

# PROFESSIONAL CHALLENGES IN EDUCATION REMOTE TEACHING DURING THE COVID-19 PANDEMIC

## DESAFIOS PROFISSIONAIS NA EDUCAÇÃO COM AULAS REMOTAS DURANTE A PANDEMIA DA COVID-19

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**Abstract:** The purpose of this investigation was to analyze professional challenges faced by Brazilian teachers teaching remotely in the context of the Covid-19 pandemic. The quantitative method was applied via Multiple Logistic Regression, using the 15.0 version of the Stata Software. The study was conducted with 258 education professionals working from home. A significant number of teachers described themselves as being unprepared to cope with remote teaching (26.8%). A greater percentage stated their enthusiasm for learning new technologies (70.2%), despite an increased workload (77.5%); still, 61.4% indicated that student absence had increased. The impact of the new working conditions on the participating teachers' performance revealed to be attenuated by such variables as educational level; pleasant work environment, including flexibility and well-being; tolerance to meetings and training sessions; perception of productivity; and professional identity. The results indicate that post-pandemic educational policies should foster participation as well as consider inequalities and issues of access to information and communications technologies, with attention to vulnerable groups of students and the necessary professional enhancement and appreciation of teachers.

**Keywords:** Education Professionals. Covid-19 Pandemic. Remote Teaching. Equity.

**Resumo:** O objetivo dessa investigação foi analisar desafios profissionais enfrentados por professores brasileiros com aulas remotas no contexto da pandemia do Covid 19. O método quantitativo utilizado foi a Regressão Logística Múltipla, utilizando o Software Stata versão 15.0. Foram estudados 258 profissionais da educação em home office. Entre os docentes, o despreparo para o enfrentamento das aulas remotas foi notório (26,8%) e o entusiasmo para aprender novas tecnologias (70,2%), mesmo em sobrecarga de trabalho (77,5%), mas 61,4% indicam que os alunos estão mais ausentes. Essa repercussão no trabalho foi atenuada por variáveis como grau de instrução, ambiente agradável para trabalhar, com flexibilidade e bem estar, tolerância a reuniões e treinamentos, percepção de produtividade e identidade profissional. Importa que as políticas educacionais pós pandemia sejam mais participativas e considerem o enfrentamento de desigualdades e o acesso às tecnologias da informação e comunicação com atenção a grupos de alunos em situação de vulnerabilidade e a necessária valorização profissional docente.

**Palavras-chave:** Profissionais da Educação. Pandemia da Covid-19. Aulas Remotas. Equidade.

## Introduction

Social distancing as a strategy to mitigate the spread of Covid-19 has resulted in nearly 1.5 billion young people and children from 165 countries being out of school, corresponding to 87% of the world's student population. This unprecedented educational crisis calls for responses from teachers, administrators, and families, supported by public policies based on citizen-centered solutions (UNESCO, 2020).

The crisis has challenged the observance of the basic social rights of Brazilian teachers such as specific teaching training and professional appreciation, including career paths and wages compatible with those perceived by professionals from other fields who have attained the same educational level (BRAZIL, 2014; BERNARDO et al., 2020; FERNANDES et al., 2020).

One of the political strategies to face the Covid-19 pandemic has been to expand social distancing to contain the peak of contamination, leading to the displacement of services to a "home office" context (BRAZIL, 2020, a, b, c). State and municipal governments have assigned several educational professionals to remain working in school units. Apart from those, about 47.9 million Brazilian students in Basic Education (INEP, 2019), 8.4 million in Higher Education, and 2.5 million teachers (INEP, 2018) have had their class seats abruptly transferred to their homes, following measures adopted by the Ministry of Education (MEC) (Brazil, 2020, c, e). Among such measures, a rather controversial one was the proposition of flexible schooldays in Basic and Higher Education (BRAZIL, 2020, c, e).

