, this federation takes a very critical stance towards the defense of some education managers for Remote Education,

[...] ignoring a kind of lobby formed in favor of Distance Education, allowing a decrease in the number of Higher Education professors, an increase in the number of students, the absence of a physical base for the teaching-learning process, and the sale of private platforms (Guimarães & Maués, 2021, p. 163).

Like the FNEEQ, the authors present another warning issued by the *Comité Syndical Européen de l'Éducation*, for which interactions between Higher Education professors and students, academic life, programs, and projects cannot be subsumed by remote or hybrid models or by distance education (DE) in the post-pandemic period, under the risk of disrespecting the freedom and autonomy of academic institutions and their structural and pedagogical conditions.

These complaints can also be seen in the documents of the National Association of Higher Education Teachers (ANDES), which highlight the lack of responsibility of the Ministry of Education (MEC) in guaranteeing the material conditions for the implementation of the ERE, as well as the illegality in the use of DE without support in the Pedagogical Projects of undergraduate courses. This association emphasizes that Remote teaching should be understood as limited and temporary due to the lack of material and pedagogical conditions for Higher Education professors and students. It should, therefore, not be used as a model for building consensus against public education and its privatization from an essentially mercantile perspective, in compliance with market interests and the guidelines of international financial organizations (Guimarães & Maués, 2021).

According to Guimarães & Maués (2021), despite ANDES's defense in Brazil of the need for debates between the MEC, HEIs, and their academic communities on the decisions to be made due to the impossibility of maintaining in-person activities due to the pandemic,

The academic debate, in general, was restricted by rectors and administrations within HEIs. Subsequent actions by the MEC indicated the intention to implement the model. This scenario was highlighted in the 'Note from the National Board of ANDES-SN on the Working Group established by the MEC to consider strategies for expanding DE in federal universities,' published on October 26 (Circular No. 348/2020): in this document, it is noted that the government intends to use Emergency Remote Education (ERE) as a mechanism for strengthening distance learning, as a priority modality for offering higher education (Guimarães & Maués, 2021, p. 168-169, emphasis added).

Thus, according to the authors, the identification of measures that should be taken on an exceptional level may not be limited to the context of the pandemic and may be used as a justification or backdrop for strengthening DE, advancing, as Farage, Costa & Silva (2021), Guimarães & Maués (2021), Fior & Martins

² Federation comprising 127 Higher Education professors' unions spanning 51 European countries, with over 11 million members (Guimarães & Maués, 2021).

(2020), Nascimento & Cruz (2021), and Saviani (2020) state, in the project of commodification, lightening, deregulation, and precariousness of higher education.

Based on a multicenter study, Medeiros, Batiston, Souza, Ferrari & Barbosa (2021) present, in their article, data from professors from public and private HEIs who, for the most part, indicate that there was no planning between the suspension of in-person activities and the adoption of ERE. A similar limitation is pointed out by Silva et al. (2021), who, when presenting reports from interviewed professors (all of them from private HEIs), show that there was no consultation with the professors about the measures related to the development of ERE and about which technological resources would be most appropriate for this type of teaching. According to the authors,

[...] the activities that were contractually and socially agreed as in-person were compulsorily migrated to Remote Teaching by exclusive decision of the HEIs, as pointed out by the interviewees, without dialogue or participation of professors and students. It is clear that, in the face of the COVID-19 pandemic, the educational leaders of the HEIs surveyed sought to maintain classes at any cost. However, they are faced with professors without training in technology, some students without an internet connection or even internet access, and without prior knowledge of the digital resources adopted to continue the school year. This set of factors made the work of these Higher Education professors difficult, which can also harm the students' education (Silva et al., 2021, p. 189).

Considering these aspects, the authors emphasize that the development of the ERE must consider, on the one hand, the resources available in HEIs and, on the other, the material conditions of students' access to TDICs. Furthermore, Silva et al. (2021) argue that HEIs need to commit more to offering quality education to students and adequate working conditions for Higher Education professors than to profits, reinforcing the need for more investment and infrastructure by institutions, as well as pedagogical studies on the implementation of Remote Education, considering the provision of socially referenced quality higher education.