Among the concerns regarding the closure of educational institutions is the extent to which changes in school workload can significantly delay the development of academic skills (CARLSSON et al., 2015). Another significant effect of the unplanned closure of schools buildings and lessons being conducted remotely is the decrease in children's activities and social contacts, in some cases reaching a 65% reduction (BROOKS et al., 2020). School closures can exacerbate social inequalities among the poorest, affecting low-income children's food security and academic learning (LANCKE & PAROLIN, 2020). Brazilian education has a history full of challenges which are accentuated by the stoppages due to Covid-19 (LUIGI ; SENHORAS, 2020; MARANHÃO ; SENHORAS, 2020) Students experience a new educational paradigm for which there is no operational structure ( lack of support, lack of technology, maintaining classes in the home office model, without training and support technological) (CASTMAN ; RODRIGUES, 2020).

Equity is a watchword in the global connectivity challenge for the continuous provision of educational services. Without connectivity, school buildings' closure has an uneven impact on the educational trajectory of the most vulnerable children and youth who depend on the school for their basic rights and needs in constitutionally established health and education.

There is an enormous gap between the resources available for public and private educational institutions to implement the so-called remote teaching. Although 79.9% of Brazilians live in homes with an internet connection, the main form of access is by mobile phones (99.2%) and only 48.1% with computers. Average per capita income is an indicator of the type of resources available in a household. In 2018, the average per capita income for households without a computer or tablet was R\$ 957; for homes with at least one gadget, the average was R\$ 2,404 (IBGE, 2018).

Another survey on technology use in Brazilian schools (CeticBR, 2018) pointed out that 58% of teachers in urban public schools use mobile phones in activities with students, 51% of whom use their own 3G and 4G network. According to the same research, 30% of private school teachers and 21% of public school teachers participated in training on the use of technology for teaching purposes. It was also found that 47% of private schools used a virtual learning environment, whereas only 17% of public schools had such technology at their disposal. These findings make clear that the closure of buildings' schools and other educational institutions disproportionately affects the most vulnerable social groups (BERGER et al., 2020).

The world of work is in constant and intense transformation, and with that, work with routines and operations are changed and replaced by machines, increasing the extinction of jobs. With this scenario, the (public) school needs to reprogram and prepare new generations for jobs that demand skills associated with creativity, problem-solving, experimentation, and teamwork (COSTIN, 2018). Education in Brazil has undergone significant and relevant changes in the last 20 years. During these years, it was possible to promote the inclusion of the vast majority of children and young people

in primary education, universalizing primary education for children aged 6 to 14 years, of which approximately 91% aged 4 and 5 years are enrolled in pre-school and 83 % of students aged 15 to 17 attend school (CASTRO, 2018).

Although the inclusion process is growing in Brazil, the country is still far from any number representing the reality of the number of young people and adolescents in schools and with access to education. For example, only 60% of young people attend high school at the correct age; out of every 100 students who enroll and enter the first year, only 76 complete elementary schools and 59 complete high school. Furthermore, approximately 20% of young people aged 18 to 24 attend higher education, in addition to 1.7 million young people aged 15 to 18 who do not study and do not work (PNAD, 2017; CASTRO, 2018).

The school day of the Brazilian student is incompatible with a country that is among the ten largest economies in the world due to the degree of social and economic inequality that surrounds the reality of the country (CASTRO, 2018). For Castro (2018), one of the major problems surrounding this reality is the low quality of teaching and great inequality in learning, which interferes in understanding, reading, speaking orally, not having good communication or basic math knowledge.

There is a need to build equity in Brazilian education, as part of the Sustainable Development Goal -SDG 4, which establishes that by 2030, it is necessary to “ensure inclusive, equitable and quality education, and promote opportunities for lifelong learning for all.” In addition, the Organization for Economic Cooperation and Development (OECD), cited equity in 2008, in developing countries. One of its policy briefs considers that equity in education has two dimensions: equal treatment and inclusion. Equal treatment considering personal circumstances such as gender or ethnic origin does not constitute an obstacle to developing educational potential, and inclusion ensuring a minimum level of education for all (COSTIN, 2018).

The equity issue is widely debated in the main international agencies and circuits that deal with the educational area (UNESCO, 2016). Given this context, it is necessary to know how to lead education to people with fewer conditions and in vulnerable regions (poor, rural school students, children and young people with disabilities, or those where parents have little or no education). With an approach in non-monolithic education, in a way that everyone could benefit from identical strategies (COSTIN, 2018).