Gusso et al. (2020) also denounced the lack of planning by many HEIs in implementing ERE, especially when disregarding the social reality of a large part of the students and many professors and the pedagogical and technological aspects involved in this type of teaching. Because they are not dichotomous categories and, often, due to the lack of understanding of the pedagogical and structural differences between DE and ERE, these authors warn of divergences in the provision of Remote Education between the country's different public and private Higher Education institutions. For the authors, the lack of material and pedagogical infrastructure, the lack of concern for the psychological effects resulting from a pandemic period, the lack of training for teaching staff to deal with TDICs in the context of Remote Education, and the lack of preparation and guarantee of conditions for students to develop their activities in this environment are elements that can produce, together with other factors, work overload, anxiety and demotivation in large part of Higher Education professors and students, leading, according to the authors, to an increase in academic dropout in Higher Education.

Magalhães (2021), when discussing teaching work in the context of the COVID-19 pandemic, argues that the exclusion of professors from decisions about the means to be used in the development of the ERE and from debates regarding adjustments to curricula, projects, and assessments reflects the process of precariousness of teaching work, as well as its disqualification and deprofessionalization. This is especially true for private HEIs, which, with little time for planning and aiming to maintain their profits, were ahead of public institutions in offering education remotely or through distance learning, leading many of their professors to a situation of uncertainty and insecurity as many of them began to reduce their teaching staff, make employment contracts more flexible or even terminate them permanently. Those who managed to maintain their employment relationship were required to provide “[...] greater dedication, planning, training, and meetings, activities that, carried out in a home office system, blur the limits of time and space in the private lives of these Higher Education professors” (Magalhães, 2021, p. 41).

When discussing the capital project for education in the particularity of the pandemic that led to the implementation of ERE in HEIs, Farage et al. (2021) and Silva et al. (2021) state that, in many situations, digital technologies were not used as a mediation of teaching work, but as a replacement for their professional work, increasing “[...] significantly the process of precariousness of teaching work and the possibility of massive layoffs of education professionals” (Silva et al., 2021, p. 192). Saviani (2020) supports this idea when he points out that, even given the lack of material conditions for the vast majority of students and many Higher Education professors to access and develop ERE, a large part of HEIs, especially in the private network, took advantage of the pandemic to expand DE, promoting large-scale layoffs, “[...] as happened with UNINOVE,

which on June 22 fired 300 professors through a simple announcement on the internet in a totally ‘impersonal and rude’ manner” (Saviani, 2020, p. 6, author’s emphasis).

These studies, together with the others analyzed in this category, allow us to observe that this scenario of layoffs, salary reductions, and work overload, generated based on the development of the ERE due to the necessary health measures to face the COVID-19 pandemic, has impacted/impacts the lives and mental health of Higher Education professors and negatively influenced their professional practice and, as a consequence, student learning. Such aspects, combined with the emptying of the curriculum due to the lightening of the training offered and the absence of organic public policies that guarantee digital inclusion, conditions of permanence, and financial, technical, and pedagogical support for professors and students for the development of activities inherent to higher education, have resulted in the precariousness of all pedagogical work, fueling a scenario that tends to reduce the quality of the educational process over the next few years if state policies with massive investment in education are not implemented.

Considering socially referenced quality education and digital inclusion policies implies judging actions that guarantee large-scale and long-term material and financial investment. However, contrary to these needs, and disregarding the relevant role of IESs in human development, social development, and the fight against the pandemic—with countless research, outreach, and university hospital network projects —, the federal government imposed, in 2021, a cut of more than 18% in the Budget Guidelines Law, reducing resources allocated to public HEIs, Health, Science & Technology and other bodies providing public services. In a note issued in May of that same year, the National Association of Directors of Federal Higher Education Institutions (ANDIFES) warned Brazilian society about the negative impact that public HEIs would have from the budget then approved, which was 18.16% lower compared to the 2020 budget. On the same date that the 2021 budget was sanctioned, “[...] Decree 10,686 still blocked R\$ 2.7 billion of the MEC budget in the sanctioned law, affecting federal universities by a further 13.89%” (Associação Nacional dos Dirigentes das Instituições Federais de Ensino Superior [Andifes], 2021).

Continuing the debate on the impacts of ERE on the training and work of Higher Education professors, some articles address the increase in the demand for teaching work, the difficulties professors have in reconciling remote work and personal life, the deepening of social and educational inequalities resulting from ERE, and, as a consequence, the precariousness of teaching work (19 articles).

With the increased use of TDICs during ERE, communication between professors, managers, and other professionals at HEIs has been facilitated. On the one hand, this has helped to maintain contact, albeit virtually, between the subjects who are part of the educational process, aiming at ways to retain it. On the other hand, however, this ease has resulted, in the vast majority of cases, in the intensification of daily work and breaking down boundaries between personal and professional life.

While technology is understood as an extension of human limbs and senses aimed at facilitating their work, and considering that its use in education represents, in theory, another possibility of accessing information, carrying out activities, and appropriating knowledge, its inclusion in educational processes—and other areas—does not always contribute to achieving the objectives that are intended. Therefore, despite its potential, the time savings that technologies could represent for human work and, in this particular case, for teaching work, have not been converted into qualified time for carrying out other activities (rest, leisure) but instead have been converted into more work, resulting in its intensification and precariousness. A similar reflection can be observed in some of the articles analyzed, such as by Silva et al. (2021), Bittencourt (2021), and Araújo et al. (2020).

Schmidt et al. (2020), when analyzing the perception of professors from a private HEI about the new routine based on the ERE—most of whom have school-aged children—discuss the demands and daily changes they face. For some of the study participants, the greatest difficulty was related to separating time for domestic care and work since both overlapped in the same environment. Some professors reported not having been consulted and having been forced to work in an extended routine despite their material conditions, anxiety, and family environment. For the authors, these factors, combined, resulted in the precariousness of the work performed by professors.

Discussing professor training and work involves thinking about the objective and subjective conditions that constitute and influence professional practice, regardless of the context in which they operate. When discussing professor training in the context of the pandemic, Magalhães (2021) points out that, before being professors, these professionals were people with the role of mothers, fathers, and providers for their families, who were required, with the suspension of classes and the accumulation of functions, to reconcile remote

work with domestic and family care, with many also pedagogically supporting school-aged children. Such aspects directly impacted the teaching working conditions and their physical and mental health.

When analyzing and reflecting on the effects of ERE on the training and work of university professors, some authors address its impacts on the emotional health of these professionals (9 articles). Others, however, have this theme as a central one, addressing, with greater emphasis, the negative impacts of ERE on professors' physical and mental health and its consequences for the socio-affective dimension encompassing the teaching-learning process (3 articles). Some also address the lack of psychological support by HEIs for the subjects involved in the educational process, focusing on professors.

Based on data collected from professors at a private HEI in the southern region of the country, Schmidt et al. (2020) point out the lack of support for professors regarding their emotional illness. This aspect has influenced the quality of teaching. Authors such as Nóbrega et al. (2020), Cerqueira (2020), Santos, Nery, Carvalho & Cecilio-Fernandes (2021b), and Medeiros et al. (2021) emphasize that the weight of the current context, the number of cases and deaths from COVID-19, and news reports on morbidity and mortality have generated anguish, anxiety, fear, and emotional instability among education professionals, negatively impacting their life dynamics and their work.

In their article, Farage et al. (2021) discuss, among other aspects, the impacts that the intensification of teaching work during the ERE has had on the mental health of these professionals, showing how much this consequence has distorted teaching know-how:

[...] the stress of dealing with technologies; the anxiety of being able to convey some content to students without even seeing their faces hidden behind the 'dots' on the platforms; the need to look for new bibliographical references for classic texts not available on the internet; the impossibility of identifying, by looking, whether the student is understanding the content or not; the lack of interaction and the uncertainty about whether there is actually someone listening behind the 'dots'; the incessant question 'are you listening to me' is met with echoing silence, but, with luck, in the chat, there is a 'yes professor, we are listening.' This technological environment that takes away the possibility of walking around the room; explaining the same content twice, three times in a different way, even when there is no question, just by looking at the student's progress; that prevents us from 'reading' the movement of bodies tired from work and playing a game to wake them up ... (Farage et al., 2021, p. 238, authors' emphasis).

In fact, the ERE not only exposed educational inequalities, especially concerning access to TDICs and their tools, but also highlighted other problems that equally affect students, professors, and other education professionals, such as the environment for study/work, mental-psychological health (Silva et al., 2021) and the lack of public policies that not only diagnose problems but also develop concrete paths and solutions to overcome them.

The participants in the study conducted by Silva et al. (2021) emphasize the psychological impacts of the growing number of cases and deaths from COVID-19, including within their families and among coworkers. These difficulties, combined with the insecurity of working remotely without adequate training or material working conditions, generated insecurity among HEI professors, which, for many of them, were factors that led to illness. That said, it is essential to recognize the subjective consequences of this reality and the process of illness caused by social distancing, remote work, and teaching in the context of the pandemic.