It is necessary to guarantee quality education, but with attention to issues of social justice. For Costin (2018), equity involves accepting differences, and prioritizing people who have more difficulty in learning. Some strategies to ensure equity in education are proposed by Costin (2018): teachers with a weekly workload of 40 hours; preparation of a clear curriculum, with skills to be developed by all; including the best teachers in schools that serve vulnerable students; offer full-time or extended hours for schools in these regions; Prioritization of vulnerable families when granting places in daycare centers and schools for parents; Build articulated school reinforcement systems; promote articulation with other public policies and encourage, for those schools that are in these conditions, greater use of information technologies.

The political strategy adopted aimed at the continuity of studies at home with teachers in remote access, preparing materials in a new format and differentiated pedagogical conception, and envisioning later coping strategies after the pandemic.

Are teachers and administrators prepared to confront such a sudden change? What are the major repercussions of Covid-19 for education workers?

Given these issues, the present research aimed to analyze the challenges faced by Brazilian teachers in the context of the Covid-19 pandemic.

## Methodology

This study took a quantitative approach by utilizing Multiple Linear Regression, a multivariate statistical analysis technique (HAIR et al., 2017). The Web-based survey form included questions aimed at determining the demographic profile of the respondents and 10 assertions that sought to reveal their perceptions of their time working from home. Table 1 shows the relationship between the assertions and the associated variables and species.

**Table 1.** Assertions for measuring opinion about home office work

Assertion	Variable	Species
I have difficulty delimiting my role and functions at home.	D.Function	Dependent
... I feel unprepared to remote teaching -classes.	Unprepared	Dependent
I feel more productive working from home.	Productive	Independent
I don't feel as professional as before.	Professional Id.	Independent
... I feel that my workload has tripled with remote teaching.	Workload has Tripled	Independent
... I am excited about using new teaching methodologies.	Excitement	Independent
I have a quiet and pleasant working environment.	Environment	Independent
Flexible work schedules at home trigger well-being.	Flexibility	Independent
I can't take any more online training meetings.	T. to meetings	Independent
I support the possibility of home office becoming a part-time policy in organizations.	Future in HO	Independent

**Source:** Prepared by the authors.

The survey form was prepared on a Likert scale. The link was widely publicized on social networks and via e-mail, and it was available from 05/21/2020 to 05/28/2020. Among 949 respondents, 258 forms answered by education professionals were validated for analysis.

The variables DFunction and Unpreparedness were determined as dependent.

Equation 1 -

Where:

- D.Function

- Constant

a – Independent Variables: Ag (Age), G (Gender), MS (Marital Status), CH (Children), EL (Educational Level), LD (Leader), E (Environment), FL (Flexibility) TM (Tolerance to Meetings), FU (Future HO), UN (Unprepared), EN (Enthusiastic), WT (Workload Has Tripled).

- Error term

Equation 2 -

Where:

– Unpreparedness

- Constant

a – Independent Variables: Ag (Age), G (Gender), MS (Marital Status), CH (Children), EL (Educational Level), BET (Basic Ed. Teacher), HET (Higher Ed. Teacher), MP (More Present), E (Environment), PR (Professional), PD (Productive), FL (Flexibility)

- Error term

After collection and previous analysis, the data were organized and standardized in Excel. The variables were duly adjusted and coded. Finally, the data were treated in the *Stata* v15 software, generating the results presented and discussed in the next session.

## Results

The data analysis sought to delineate a demographic characterization of the respondents, elicit their opinions, and subsequently explore the data in the multivariate analysis. Table 1 provides a summary of the descriptive statistics.

**Table 2.** Summary of Descriptive Statistics.

Observations $\bar{n}$	258 (100)
Variables	
Average Age	41 years
Female	75%
Married	57%
Has School-age Children	35%
Occupies Leadership Role	32%

**Source:** Prepared by the authors.

As the table shows, the average age of the participants was 41 years, and 75% of them were female. The average age of the participants was mature, and most of them declared themselves married (57%). Those under the category of “others” (widows, divorced, and other cases) corresponded to 13% of the total. Singles accounted for nearly a third of the respondents (31%). All respondents have a university degree education, and 34.5% have an additional *stricto sensu* graduate degree.