Araújo et al. (2020), Silva et al. (2021), and Farage et al. (2021) reinforce the work overload and the increase in stress factors especially among female professors, in most cases related to the accumulation of domestic functions and care for children, older people, and people with disabilities, tasks that still predominantly fall on women in societies with a patriarchal culture, highlighting a gender issue that, according to Silva et al. (2021, p. 191), "[...] may further intensify inequalities in the current pandemic scenario." These factors have repercussions on working conditions, which led many women to reduce their academic production during the pandemic, especially those with children (Farage et al., 2021).

Another factor that has increased stress levels among professors is related to TDICs, which are more emphatically inserted into the teaching-learning process during the ERE. Overworked professors—feeling insecure about new teaching methods, short deadlines and adaptive urgencies, low skill levels in using technology, the fierce search for knowledge acquisition, the intensification of the flow of information, long hours working on computers, smartphones, tablets or other electronic devices and the lack of resources and organizational support (from the management of the HEIs and coworkers)—are those who have experienced the most worsening of their emotional health, including anxiety, depression and Burnout Syndrome. This reality is even more prominent among female professors (Silus et al., 2020; Araújo et al., 2020b; Cerqueira, 2020; Bittencourt, 2021; Medeiros et al., 2021; Santos et al., 2021b).

In addition to these factors, another aspect identified as limiting and that has negatively impacted the mental health of university professors concerns, precisely, social isolation, which is necessary in times of pandemic but which also ended up reinforcing professional isolation. Based on their data, Ribeiro et al. (2021a) identify the lack of exchange and sharing among professors about Remote Teaching, which reinforced, to a certain extent, the individualism, insecurity, and anguish of these professors in the strategies adopted in the ERE. Even though they are not experiencing exceptional periods like this, many professors face situations of 'loneliness' in the profession; however, in the context of on-line work, the separation and individualization of the process seem even more accentuated.

Zeichner (2008) draws attention to a dangerous consequence of focusing on individual reflection in pedagogical work: Higher Education professors' concern with their failures, leaving their attention and critical analysis of educational institutions, the social context of teaching for Higher Education professor development, working conditions and, it is worth adding, the structure of society itself in the background. This individualistic focus on professor training and performance, in addition to reproducing the current social model and adapting the subject to the immediate reality without problematizing it within the multiple variables that constitute the context in which they are inserted, transfers to the professor the responsibility for the success and failure of both their work and the learning of students and even the quality of education as a whole.

In defending exchanges between peers, Zeichner (2008) discusses the importance of challenges and, at the same time, support through social interaction since it helps to understand and validate knowledge and experiences. Therefore, actions and studies that contribute to interaction, debate, collaborative work, and the exchange of ideas and experiences among Higher Education professors become essential so that they can identify in themselves and others the possibilities of facing collective difficulties, as well as engage in awareness and the fight for better objective and subjective conditions that favor overcoming obstacles that go beyond training and pedagogical work, including their mental health.

In addition to the aspects listed, Ribeiro et al. (2021a), Silva et al. (2021), Fior & Martins (2020), Ferreira et al. (2020), Bittencourt (2021), Santos et al. (2021a), Santos et al. (2021b), Valente et al. (2020), and Farage et al. (2021) also discuss the loss of privacy faced by many Higher Education professors with the elimination of the boundaries between public and private in their personal and work activities. Professors saw their rest periods decrease by using their homes as classrooms, research rooms, and meeting rooms, often having to negotiate this space with other residents. At the same time, the demand for work increased, requiring them to be constantly available, often full-time, especially when they were requested continuously by students on messaging apps and social networks due to technological facilitation—even outside of working hours. Despite these conditions and their implications for the lives of everyone involved, the ERE continued its course.

Bittencourt (2021) denounces the false informality and disrespect for official channels of contact and their limits to mediate relations between students and Higher Education professors during the ERE, leading to mixed private and public spheres of life. In his theoretical essay, the author argues that, in many situations, criticism is directed at Higher Education professors without any knowledge of the psychological reality of these professionals, "[...] exhausted by the most diverse problems ingrained in their lives" (Bittencourt, 2021, p. 170). For the author, the adversities, anxieties, uncertainties, stress, and even the physical problems and family conditions faced by Higher Education professors were not/have not been considered concerning the extension of their working hours. He reinforces: "[...] no one is exempt from suffering the consequences of the change in routine necessary to combat the spread of the coronavirus, and thus our performance is affected, our health is harmed. Professors are not heroes endowed with extraordinary willpower" (Bittencourt, 2021, p. 170).