Only 10% of the respondents had already worked from home before the social distancing period. Among the others, 77% had started working from home because of the Covid-19 crisis and had been doing it for more than a month, 11%, for two weeks, and the remaining 2% had started working from home only a week before completing the survey.

Some indicators show the social impacts of social distancing due to Covid-19: 5% of respondents were let go of their jobs, 21% were placed on vacation outside the regulatory period, and 24.14% suffered some reduction in paid working hours.

### Impact on teachers’ perceptions

Among the respondents, 62% declared to be teachers, 24% in Basic Education, and 38% in Higher Education. When asked about their preparedness for teaching remote classes, 26.8% of the respondents stated that they were unprepared. The vast majority of respondents (77.5%) had the perception that their workload had tripled. Although 70.2% consider themselves enthusiastic about learning new methodologies during this period, for 61.4% of them, student absences were higher in remote learning than they had been in face-to-face classes.

### Multivariate Analysis

The data were standardized, coded, and run on Stata IC v.15. The due validation tests were run and considered satisfactory. Table 2 shows the results obtained.

**Table 3.** Multiple Linear Regression Results.

Independent/Dependent Variables	Unpreparedness	DFunction
Age	-0,012	0.028**
Gender	-0,952***	-0.558**
Marital Status	-0,365	-0.005
Children	0,613***	-0.049
Educational Level	-0,419***	-0.022***
Unprepared		0,088
Enthusiastic	0,022	-0.055
Leader	-0,039	-0,456*
Higher Ed. Teacher	0,97*	
Workload has Tripled	0,021	-0.008



Wage Reduction	-0,129	-0.001
Environment	-0,033**	0.189
Flexibility	-0,087**	0.184*
Tolerance to Meetings	-0,135**	0.040
Future in Home Office	-0,005	0.031
Professional	-0,298**	
Productive	-0,241**	
_cons	1,297	1.78

Notes: \*Statistically significant at 10%; \*\*statistically significant at 5%; \*\*\*statistically significant at 1%.

Source: Prepared by the authors.

The first model regards unpreparedness. The table shows that gender was a statistically significant factor, but with a negative coefficient, which means that female respondents (dummy variable 1), feel unprepared to a lesser extent. The variables related to educational level, pleasant work environment, the association of flexibility with well-being, tolerance to meetings and training sessions, perception of productivity, and professional identity were all significant, all with a negative coefficient.

The second model measured the respondents' perception of their ability to delimit their roles and functions in their home environment. In this model, age was statistically relevant. The analysis of the assertions indicates that well-being brought about by flexibility was statistically significant and positive. Gender, leadership, and educational level were statistically significant variables with a negative coefficient, indicating that female respondents with higher educational levels occupying leadership roles demonstrated a lesser ability to delimit their roles and functions.

## Discussion

The potential benefits of shifting from face-to-face learning in schools to remote learning must be balanced against its potentially enormous costs to students' health and academic development, as well as its repercussions on teaching practice. Moreover, during the rapidly evolving crisis, students and educators require great flexibility to ensure school provision and protect students' fundamental social rights (BRASIL, 2014; UNESCO, 2016; COSTIN, 2018).

The massive adoption of remote teaching is no guarantee of satisfactory learning outcomes, especially considering the pervasiveness of functional illiteracy and social inequalities in Brazil's highly heterogeneous educational contexts. Since these issues have reflected on educational policies implemented during the Covid-19 pandemic, public administration actions need to be assessed through careful reflection. This period cannot be used as a justification for a virtual shift in educational systems, which could turn out to be harmful. High-quality online teaching and learning are costly and can potentially foster exclusivity instead of equality (WASSERMAN et al., 2020).

The perception of most education professionals (77.5%) that their workload has tripled indicates the task overload faced by teachers, 64% of whom are on the front lines of online classrooms. Such an additional workload can be even more overwhelming to women, who, as evidenced by many studies, also accumulate responsibilities in managing their own homes (Sousa & Guedes, 2016). All of this extra work and the pressure to reach educational goals, quality indexes, and external evaluations extend teachers' workdays past regular hours and into the weekends, and educational public policies cannot disregard teachers' needs and well-being (SOUZA et al., 2018; GATTI et al., 2019).