In addition to this factor, in an article that discusses new ways of organizing teaching work in the context of the pandemic, Borges (2021) discusses the compulsory exposure of professors and students in virtual classes in which, often, private spaces were revealed, and the boundaries of the classroom as an institutionalized space were broken. Regarding this rupture, Magalhães (2021) mentions the invasion of virtual teaching spaces, monitored and policed as they become accessible to technicians and managers through digital platforms, "[...] violently increasing the mechanisms of control and surveillance over teaching work" (Magalhães, 2021, p. 42). This scenario of uncertainty has put pressure on many Higher Education professors in Basic Education and Higher Education during the pandemic, especially those linked to private institutions, who have felt their work routine increase, often without breaks, going beyond the contractual workload.

Authors such as Castro et al. (2020) and Santos et al. (2021a), when analyzing and reflecting on the impacts of ERE on the pedagogical practice and mental health of HEI professors, present data that reveal a sharp

increase in the work demands of these professionals during remote activities, going beyond the weekly workload. According to Castro et al. (2020), this increase was identified by more than half of the study participants—the vast majority of whom were women—who indicated that they were permanently available in three daily shifts to respond to the demands that arose. Santos et al. (2021a) and Araújo et al. (2020b) point out that these demands are not limited to class time but also include other activities inherent to university teaching, such as studies and readings for (re)planning classes and producing supplementary materials, studying TDICs, recording video classes, organizing the AVA, correcting activities carried out by students, supervising work, meetings, filling out spreadsheets, administrative work, taking continuing education courses, participating in events and research and extension projects, publishing teaching and scientific materials, among others. When it comes to professors at private HEI, in many cases, they are employed at more than one institution—or even in another type of job—leading to, as Santos et al. (2021b) point out, an even more significant accumulation of work and physical and emotional exhaustion for these professionals.

Among the articles analyzed, 9 indicate the difficulties, concerns, or insecurity of professors in planning, modifying, and evaluating didactic-pedagogical actions in the format of remote classes, especially with the use of TDICs, revealing the emergency nature of the measure adopted by HEIs. Among them, there are the studies of Ribeiro, Godiva & Bolacio Filho (2021b), and Santos et al. (2021b) related to the difficulties of professors in the process of adapting classes to the ERE which, among other aspects, were hindered by the lack of knowledge of the new resources and the lack of adequate technical support, mainly because they had not been necessary until now. The study by Silva et al. (2021) shows that even professors with experience in DE had difficulties with ERE since they did not have enough time to reorganize courses and plan the methods, activities, and materials specific to this teaching format. Campani et al. (2020) also report this limitation when discussing professors' insecurity in adapting their classes to the ERE model in a curriculum aimed initially at in-person teaching, given their lack of mastery over virtual learning environments created or acquired by HEIs and new digital resources. These authors also present Higher Education professors' concerns regarding the exposure of their image, positions, and content in the context of a lack of institutional investment in security and protection for teaching work.

Authors such as Penteado & Costa (2021), when analyzing the impacts of digital technologies on teaching work, argue that the production of video classes creates new demands and learning for professors' practice, whether in Remote Teaching or Distance Learning. According to the authors, this resource requires knowledge about technological devices, audiovisual language, verbal, vocal, and non-verbal expressiveness, and transposition to audiovisual language from the professor, among other elements. However, beyond these issues is the exposure and surveillance of the Higher Education professor's image and voice, who, in many situations, is forced to subject themselves and their practice to logic that interferes with their professional identity and pedagogical work. According to the authors, among the effects that this reality tends to have on professors are the negative representations, experiences, and feelings that can result in discomfort, demotivation, and physical and mental exhaustion, as well as other forms of Higher Education professor discomfort.

In a study involving 313 physical therapy professors from public and private HEIs in Brazil, Medeiros et al. (2021) identified dissatisfaction on the part of 63.2% of professors regarding the quality of their work within the scope of the ERE. Regarding this aspect, the authors argue:

[...] the lack of familiarity with digital technologies, the lack of experience, the absence of a planning period, in addition to concerns that permeate teaching, such as the recognition that existing social inequalities directly impact the conditions of access for students and, therefore, the fair and equitable provision of learning for all, may be related to these feelings (Medeiros et al., 2021, p. 7).

A broad understanding of the possibilities, limits, and challenges involved in the teaching profession requires Higher Education professors to have a socio-professional awareness, allowing them to analyze education beyond the problems involved in their classroom practice. Quality education implies thinking about the objective and subjective conditions that influence and, in many situations, determine students' access to and retention in school education. This aspect goes beyond teaching; it directly influences it.

For the first time, conducted in the context of a pandemic, the survey on the use of Information and Communication Technologies in Brazilian Households (TIC Domicílios) showed that, despite an increase in the proportion of households with internet access (from 71% in 2019 to 83% in 2020) and in the number of internet users during this period (81% of the population aged ten or over), the digital inequalities that affect the appropriation and use of these technologies by different segments of the population persist. According to

this study, almost all internet users accessed the internet via cell phone in 2020 (99%). For 58% of them, this device continued to be the only possible means of accessing the network—reaching 90% among those who studied up to early childhood education or belonged to classes D and E. Exclusive use of cell phones was also predominant among those who self-identified as Black (65%) or Brown (60%) and residents of the Northeast region (72%) (Comitê Gestor da Internet no Brasil – CGI-BR, 2021).

If this reality can affect Higher Education professors, its impacts on students can be inferred. Considering the data from the 5th Survey of the Socioeconomic Profile of Students at Federal Universities, conducted by ANDIFES in 2018 and published in 2019, 51.2% of all students at Brazilian federal universities are Brown or Black and 70.2% come from families with an average monthly income of up to 1.5 minimum wages (26.61% have an income of up to half the minimum wage), that is, from classes D and E (Associação Nacional dos Dirigentes das Instituições Federais de Ensino Superior [Andifes], 2019), it is understandable the impacts that the ERE has caused in the academic life of a large portion of students, especially those who live in disadvantaged socioeconomic conditions. This reality is further aggravated in the context of a pandemic, in which the illness of relatives, care for family, unemployment (or underemployment), and the need to be included in emergency aid programs have burdened the personal lives and physical and mental health of many of these young students, in addition to influencing their conditions for remaining in Higher Education, including the precariousness of access to TDICs.

For Souza et al. (2021), Magalhães, Silva & Paula (2021), Campani et al. (2020), Farage et al. (2021), and Guimarães & Maués (2021), these and other data reveal the exclusionary nature of the ERE adopted by HEIs, especially concerning public education, aggravating socioeconomic asymmetries and educational inequalities by failing to guarantee adequate conditions for access, permanence, and appropriation of quality knowledge to all students, without distinction, as well as adequate working conditions for their professionals. According to Fior & Martins (2020, p. 13, authors' additions), "[...] as essential as thinking about conditions that favor students' permanence in ES [Higher Education] is reflecting on the viability of professional development and the work of Higher Education professors".

In addition to the aspects listed and discussed—and being linked to them—another factor identified by research as limiting the development of ERE concerns its detriment to the achievement of training objectives and the quality of education offered. According to the articles that discuss this issue, professors attribute this limitation, among other points, to the difficulty in motivating and engaging students' participation in on-line classes (Araújo et al., 2020b; Cordeiro, 2020; Ribeiro et al., 2021b; Silva et al., 2020), either due to the lack of familiarity of both parties with virtual platforms, or the use of methodologies that are not consistent with the dynamics of a virtual learning environment (Araújo et al., 2020b; Gusso et al., 2020; Salvagni, Wojcichoski, & Guerin, 2021) or, even, due to the specificity of this model, which is limiting in terms of access, inclusion, communication and interaction between subjects and the appropriation of cultural content.

For Nóbrega et al. (2020), Bittencourt (2021), Ribeiro et al. (2021a), Santos et al. (2021a), Cordeiro et al. (2020), Salvagni et al. (2021), and Silva et al. (2020), the face-to-face experience favors the approximation between subjects and the perception of professors about students' emotions and difficulties in the teaching-learning process, a factor limited in virtual classrooms. According to the results and reflections of these studies, the absence or scarcity, in Remote Education, of essential elements that constitute the educational process, such as dialogue, debate, exchange of experiences and knowledge, and feedback, leave Higher Education professors with some unknowns regarding the real presence, participation and appropriation of content by students in this context, resulting in difficulty in achieving training objectives and in monitoring and evaluating learning. For Cerqueira (2020), this problem, which could not be solved with the resources available on the virtual platform (forums, video conferences, and groups on social networks), may have created gaps in the communication and teaching-learning process.