The implementation of ICTs in Brazil has been characterized by a significant mismatch between their availability to increasingly larger portions of the population, and their use as teaching-learning resources. For example, only 35% of primary education teachers use the internet in activities with students once a week or more (CGI.br, 2018).

The present investigation brings results about teachers' perception regarding their

unpreparedness for remote teaching and the consequent increase in their workload. In addition, the high percentage of participating teachers who perceive an increased student absence in remote lessons supports previous findings of potential for student distraction and high dropout rates in the e-learning context (FREITAS et al, 2015). Most studies agree that the successful integration of educational technologies strongly depends on teachers' beliefs and skills (BADIA et al., 2014; KIM et al., 2013). Thus, how prepared teachers feel is essential for them to manage the e-learning process adequately. In the present study, the belief in unpreparedness is influenced by perceptions of pleasantness in the environment, well-being due to the flexibility of remote work and, productivity, factors that significantly influence home office (HARRISON, 2007; MARTIN; MACDONNELL, 2012). Having children further affects some of the participating teachers' sense of unpreparedness: married employees with children assume more roles in life, such as wives, mothers, and housekeepers, with a consequent increase in non-work-related responsibilities (SHOCKLEY ; ALLEN, 2012).

Issues such as productivity, professional identity, and well-being due to flexibility also influence the sense of preparedness for remote teaching. Faculties' moderate satisfaction with their online teaching experiences related to flexibility. The sense of unpreparedness is partly explained by the difficulties encountered in the transition from a traditional teaching model to e-learning. Educators experiencing this transition often bring with them traditional pedagogies that may not be as effective in the online environment. In fact, they can hinder productivity and make teachers doubt their level of professionalism in a new setting where they need to develop new professional skills (BEDEZUIDENHOUT, 2018).

The predominance of women among the participants reflects female predominance in the teaching profession (INEP 2018; INEP, 2019) as well as the different ways work, affects men and women (SOUSA ; GUEDES, 2016). Women are more affected than men by the often uneven roles assigned to them regarding household responsibilities. In this sense, the present study reinforces previous investigations of the work-family conflict in the home office situation (ALLEN et al., 2013). The difficulty in delimiting roles increases when working from home increases task load and calls for more responsibilities (SOLIS et al., 2017). Solís et al.'s (2017) investigation of work-family moderators among teleworkers showed a relationship between high levels of work responsibility and high work-family conflict, which may explain the negative influence of leadership on the delimitation of roles and functions at home.

The return to classes after the pandemic should consider the context experienced by its students and teachers during this period. It is also to be considered the necessary adaptation and reinvention of the school for the new moment. The complexity of resuming and advancing in the learning progression will require the involvement of different areas in an integrated and intersectoral support for action. Civil society, public authorities and citizens will need to participate in the task force in favor of education. For many, it seems clear that it will not be a resumption of where we left off on the last day in face-to-face teaching and learning , but a new contextualization and articulation of actions perhaps never carried out before and with such intensity in our generation.

However, the collective effort of organized society and the educational sector will be able to build new support fronts and progress in strengthening ties between family, school, community, and organized civil society and public power, with adequate funding and federative coordination of actions in a cooperative and consultative way. Studying experiences from other regions can also collaborate with the resumption and reinvention of a better and stronger system.

## **Conclusion**

The Covid-19 pandemic did nothing more than exposing the fragility of educational policies' resoluteness during unusual situations and contexts. Brazilian education professionals began to be monitored remotely and have been held to achieving the usual results despite working in adverse situations, often without the necessary training to face both the pandemic and digital challenges. The significant portion of students, families, and teachers lacking adequate access to Wi-Fi technology (or even to the TV channels that have been transmitting lessons taught by public school teachers) further highlights the uneven distribution of rights in society, calling our commitment to equity into question. This confirms the fragility of Brazil's sociocultural infrastructure, in which economically vulnerable citizens lack access to goods and services that the privileged have at their

disposal to attend online classes. Therefore, we may wonder if at the end of this pandemic, teachers will be applauded for their enormous flexibility and effort to adapt to new educational methods in unprecedented circumstances and if they, too—not only corporations or investment funds—will take part in charting the way forward following this global crisis.

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