Among the gaps in academic training are those related to practical activities, emphasizing supervised internships, essential for professional training because they favor greater contact between students and their future field of work and its specificities. Among the selected articles, few discuss, from the perspective of Higher Education professors or their reports, the limitations of ERE regarding the development of practical classes or internships in undergraduate courses (Araújo, Alvim, Ferreira, Silva, & Peixoto, 2020a; Araújo et al., 2020b; Nóbrega et al., 2020; Santos et al., 2021b; Silva et al., 2020), the majority of which are in the health area. Of these, only one presented this theme as a focus of analysis (Silva et al., 2020).

When presenting the experiences and perceptions of Higher Education professors and students about Remote Education in the nursing field in the face of the COVID-19 pandemic in a private HEI, Nóbrega et al.

(2020) report that to provide students with some experience of the professional reality in the absence of field internships, Higher Education professors used examples of everyday situations experienced by them or by colleagues in the fight against the pandemic. Santos et al. (2021b), when addressing this limitation based on the perception of Higher Education professors of health courses at a public institution, state that some skills could not be developed in students with the ERE, which forced them to look for other ways to establish theoretical-practical classes: creating online simulations, interactive meetings focused on the development of technical aspects aimed at clinical reasoning and verbal communication and producing videos with practical demonstrations and subsequent discussion with students in the AVA. However, the authors emphasize that, despite being alternatives in emergencies, these virtual activities do not guarantee the knowledge, motor skills, and professional attitudes necessary for training health-area students, which will require new actions and assessments from the courses when returning to In-person Teaching. A similar concern is raised by Araújo et al. (2020a). For these authors, courses in the health area, and especially Dentistry, have their essence based on theoretical-practical activities. For this reason, even if TDICs are incorporated and can contribute to the teaching-learning process, they cannot replace the in-person experiences that are fundamental in the training of future professionals.

In a study that seeks to investigate the conceptions of university professors of Chemistry courses (undergraduate and bachelor's degrees) about experimental activities and the difficulties faced in their development during the ERE, Silva et al. (2020) also present data from professors who, despite considering recorded classes as a possibility for student learning in Remote Education, emphasize that they cannot replace face-to-face activities, especially those carried out in laboratories, necessary for the acquisition and elaboration of practical procedures important for the future professional career.

Considering these and other difficulties faced by Higher Education teachers and students during the ERE, Medeiros et al. (2021), Farage et al. (2021), and Souza et al. (2021) reinforce the need to expand within institutions, debates, problematizations, and studies on undergraduate courses in the post-pandemic period, so that it is possible to evaluate the impacts of training offered remotely, in many situations in a precarious manner, on the academic and professional lives of students, as well as its repercussions on the work of Higher Education professors and other professionals involved. As Souza et al. (2021) pointed out, the lack of infrastructure, the fragmentation of public education policies, and working, teaching, and learning conditions are issues that should be considered in the extension of this debate in the coming years.

Final considerations

This bibliographic study shows that the difficulties faced by higher education professors regarding the development of ERE and the context of the pandemic are focused, especially on the lack of training to work with teaching mediated by TDICs, the negative impacts of work and Remote Teaching on the mental health of the subjects involved, the scarce or absent financial, technical, pedagogical support and psychological support from HEI to professors to carry out work and Remote Teaching, the perception of a decrease in the quality of teaching and learning—further aggravating educational and social inequalities—and the absence of public policies and material conditions that can favor the full achievement of training objectives.

In addition to these factors, one of the difficulties most evident in the studies analyzed refers to the overload of teaching work in the context of the pandemic, understood from different perspectives: increased workload, reorganization of lesson plans and assessment methods, production of materials and new teaching assignments; reduction of rest times with development of activities beyond working hours; increased demands from students on Higher Education professors, with the latter being requested via AVAs, social networks or messaging applications even outside working hours; transformation of the home or family environment into a workplace with the consequent loss of privacy; overlapping/accumulation of activities; increased stress, illness and emotional exhaustion.

Given these limitations, the formative and reflective processes on didactic-pedagogical actions and on the objective conditions in which these actions materialize emerge as challenges for a broader understanding of this context and its impacts on higher education, which implies, among other aspects, a socio-professional awareness of teaching work and its social role. For this awareness to gain meaning, however, it is necessary to guarantee space and conditions for Higher Education professors to participate in decisions that directly impact educational policy, teaching work, and the redefinition of teaching-learning models, resources, and processes, including in this context of a pandemic. Otherwise, teaching functions in higher education—or at any other level of education—will occur in the wake of decisions made by bodies considered superior in the

dynamics of power relations specific to institutions, fueling the reproduction of existing conditions, the process of alienation from work and, as a consequence, Higher Education professor discomfort.

In addition to advisory, regulatory, and deliberative bodies, another possibility for problematizing these issues and for Higher Education professors to participate in decisions that impact their work and training activities is the creation of study groups, collective spaces, or communities of Higher Education professors who can share knowledge and experiences, contributing to political-pedagogical reflection from a collective and dialogical perspective. However, for this to happen, conditions, knowledge, and initiatives on the part of management teams are necessary, as well as public policies aimed at professionalizing and valuing teaching work. After all, any solution for teaching, in times of pandemic, must consider not only the specificities of the moment but also the needs, knowledge, and demands of those involved in the educational process.

In addition to spaces for study and debate, the coming years will require education professionals and HEI to strengthen and expand training initiatives that equip, articulate, and involve the collective of those who defend a socially referenced quality education, given the limitations that this period of emergency remote education has imposed on student training and teaching work, in this particular case, in higher education.

Furthermore, public policies are needed to guarantee greater investment in education, considering the need to mitigate the educational, social, and structural inequalities that have been further highlighted and exacerbated during this pandemic period, as well as to guarantee adequate working conditions for Higher Education professors and access and permanence for students in HEI. After all, as Magalhães (2021, p. 64) states, “[...] such decisions are urgent and necessary to give greater meaning to pedagogical work, to avoid the widening of educational inequalities and to prevent subjections that increase the intensification, precariousness, and degradation of teaching work.”

Based on this mapping, carried out based on the knowledge produced to date regarding the impacts and difficulties that ERE has brought to the training and work of Higher Education professors, some gaps were also identified. While this research topic has increasingly gained prominence in recent academic production, the work and ERE deserve to be better explored and investigated in the context of higher education, including concerning their impacts on research production, the guidance of academic-scientific work, and the development of outreach programs and actions for the community. In addition, it is necessary to expand studies that focus on training and teaching work in undergraduate courses, as well as in subjects of a fundamentally practical nature, such as supervised internships and subjects that include workload developed in laboratories or practical fields.

Furthermore, new studies that identify the influences of ERE on Higher Education professor learning and the constitution of their identity, knowledge, and professional experiences are considered relevant so that it is possible to analyze how these learnings and experiences influence and are influenced by the conceptions of teaching and education that emerged with the pandemic. Considering that this new knowledge arises from the demands of a political and sociocultural context, these studies must not lose sight of the analysis of the topic based on the adverse conditions resulting from the pandemic and the political contours that interfered with its confrontation. Such an initiative requires researchers to analyze data and engage in the dilemmas of this broader and more complex context that has limited and interfered with the developments of research and science in Brazil, as well as in professor training and work.

While this study does not constitute the beginning of the discussion on the topic nor exhaust this debate, it brings to light essential elements and issues supporting future discussions and actions. Indeed, the difficulties, challenges, and demands generated during this period will have significant repercussions in the coming years, including for professor training and work, requiring in-depth research on this topic.

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INFORMATION ABOUT THE AUTHORS

Natalia Neves Macedo Deimling: Associate Professor at the Federal Technological University of Paraná (UTFPR), Campo Mourão campus. Professor of the Graduate Program in Teaching Human, Social and Natural Sciences (PPGEN) at UTFPR. Ph.D. in Education from the Federal University of São Carlos (UFSCar). Leader of the study group Teacher Training and Pedagogical Practices at UTFPR.

ORCID: <http://orcid.org/0000-0001-8394-3132>

E-mail: natanema@gmail.com

Aline Maria de Medeiros Rodrigues Real: Senior Graduate Program in Education (PPGE) Professor at the Federal University of São Carlos (UFSCar). Ph.D. in Psychology from the University of São Paulo (USP). Productivity in Research Fellowship from the National Council for Scientific and Technological Development (CNPq). Leader of the Basic and Continuing Teacher training research group at UFSCar.

ORCID: <http://orcid.org/0000-0003-4915-8127>

E-mail: alinereali@gmail.com

NOTE:

The authors declare that they are responsible for the conception, analysis, and interpretation of the data, the writing and critical review of the manuscript's content, and the approval of the final version to be published.

Associate Editor in Charge:

Terezinha Oliveira (UEM)

ORCID: <http://orcid.org/0000-0001-5349-1059>

E-mail: teleoliv@gmail.com

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Adriana Curti Cantadori de Camargo

Vanêssa Vianna Doveinis